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DISCOUNT

Importance : 'Discount' questions are special type of Profit and Loss questions. But as question on this type are regularly asked, hence it is suitable to give it as a separate chapter.

Scope of questions : Questions include/discount, successive discount, equivalent discount, C.P./S.P. after discount. Also questions based on special type, like comparison between two discount or comparisons of 'discount' and no discount' conditions are also asked.

Way to success: Note that all calculations of % discount are done on '**Marked**' price and not on C.P./S.P. use formulae for speedy answers. It is important to expertise in identification on all type of questions.

RULE 1 : If Marked Price = (MP)

Selling Price = (SP)

Then, Discount = MP - SP and

$$\text{Discount}\% = \frac{\text{Discount}}{\text{MP}} \times 100$$

$$\text{Discount}\% = \frac{\text{Marked Price} - \text{Selling Price}}{\text{Marked Price}} \times 100$$

Note: Any kind of Discount is calculated only on marked price and not on selling price or cost price.

RULE 2 : If article is sold on D% discount, then

$$\text{SP} = \frac{\text{MP}(100 - D)}{100}$$

$$\text{MP} = \frac{\text{SP} \times 100}{100 - D}$$

RULE 3 : When successive Discounts $D_1, D_2, D_3,$ so on, are given then

$$\text{SP} = \text{MP} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right)$$

RULE 4 : If D_1, D_2, D_3 are successive discounts, then equivalent discount/overall discount is (in percentage)

$$100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \right] \times 100$$

RULE 5 : (Special Case) : When two successive discounts are given, then overall discount is

$$= \left(D_1 + D_2 - \frac{D_1 D_2}{100} \right) \%$$

RULE 6 : If r% of profit or loss occur after giving D% discount on marked price, then $\frac{\text{MP}}{\text{CP}} = \frac{100 \pm r}{100 - D}$

(positive sign for profit and negative for loss)

RULE 7 : 'y' articles (quantity/number) are given free on purchasing 'x' articles. Then, $\text{Discount}\% = \frac{y \times 100}{x + y}$

RULE 8 : A tradesman marks his goods r% above his cost price. If he allows his customers a discount of $r_1\%$ on the marked price. Then its profit or loss per cent is

$$\frac{r \times (100 - r_1)}{100} - r_1$$

(Positive sign signifies profit and negative sign signifies loss).

RULE 9 : The marked price of an article is fixed in such a way that after allowing a discount of r% a profit of R% is obtained. Then the marked price of the article is

$$\left(\frac{r + R}{100 - r} \times 100 \right) \%$$
 more than its cost price.

QUESTIONS ASKED IN PREVIOUS SSC EXAMS

TYPE-I

- Applied to a bill for ₹ 1,00,000 the difference between a discount of 40% and two successive discounts of 36% and 4% is :
(1) Nil (2) ₹ 1,440
(3) ₹ 2,500 (4) ₹ 4,000
(SSC CGL Prelim Exam. 04.07.1999 (First Sitting & SSC Section officer (Audit) Exam ; 16.11.2003))
- Successive discounts of 10% and 30% are equivalent to a single discount of :
(1) 40% (2) 35%
(3) 38% (4) 37%
(SSC CGL Prelim Exam. 04.07.1999 (Second Sitting))
- The marked price of a watch was ₹ 720/-. A man bought the same for ₹ 550.80, after getting two successive discounts, the first at 10%. What was the second discount rate?
(1) 12% (2) 14%
(3) 15% (4) 18%
(SSC CGL Prelim Exam. 27.02.2000 (1st Sitting) & (SSC GL Tier-I Exam. 21.04.2013))
- The marked price of a watch is ₹ 1000. A retailer buys it at ₹ 810 after getting two successive discounts of 10% and another rate which is illegible. What is the second discount rate?
(1) 15% (2) 10%
(3) 8% (4) 6.5%
(SSC CGL Prelim Exam. 24.02.2002 (First Sitting))
- Successive discounts of 10% and 20% are equivalent to a single discount of .
(1) 30% (2) 15%
(3) 28% (4) 12%
(SSC CGL Prelim Exam. 24.02.2002 (1st & IInd Sitting) & (SSC CGL Exam. 08.02.2004 (1st Sitting) & (SSC CHSL DEO & LDC Exam. 11.12.2011 (1st Sitting))
- The equivalent single discount for two successive discounts of 15% and 10% is
(1) 25% (2) 20%
(3) 23.5% (4) 20.5%
(SSC CGL Prelim Exam. 24.02.2002 (Middle Zone))
- The marked price of an article is ₹ 500. It is sold at successive discounts of 20% and 10%. The selling price of the article (in rupees) is :
(1) 350 (2) 375
(3) 360 (4) 400
(SSC CGL Prelim Exam. 11.05.2003 (First Sitting))
- An item is marked for ₹ 240 for sale. If two successive discounts of 10% and 5% are allowed on the sale price, the selling price of the article will be
(1) ₹ 205.20 (2) ₹ 204
(3) ₹ 34.80 (4) ₹ 36
(SSC CGL Prelim Exam. 11.05.2003 (Second Sitting))
- The price of an article is raised by 30% and then two successive discounts of 10% each are allowed. Ultimately the price of the article is
(1) increased by 10%
(2) increased by 5.3%
(3) decreased by 3%
(4) decreased by 5.3%
(SSC CGL Prelim Exam. 11.05.2003 (Second Sitting))
- A single discount equivalent to the successive discounts of 10%, 20% and 25% is
(1) 55% (2) 45%
(3) 46% (4) 60%
(SSC Section Officer (Commercial Audit) Exam. 16.11.2003) & (SSC DEO Exam. 02.08.2009) & (SSC CISF ASI Exam. 29.08.2010)
- List price of an article at a show room is ₹ 2,000 and it is being sold at successive discounts of 20% and 10%. Its net selling price will be :
(1) ₹ 1900 (2) ₹ 1700
(3) ₹ 1440 (4) ₹ 1400
(SSC CGL Prelim Exam. 08.02.2004 (Second Sitting))
- The difference between a single discount of 30% on ₹ 550 and two successive discounts of 20% and 10% on the same amount is
(1) Nil (2) ₹ 11
(3) ₹ 22 (4) ₹ 44
(SSC CPO S.I. Exam. 05.09.2004)
- The marked price of a watch is ₹ 800. A shopkeeper gives two successive discounts and sells the watch at ₹ 612. If the first discount is 10%, the second discount is :
(1) 10% (2) 12%
(3) 15% (4) 20%
(SSC CPO S.I. Exam. 26.05.2005) & (SSC CGL Prelim Exam. 21.04.2013)
- A person paid ₹ 17,000 for a motor-car after a single discount of 15%. If he is given successive discounts of 5% and 10% then how much he would pay ?
(1) ₹ 17,000 (2) ₹ 17,010
(3) ₹ 17,100 (4) ₹ 18,900
(SSC Section Officer (Commercial Audit) Exam. 25.09.2005)
- The list price of a clock is ₹ 160. A customer buys it for ₹ 122.40 after two successive discounts. If first discount is 10%, the second is
(1) 10% (2) 12%
(3) 15% (4) 18%
(SSC CGL Exam. 24.02.2002 (Middle Zone) & (SSC CGL Prelim Exam. 13.11.2005 (IInd Sitting) & (SSC GL Tier-I Exam. 19.05.2013))
- A shopkeeper gives two successive discounts on an article marked ₹ 450. The first discount given is 10 per cent. If the customer pays ₹ 344.25 for the article, the second discount given is
(1) 14 per cent (2) 10 per cent
(3) 12 per cent (4) 15 per cent
(SSC Section Officer (Commercial Audit) Exam. 26.11.2006 (Second Sitting))
- A company offers three types of successive discounts : (i) 25% and 15%, (ii) 30% and 10%, (iii) 35% and 5%. Which offer is the best for a customer?
(1) First offer
(2) Second offer
(3) Third offer
(4) Any one; all are equally good
(SSC CGL Prelim Exam. 04.02.2007 (First Sitting))
- An article is listed at ₹ 900 and two successive discounts of 8% and 8% are given on it. How much would the seller gain or lose, if he gives a single discount of 16%, instead of two discounts ?
(1) Gain of ₹ 4.76
(2) Loss of ₹ 5.76
(3) Gain of ₹ 5.76
(4) Loss of ₹ 4.76
(SSC CGL Prelim Exam. 04.02.2007 (First Sitting))

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19. A dealer buys a car listed at ₹ 200000 at successive discounts of 5% and 10%. If he sells the car for 179550, then his profit is
(1) 10% (2) 9%
(3) 5% (4) 4%
(SSC CGL Prelim Exam. 04.02.2007 (Second Sitting))
20. An article listed at ₹ 800 is sold at successive discounts of 25% and 15%. The buyer desires to sell it off at a profit of 20% after allowing a 10% discount. What would be his list price?
(1) ₹ 620 (2) ₹ 600
(3) ₹ 640 (4) ₹ 680
(SSC CGL Prelim Exam. 04.02.2007 (Second Sitting))
21. The difference between a discount of 40% on ₹ 500 and two successive discounts of 36% and 4% on the same amount is
(1) zero (2) ₹ 1.93
(3) ₹ 2.00 (4) ₹ 7.20
(SSC Section Officer (Commercial Audit) Exam. 30.09.2007 (IInd Sitting) & (SSC CGL Tier-I Exam. 19.06.2011 (IInd Sitting))
22. An article is listed at ₹ 920. A customer pays ₹ 742.90 for it after getting two successive discounts. If the rate of first discount is 15%, the rate of 2nd discount is
(1) 3% (2) 5%
(3) 8% (4) 12%
(SSC CGL Prelim Exam. 27.07.2008 (First Sitting))
23. The marked price of watch was ₹ 820. A man bought the watch for ₹ 570.72 after getting two successive discounts, of which the first was 20%. The second discount was
(1) 18% (2) 15%
(3) 13% (4) 11%
(SSC CGL Prelim Exam. 27.07.2008 (Second Sitting))
24. A bicycle, marked at ₹ 2,000, is sold with two successive discount of 20% and 10%. An additional discount of 5% is offered for cash payment. The selling price of the bicycle at cash payment is
(1) ₹ 1,368 (2) ₹ 1,468
(3) ₹ 1,568 (4) ₹ 1,668
(SSC CGL Prelim Exam. 27.07.2008 (Second Sitting))
25. The difference between a discount of 40% on ₹ 500 and two successive discounts of 30% and 10% on the same amount is
(1) ₹ 15 (2) 0
(3) ₹ 20 (4) ₹ 10
(SSC CPO S.I. Exam. 09.11.2008)
26. The marked price of a T.V. is ₹ 16,000. After two successive discounts it is sold for ₹ 11,400. If the first discount is 5%, then the rate of second discount is
(1) 15% (2) 20%
(3) 30% (4) 25%
(SSC CPO S.I. Exam. 06.09.2009)
27. The difference between a discount of 30% on ₹ 2,000 and two successive discounts of 25% and 5% on the same amount is
(1) ₹ 30 (2) ₹ 35
(3) ₹ 25 (4) ₹ 40
(SSC CPO S.I. Exam. 06.09.2009)
28. If on a marked price, the difference of selling prices with a discount of 30% and two successive discounts of 20% and 10% is ₹ 72, then the marked price (in rupees) is
(1) 3,600 (2) 3,000
(3) 2,500 (4) 2,400
(SSC CGL Tier-I Exam. 16.05.2010 (Second Sitting))
29. Successive discounts of 10%, 20% and 30% is equivalent to a single discount of
(1) 60% (2) 49.6%
(3) 40.5% (4) 36%
(SSC CPO SI Exam. 03.09.2006) & (SSC CGL Tier-I Exam. 16.05.2010 (IInd Sitting) & (SSC CAPF's SI & CISF ASI Exam. 23.06.2013)
30. Two successive discounts of 20% and 20% is equivalent to a single discount of
(1) 42% (2) 40%
(3) 36% (4) 34%
(SSC (South Zone) Investigator Exam 12.09.2010)
31. Two successive discounts of 10% and 5% are equivalent to a single discount of
(1) 14% (2) 14.25%
(3) 14.50% (4) 15%
(SSC CPO S.I. Exam 12.12.2010 (Paper-I))
32. What single discount is equivalent to two successive discounts of 20% and 15%?
(1) 35% (2) 32%
(3) 34% (4) 30%
(SSC CGL Tier-1 Exam 26.06.2011 (First Sitting) & (SSC CHSL DEO Exam. 02.11.2014) (1st Sitting))
33. The single discount equal to three consecutive discounts of 10%, 12% and 5% is
(1) 26.27% (2) 24.76%
(3) 9% (4) 11%
(SSC CGL Tier-1 Exam 26.06.2011 (Second Sitting))
34. Two successive discounts of 5%, 10% are given for an article costing ₹ 850. Present cost of the article is (in ₹) :
(1) 725 (2) 726.75
(3) 700 (4) 650
(FCI Assistant Grade-III Exam. 05.02.2012 (Paper-I) East Zone (IInd Sitting))
35. A shopkeeper purchased a chair marked at ₹ 800, at two successive discounts of 10% and 15% respectively. He spent ₹ 28 on transportation and sold the chair for ₹ 800. His gain percent is :
(1) 40% (2) 30%
(3) 25% (4) 14%
(SSC CGL Prelim Exam. 27.02.2000 (Second Sitting))
36. The discount series 10%, 20%, 40% is equivalent to a single discount of
(1) 50% (2) 56.8%
(3) 60% (4) 62.28%
(SSC CPO S.I. Exam. 07.09.2003) & (SSC DEO Exam. 31.08.2008) & (SSC CHSL DEO & LDC Exam. 04.12.2011) & (SSC GL Tier-II Exam. 16.09.2012)
37. The single discount, which is equivalent to successive discounts of 25% and 10%, is :
(1) 35% (2) 34.5%
(3) 33% (4) 32.5%
(SSC CHSL DEO & LDC Exam. 28.11.2010 (1st Sitting))
38. The single discount equivalent to two successive discounts of 20% and 5% is
(1) 24% (2) 25%
(3) 22% (4) 23%
(SSC SAS Exam. 26.06.2010) & (SSC CHSL DEO & LDC Exam. 28.11.2010 (IInd Sitting))

DISCOUNT

39. The difference between a discount of 35% and two successive discounts of 20% on a certain bill was ₹ 22. The amount of the bill was

- (1) ₹ 200 (2) ₹ 220
(3) ₹ 1,100 (4) ₹ 2,200

(SSC Multi-Tasking (Non-Technical) Staff Exam. 20.02.2011)

40. The marked price of a watch is ₹ 1,600. The shopkeeper gives successive discounts of 10% and $x\%$ to the customer. If the customer pays ₹ 1,224 for the watch, the value of x is

- (1) 5% (2) 10%
(3) 15% (4) 20%

(SSC Multi-Tasking (Non-Technical) Staff Exam. 27.02.2011) & (SSC GL Tier-I Exam. 21.04.2013 (Ist Sitting))

41. A single discount equivalent to discount series 20%, 20% and 10% is

- (1) 50% (2) 48.4%
(3) 42.4% (4) 40.4%

(SSC CHSL DEO & LDC Exam. 04.12.2011 (IInd Sitting (North Zone)))

42. The price of a certain television set is discounted by 10% and the reduced price is then discounted by 10%. This series of successive discounts is equivalent to a single discount of

- (1) 20% (2) 19%
(3) 18% (4) 11%

(SSC CHSL DEO & LDC Exam. 04.12.2011 & 28.10.2012 (Ist Sitting (East Zone)))

43. The single discount which is equivalent to successive discounts of 20%, 15% and 10% is

- (1) 32.7% (2) 34.2%
(3) 36.9% (4) 38.8%

(SSC CHSL DEO & LDC Exam. 04.12.2011 (IInd Sitting (East Zone)))

44. The single discount equivalent to the discount series of 20%, 10% and 5% is :

- (1) 11.66% (2) 31.6%
(3) 35.66% (4) 32%

(SSC CHSL DEO & LDC Exam. 11.12.2011 (IInd Sitting (Delhi Zone)) & (SSC CHSL DEO & LDC Exam. 10.11.2013))

45. Successive discounts of $p\%$ and $q\%$ on the catalogue price of an article is equivalent to a single discount of :

(1) $\left(x - y - \frac{xy}{100}\right)\%$

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(2) $\left(p - q - \frac{pq}{100}\right)\%$

(3) $\left(p + q - \frac{pq}{100}\right)\%$

(4) $\left(p + q + \frac{pq}{100}\right)\%$

(SSC CHSL DEO & LDC Exam. 11.12.2011 (Ist & IInd Sitting

(East Zone) & (SSC Graduate Level Tier-II Exam. 29.09.2013))

46. A chair listed at ₹ 350 is available at successive discounts of 25% and 10%. The selling price of the chair is

- (1) ₹ 236.25 (2) ₹ 230.25
(3) ₹ 240.25 (4) ₹ 242.25

(SSC CHSL DEO & LDC Exam. 21.10.2012 (Ist Sitting))

47. A trader allows two successive discounts of 30% and 15% on selling an article. If he gets ₹ 476 for that article, find its marked price.

- (1) ₹ 700 (2) ₹ 400
(3) ₹ 900 (4) ₹ 800

(SSC CHSL DEO & LDC Exam. 21.10.2012 (IInd Sitting) & (SSC MTS Exam. 10.03.2013))

48. In selling an article, the single discount equivalent to two successive discounts of 25% and 5% is

- (1) 28.75% (2) 30%
(3) 27.5% (4) 26%

(SSC CHSL DEO & LDC Exam. 28.10.2012 (Ist Sitting))

49. The marked price of a table is ₹ 800. A retailer bought it after two successive discounts of 10% and 15%. He spent ₹ 13 on transportation and sold it for ₹ 875. His profit was

- (1) 40% (2) 37%
(3) 28% (4) 25%

(SSC CHSL DEO & LDC Exam. 28.10.2012 (Ist Sitting))

50. Alex sold his goods after announcing two successive discounts of 30% each. The effective discount altogether is

- (1) 52% (2) 49%
(3) 50% (4) 51%

(SSC CHSL DEO & LDC Exam. 04.11.2012 (IInd Sitting))

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51. A sofa-set listed at ₹ 800 is sold to a retailer at successive discounts of 25% and 15% by the wholesaler. Then the cost price of the sofa-set for retailer is

- (1) ₹ 500 (2) ₹ 510
(3) ₹ 550 (4) ₹ 560

(SSC Delhi Police S.I. (SI) Exam. 19.08.2012)

52. The printed price of a book is ₹ 320. A retailer pays ₹ 244.80 for it. He gets successive discounts of 10% and another rate. His second rate is :

- (1) 15% (2) 16%
(3) 14% (4) 12%

(SSC CHSL DEO & LDC Exam. 04.11.2012 (Ist Sitting))

53. A single discount of 50% on an article costing ₹ 10000 is better than two successive discounts of 40% and 10% by

- (1) ₹ 400 (2) ₹ 1000
(3) ₹ 500 (4) ₹ 600

(SSC Multi-Tasking Staff Exam. 10.03.2013, Ist Sitting : Patna)

54. Two successive discounts of 70% and 30% are equivalent to a single discount of

- (1) 75% (2) 79%
(3) 100% (4) 89%

(SSC Multi-Tasking Staff Exam. 17.03.2013, IInd Sitting)

55. A purchased a dining table, marked at ₹ 3,000 at a successive discounts of 10% and 15% respectively. He gave ₹ 105 as transportation charge and sold it at ₹ 3,200. What is his gain percentage?

- (1) $22\frac{1}{3}\%$ (2) 25%
(3) $33\frac{1}{3}\%$ (4) $37\frac{17}{24}\%$

(SSC Multi-Tasking Staff Exam. 24.03.2013, Ist Sitting)

56. A dealer buys a table listed at ₹ 1,500 and gets successive discounts of 20% and 10%. He spends ₹ 20 on transportation and sells at a profit of 20%. Find the Selling Price of the table (in rupees).

- (1) 1320 (2) 1080
(3) 1200 (4) 1230

(SSC FCI Assistant Grade-III Main Exam. 07.04.2013)

DISCOUNT

57. A shopkeeper marks the price of an article at ₹ 80. What will be the selling price, if he allows two successive discounts of 5% each?
 (1) ₹ 72.2 (2) ₹ 72
 (3) ₹ 85 (4) ₹ 7.2
 (SSC Graduate Level Tier-I Exam. 21.04.2013, 1st Sitting)
58. Which of the following successive discounts is better to a customer?
 (a) 20%, 15%, 10% or
 (b) 25%, 12%, 8% ?
 (1) (a) is better
 (2) (b) is better
 (3) (a) or (b) (both are same)
 (4) None of these
 (SSC Graduate Level Tier-I Exam. 21.04.2013, 1st Sitting)
59. The cost price of an article is ₹ 100. A discount series of 5%, 10% successively reduces the price of a article by
 (1) ₹ 4.5 (2) ₹ 14.5
 (3) ₹ 24.5
 (4) None of the above
 (SSC Constable (GD) Exam. 12.05.2013 1st Sitting)
60. An article is marked at ₹ 5,000. The shopkeeper allows successive discounts of $x\%$, $y\%$, $z\%$ on it. The net selling price is
 (1) ₹ $\frac{(100-x)(100+y)(100+z)}{200}$
 (2) ₹ $\frac{(100+x)(100+y)(100-z)}{200}$
 (3) ₹ $\frac{(100-x)(100-y)(100-z)}{200}$
 (4) ₹ $\frac{(100-x)(100+y)(100-z)}{200}$
 (SSC Graduate Level Tier-I Exam. 19.05.2013 1st Sitting)
61. A shopkeeper purchased a chair marked at ₹ 600 at two successive discounts of 15% and 20% respectively. He spent ₹ 28 on transportation and sold the chair for ₹ 545. His gain percent was
 (1) 25% (2) 30%
 (3) 35% (4) 20%
 (SSC Graduate Level Tier-II Exam. 29.09.2013)
62. The marked price of a piano was ₹ 15,000. At the time of sale, there were successive discounts of 20%, 10% and 10% respectively on it. The sale price was
 (1) ₹ 9,720 (2) ₹ 9,750
 (3) ₹ 9,760 (4) ₹ 9,780
 (SSC Graduate Level Tier-II Exam. 29.09.2013)
63. Successive discounts of 30% and 20% is equivalent to a single discount of
 (1) 50% (2) 40%
 (3) 44% (4) 10%
 (SSC CHSL DEO & LDC Exam. 10.11.2013, IInd Sitting)
64. Two successive discounts of 10% and 5%, in this order, are given on a bill of ₹ 110. Find the net amount of money payable to clear the bill.
 (answer to the nearest rupee)
 (1) ₹ 94 (2) ₹ 95
 (3) ₹ 96 (4) ₹ 97
 (SSC CGL Tier-I Re-Exam. (2013))
65. A plate was sold for ₹ 6,300 after giving two successive discounts of $12\frac{1}{2}\%$ and 10%. Find the marked price.
 (1) ₹ 7,300 (2) ₹ 7,700
 (3) ₹ 8,000 (4) ₹ 7,250
 (SSC CGL Tier-I Exam. 19.10.2014 (1st Sitting))
66. A double bed is marked at ₹ 7,500. The shopkeeper allows successive discounts of 8%, 5% and 2% on it. What is the net selling price ?
 (1) ₹ 6, 500 (2) ₹ 6,000
 (3) ₹ 6,423.90 (4) ₹ 6,500.50
 (SSC CHSL DEO & LDC Exam. 16.11.2014)
67. Two successive discounts of 10% and 20%, equals a single discount of
 (1) 30% (2) 25%
 (3) 28% (4) 29%
 (SSC CHSL (10+2) DEO & LDC Exam. 16.11.2014 , 1st Sitting TF No. 333 LO 2)
68. The difference between a discount of 30% and two successive discounts of 20% and 10% on the marked price of an article is Rs. 144. The marked price of the article is
 (1) Rs. 7,200 (2) Rs. 7,400
 (3) Rs. 7,500 (4) Rs. 7,000
 (SSC CGL Tier-II Exam, 2014 12.04.2015 (Kolkata Region) TF No. 789 TH 7)
69. 10% discount and then 20% discount in succession is equivalent to total discount of
 (1) 28% (2) 15%
 (3) 30% (4) 24%
 (SSC CGL Tier-I Exam. 09.08.2015 (1st Sitting) TF No. 1443088)
70. Allowing 20% and 15% successive discounts, the selling price of an article becomes Rs. 3,060; then the marked price will be
 (1) Rs. 4,000 (2) Rs. 4,400
 (3) Rs. 5,000 (4) Rs. 4,500
 (SSC CGL Tier-I Exam. 09.08.2015 (1st Sitting) TF No. 1443088)
71. Find a simple discount equivalent to a discount series of 10%, 20% and 25%.
 (1) 55% (2) 45%
 (3) 52% (4) 46%
 (SSC CGL Tier-I Exam, 16.08.2015 (1st Sitting) TF No. 3196279)
72. The difference between successive discounts of 40% followed by 30% and 45% followed by 20% on the marked price of an article is Rs. 12. The marked price of the article is :
 (1) ₹ 800 (2) ₹ 400
 (3) ₹ 200 (4) ₹ 600
 (SSC CGL Tier-I Exam. 16.08.2015 (1st Sitting) TF No. 3196279)
73. A dealer buys a table listed at Rs. 1,500 and gets successive discounts of 20% and 10%. He spends Rs. 20 on transportation and sells it at a profit of 20%. Find the selling price of the table.
 (1) Rs. 1,420 (2) Rs. 1,300
 (3) Rs. 1,320 (4) Rs. 1,380
 (SSC CGL Tier-I Re-Exam, 30.08.2015)
74. If the cost of an article is Rs. P after two successive reductions of 20% and 25%, the original price of the article was
 (1) Rs. $\frac{5P}{3}$ (2) Rs. $\frac{4P}{5}$
 (3) Rs. $\frac{3P}{5}$ (4) Rs. $\frac{5P}{4}$
 (SSC Constable (GD) Exam, 04.10.2015, 1st Sitting)
75. A scooter is sold at three successive discounts of 10%, 5% and 2%. If the marked price of the scooter is Rs. 18,000, find its net selling price.
 (1) Rs. 15028.20
 (2) Rs. 15082.00
 (3) Rs. 15082.20
 (4) Rs. 15080.00
 (SSC Constable (GD) Exam, 04.10.2015, IInd Sitting)

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76. A single discount equivalent to the series of discounts 20%, 10% and 5% is equal to :
- (1) 32% (2) 30%
(3) 30.7% (4) 31.6%
- (SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 15.11.2015 (Ist Sitting) TF No. 6636838)
77. Successive discounts of 20% and 10% are equivalent to a single discount of :
- (1) 15% (2) 28%
(3) 25% (4) 30%
- (SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 15.11.2015 (IInd Sitting) TF No. 7203752)
78. The list price of an electric fan is Rs. 300. If two successive discounts of 15% and 10% are allowed, its selling price would be
- (1) Rs. 227.50 (2) Rs. 225
(3) Rs. 230 (4) Rs. 229.50
- (SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 20.12.2015 (Ist Sitting) TF No. 9692918)
79. The successive discount of 15%, 20% and 25% on an article is equivalent to the single discount of
- (1) 60% (2) 47%
(3) 49% (4) 40%
- (SSC CGL Tier-I (CBE) Exam. 10.09.2016)
80. If the successive discounts be 20%, 10% and 5%, then the single equivalent rate of discount is :
- (1) 31.6% (2) 31.5%
(3) 31% (4) 31.4%
- (SSC CHSL (10+2) Tier-I (CBE) Exam. 08.09.2016) (Ist Sitting)
81. An item is offered for sale at Rs. 250, less by successive discounts of 20% and 15%. The sale price of the item is :
- (1) 82% of Rs. 250
(2) 77% of Rs. 250
(3) 68% of Rs. 250
(4) 65% of Rs. 250
- (SSC CAPFs (CPO) SI & ASI, Delhi Police Exam. 20.03.2016) (IInd Sitting)
82. A discount series of 15%, 20% and 25% is equal to the single discount of
- (1) 48% (2) 49%
(3) 50% (4) 51%
- (SSC CGL Tier-I (CBE) Exam. 27.08.2016) (Ist Sitting)
83. The list price of an article is Rs. 900. It is available at two successive discounts of 20% and 10%. The selling price of the article is :
- (1) Rs. 640 (2) Rs. 648
(3) Rs. 540 (4) Rs. 548
- (SSC CGL Tier-I (CBE) Exam. 28.08.2016) (IInd Sitting)

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84. A merchant changed his trade discount from 25% to 15%. This would increase selling price by
- (1) $3\frac{1}{3}\%$ (2) $6\frac{1}{6}\%$
(3) $13\frac{1}{3}\%$ (4) $16\frac{1}{3}\%$
- (SSC CGL Tier-I (CBE) Exam. 01.09.2016) (Ist Sitting)
85. Successive discounts of 20% and 10% are given on an item marked at Rs. 700. Find the selling price.
- (1) Rs. 504 (2) Rs. 196
(3) Rs. 582 (4) Rs. 601
- (SSC CGL Tier-I (CBE) Exam. 02.09.2016) (IInd Sitting)
86. Two successive discounts of 10% and 20% are equivalent to a single discount of
- (1) 28% (2) 27%
(3) 25% (4) 30%
- (SSC CGL Tier-I (CBE) Exam. 06.09.2016) (Ist Sitting)
87. The price of a chair is Rs. 500. It has been sold at two successive discounts of 10% each. What is its selling price?
- (1) Rs. 400 (2) Rs. 405
(3) Rs. 415 (4) Rs. 425
- (SSC CGL Tier-I (CBE) Exam. 01.09.2016) (IInd Sitting)
88. Two consecutive discounts $x\%$ and $y\%$ are equivalent to the single discount of
- (1) $\left(x - y + \frac{xy}{100}\right)\%$
(2) $\left(x + y + \frac{xy}{100}\right)\%$
(3) $\left(x - y - \frac{xy}{100}\right)\%$
(4) $\left(x + y - \frac{xy}{100}\right)\%$
- (SSC CGL Tier-I (CBE) Exam. 03.09.2016) (IInd Sitting)
89. Two shopkeepers announce the same price of Rs. 700 for a sewing machine. The first offers successive discounts of 30% and 6% while the second offers successive discounts of 20% and 16%. The difference in their selling price is :
- (1) Rs. 9.8 (2) Rs. 16.8
(3) Rs. 22.4 (4) Rs. 36.4
- (SSC CGL Tier-I (CBE) Exam. 04.09.2016) (IInd Sitting)
90. When a discount of 20% is given on a sweater, the profit is 28%. If the discount is 14%, then the profit is
- (1) 42 per cent
(2) 46.4 per cent

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- (3) 33.2 per cent
(4) 37.6 per cent
- (SSC CHSL (10+2) Tier-I (CBE) Exam. 16.01.2017) (IInd Sitting)
91. A shopkeeper offers 15% discount on all plastic toys. He offers a further discount of 4% on the reduced price to those customers who pay cash. What does a customer have to pay (in Rs.) in cash for a toy of Rs 200?
- (1) 133.7 (2) 129.8
(3) 163.2 (4) 153.3
- (SSC CGL Tier-II (CBE) Exam. 12.01.2017)
92. A dinner set is quoted for Rs. 1500. A customer pays Rs. 1173 for it. If the customer got a series of two discounts and the rate of first discount is 15% then the rate of second discount was
- (1) 15% (2) 7%
(3) 9% (4) 8%
- (SSC CGL Tier-II (CBE) Exam. 12.01.2017)
93. A trader marks the sale price 25% more on cost price and gives a 10% discount at the time of selling. The gain per cent is
- (1) $12\frac{1}{2}\%$ (2) $12\frac{1}{3}\%$
(3) $11\frac{1}{2}\%$ (4) 12%
- (SSC Multi-Tasking Staff Exam. 30.04.2017)

TYPE-II

1. A tradesman marks his goods 10% above his cost price. If he allows his customers 10% discount on the marked price, how much profit or loss does he make, if any?
- (1) 1% gain
(2) 1% loss
(3) 5% gain
(4) No gain, no loss
- (SSC CGL Prelim Exam. 04.07.1999) (First Sitting)
2. A trademan marks his goods at 20% above the cost price. He allows his customers a discount of 8% on marked price. Find out his profit per cent.
- (1) 12% (2) 10.4%
(3) 8.6% (4) 8.2%
- (SSC CGL Prelim Exam. 04.07.1999) (Second Sitting)
3. A shopkeeper marks his goods 20% above cost price, but allows 30% discount for cash. His net loss is :
- (1) 8% (2) 10%
(3) 16% (4) 20%
- (SSC CGL Prelim Exam. 27.02.2000) (First Sitting)

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 4. A shopkeeper marks his sarees at 20% above the cost price and allows the purchaser a discount of 10% for cash buying. What profit percent does he make?

- (1) 18% (2) 12%
 (3) 10% (4) 8%

(SSC CGL Prelim Exam. 27.02.2000) (IInd Sitting) & (SSC Section Officer Exam. 25.09.2005) & (SSC CPO SI. Exam. 03.09.2006) & (SSC CPO SI. Exam. 16.12.2007) & (SSC SAS Exam. 26.06.2010)

5. A trader marked the selling price of an article at 10% above the cost price. At the time of selling, he allows certain discount and suffers a loss of 1%. He allowed the discount of :

- (1) 11% (2) 10%
 (3) 9% (4) 10.5%

(SSC CGL Prelim Exam. 11.05.2003 (1st Sitting) & (SSC CGL Prelim Exam. 04.02.2007 (IInd Sitting))

6. A shopkeeper marks his goods at 30% above the cost price but allows a discount of 10% at the time of sale. His gain is

- (1) 21% (2) 20%
 (3) 18% (4) 17%

(SSC CGL Exam. 11.05.2003 (IInd Sitting) & (SSC CGL Prelim Exam. 27.07.2008 (1st Sitting))

7. A shopkeeper marks the price of an item keeping 20% profit. If he

offers a discount of $12\frac{1}{2}\%$ on the marked price, his gain percent will be

- (1) 4.5% (2) 5%
 (3) 7.5% (4) 8%

(SSC (South Zone) Investigator Exam 12.09.2010)

8. A seller marks his goods 30% above their cost price but allows 15% discount for cash payment. His percentage of profit when sold in cash is

- (1) 10.5% (2) 15%
 (3) 9% (4) 8.5%

(SSC (South Zone) Investigator Exam. 12.09.2010)

9. A tradesman marks his goods at 25% above its cost price and allows purchasers a discount of $12\frac{1}{2}\%$ for cash payment. The profit, he thus makes, is

- (1) $9\frac{3}{8}\%$ (2) $9\frac{1}{2}\%$

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 (3) $8\frac{1}{2}\%$ (4) $8\frac{3}{8}\%$

(SSC Data Entry Operator Exam. 31.08.2008) & (SSC CGL Prelim Exam. 27.07.2008 (IInd Sitting))

10. What price should a shopkeeper mark on an article costing him ₹ 200 to gain 35% after allowing a discount of 25% ?

- (1) ₹ 270 (2) ₹ 300
 (3) ₹ 330 (4) ₹ 360

(SSC CHSL DEO & LDC Exam. 27.11.2010)

11. A trader marks his goods 40% above cost price and allows a discount of 25%. The profit he makes, is :

- (1) 15% (2) 10%
 (3) 5% (4) 2%

(SSC CHSL DEO & LDC Exam. 28.11.2010 (1st Sitting))

12. A dealer marks his goods 20% above their cost price. He then allows some discount on marked price so that he makes a profit of 10%. The rate of discount is

- (1) $10\frac{1}{3}\%$ (2) $9\frac{1}{3}\%$
 (3) $8\frac{2}{3}\%$ (4) $8\frac{1}{3}\%$

(SSC CHSL DEO & LDC Exam. 28.11.2010 (IInd Sitting))

13. In a shop, shirts are usually sold at 40% above the cost price. During a sale, the shopkeeper offers a discount of 10% off the usual selling price. If he manages to sell 72 shirts for ₹ 13,608, then his cost price per shirt, (in ₹) is

- (1) 210 (2) 150
 (3) 149 (4) 125

(SSC CHSL DEO & LDC Exam. 04.12.2011 (1st Sitting (North Zone))

14. If a shopkeeper marks the price of goods 50% more than their cost price and allows a discount of 40%, what is his gain or loss percent ?

- (1) Gain of 10% (2) Loss of 10%
 (3) Gain of 20% (4) Loss of 20%

(SSC CHSL DEO & LDC Exam. 04.12.2011 (IInd Sitting (North Zone))

15. A dealer marks his goods at 40% above the cost price and allows a discount of 20% on the marked price. The dealer has a

- (1) loss of 20% (2) gain of 25%
 (3) loss of 12% (4) gain of 12%

(SSC CPO S.I. Exam. 26.05.2005) & (SSC CHSL DEO & LDC Exam. 11.12.2011 (1st Sitting (Delhi Zone))

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 16. A trader marks his goods 45% above the cost price and gives a discount of 20% on the marked price. The gain % on goods he makes is :

- (1) 15% (2) 14%
 (3) 29% (4) 16%

(SSC CHSL DEO & LDC Exam.

11.12.2011 (IInd Sitting (Delhi Zone))

17. Maha Bazaar offers 20% discount on bags which have been marked 50% above the cost price. Amarnath pays ₹ 840 for a bag. Then the cost price of the bag is

- (1) ₹ 672 (2) ₹ 700
 (3) ₹ 790 (4) ₹ 810

(SSC CHSL DEO & LDC Exam.

11.12.2011 (1st Sitting (East Zone))

18. A merchant marks his goods 40% above the cost price and sells them at a discount of 15%. Find his gain %.

- (1) 25% (2) 22%
 (3) 19% (4) 20%

(SSC Constable (GD) & Rifleman (GD) Exam. 22.04.2012 (1st Sitting))

19. A trader marks his goods at 20% above the cost price. If he allows a discount of 5% for cash down payment, his profit percent for such a transaction is

- (1) 15% (2) 12%
 (3) 14% (4) 17%

(SSC Constable (GD) & Rifleman (GD) Exam. 22.04.2012 (IInd Sitting) & (SSC CGL Prelim

Exam. 11.05.2003 (1st Sitting))

20. The marked price is 20% higher than cost price. A discount of 20% is given on the marked price. By this type of sale, there is

- (1) 4% loss
 (2) 2% loss
 (3) no loss no gain
 (4) 4% gain

(SSC DEO Exam. 02.08.2009) & (SSC (10+2) Level Data Entry Operator & LDC Exam. 21.10.2012 (1st Sitting))

21. A dealer marks his goods at 25% above the cost price and allows a discount of 10% for cash payment. His profit % is :

- (1) 17.5% (2) 15%
 (3) 12.5% (4) 20%

(SSC CHSL DEO & LDC Exam. 21.10.2012 (IInd Sitting))

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22. To gain 8% after allowing a discount of 10%, by what per cent cost price should be hiked in the list price ?

- (1) 9% (2) 11%
(3) 18% (4) 20%

(SSC CPO Sl. Exam. 26.05.2005)
& (SSC (Commercial Audit)
Exam. 26.11.2006 (IInd Sitting)
& (SSCCHSL DEO & LDC Exam.
28.10.2012 (1st Sitting))

23. How much percent above the cost price should a shopkeeper mark his goods so as to earn a profit of 32% after allowing a discount of 12% on the marked price ?

- (1) 50% (2) 40%
(3) 60% (4) 45%

(SSC Graduate Level Tier-I Exam.
11.11.2012 (1st Sitting))

24. A merchant allows a discount of 10% on marked price for the cash payment. To make a profit of 17%, he must mark his goods higher than their cost price by

- (1) 33% (2) 40%
(3) 27% (4) 30%

(SSC Multi-Tasking Staff
Exam. 17.03.2013, IInd Sitting)

25. A merchant purchases a wrist watch for ₹ 450 and fixes its list price in such a way that after allowing a discount of 10%, he earns a profit of 20%. Find the list price of the watch.

- (1) ₹ 480 (2) ₹ 450
(3) ₹ 600 (4) ₹ 540

(SSC CGL Tier-I Exam. 26.06.2011)
& (SSC Multi-Tasking Staff Exam.
17.03.2013 (Kolkata Region))

26. Anand marks up the price of an article by 50% and then allows a discount of 20% and sells it to Balaji. Balaji sells it for ₹ 20 more than what he purchased for, this S.P is 30% more than the original C.P of the article. Then Balaji's profit % is

- (1) 7.5% (2) 6.66%
(3) 8.33% (4) 9%

(SSC CGL Tier-I

Re-Exam. (2013) 27.04.2014)

27. Jasmine allows 4% discount on the marked price of her goods and still earns a profit of 20%. What is the cost price of a shirt if its marked price is ₹ 850?

- (1) ₹ 650 (2) ₹ 720
(3) ₹ 700 (4) ₹ 680

(SSC CGL Tier-I

Re-Exam. (2013) 27.04.2014)

28. The marked price of an article is ₹ 500. A shopkeeper gives a discount of 5% and still makes a profit of 25%. The cost price of the article is.

- (1) ₹ 384 (2) ₹ 380
(3) ₹ 300 (4) ₹ 376

(SSC CGL Tier-I

Re-Exam. (2013) 27.04.2014)

29. If the discount is equal to one fifth of the marked price and the loss is half the discount, then the percentage of loss is

- (1) $10\frac{1}{9}\%$ (2) $11\frac{1}{9}\%$

- (3) $12\frac{1}{9}\%$ (4) $13\frac{1}{9}\%$

(SSC CGL Tier-I Re-Exam. (2013)

20.07.2014 (1st Sitting))

30. A shopkeeper allows a discount of 10% on the marked price of an item but charges a sales tax of 8% on the discounted price. If the customer pays ₹ 3,402 as the price including the sales tax, then the marked price is

- (1) ₹ 3,400 (2) ₹ 3,500
(3) ₹ 3,600 (4) ₹ 3,800

(SSC CGL Tier-I Exam. 19.10.2014)

31. The cost price of a table is ₹ 3,200. A merchant wants to make 25 % profit by selling it. At the time of sale he declares a discount of 20 % on the marked price. The marked price (in ₹) is

- (1) 5,000 (2) 6,000
(3) 4,000 (4) 4,500

(SSC CGL Tier-I Exam. 26.10.2014)

32. A shopkeeper allows a discount of 12.5 % on the marked price of a certain article and makes a profit of 20 %. If the article costs the shopkeeper ₹ 210, then the marked price of the article will be

- (1) ₹ 387 (2) ₹ 350
(3) ₹ 386 (4) ₹ 288

(SSC CGL Tier-I Exam. 26.10.2014)

33. A businessman allows a discount of 10 % on the marked price. What percent above the cost price must he mark his goods to make a profit of 17 per cent ?

- (1) 27 % (2) 18 %
(3) 30 % (4) 20 %

(SSC CGL Tier-I Exam. 26.10.2014)

34. Charging 30% above its production cost a radio maker puts a label of ₹ 286 on a radio as its price. But at the time of selling it, he allows 10% discount on the labelled price. What will his gain be ?

- (1) ₹ 257.40 (2) ₹ 254.40

- (3) ₹ 198 (4) ₹ 37.40

(SSC CGL Tier-I Exam. 26.10.2014)

35. A cycle dealer offers a discount of 10% and still makes a profit of 26%. What does he pay for a cycle whose marked price is ₹ 840 ?

- (1) ₹ 600 (2) ₹ 650

- (3) ₹ 700 (4) ₹ 750

(SSC CGL Tier-II Exam. 21.09.2014)

36. The marked price of an article is 10% higher than the cost price. A discount of 10% is given on the marked price. In this kind of sale, the seller bears.

- (1) no loss, no gain

- (2) a loss of 5%

- (3) a gain of 1%

- (4) a loss of 1%

(SSC CHSL DEO Exam. 02.11.2014)

(1st Sitting)

37. A shopkeeper allows 10% discount on goods when he sells without credit. Cost price of his goods is 80% of his selling price. If he sells his goods by cash, then his profit is

- (1) 50% (2) 70%

- (3) 25% (4) 40%

(SSC CGL Tier-I Exam. 19.10.2014

TF No. 022 MH 3)

38. A dealer of scientific instruments allows 20% discount on the marked price of the instruments and still makes a profit of 25%. If his gain over the sale of an instrument is ₹ 150, find the marked price of the instrument.

- (1) ₹ 938.50 (2) ₹ 940

- (3) ₹ 938 (4) ₹ 937.50

(SSC CGL Tier-I Exam. 19.10.2014

TF No. 022 MH 3)

39. Ram bought a T.V. with 20% discount on the labelled price. Had he bought it with 30% discount he would have saved ₹ 800. The value of the T.V. set that he bought is

DISCOUNT

- (1) ₹ 5,000 (2) ₹ 8,000
 (3) ₹ 9,000 (4) ₹ 10,000
 (SSC CGL Tier-I Exam. 19.10.2014
 TF No. 022 MH 3)

40. If a person marks a product 25% above the cost price but allows 10% discount, then the percentage of profit is

- (1) 35 % (2) 15 %
 (3) 17.5 % (4) 12.5 %

(SSC CGL Tier-II Exam. 12.04.2015
 TF No. 567 TL 9)

41. A tradesman marks his goods at 20% above the cost price. He allows his customers a discount of 8% on the marked price. Then his profit per cent is

- (1) 10.4% (2) 11%
 (3) 12.2% (4) 9.7%

(SSC CGL Tier-II Exam,
 2014 12.04.2015 (Kolkata Region)
 TF No. 789 TH 7)

42. A shopkeeper gains 17% after allowing a discount of 10% on the marked price of an article. Find his profit percent if the articles are sold at marked price allowing no discount.

- (1) 30% (2) 23%
 (3) 27% (4) 37%

(SSC CGL Tier-I Exam, 09.08.2015
 (IInd Sitting) TF No. 4239378)

43. A shopkeeper allows a discount of 10% on the marked price of a camera. Marked price of the camera, which costs him ₹ 600, to make a profit of 20% should be

- (1) ₹ 700 (2) ₹ 750
 (3) ₹ 650 (4) ₹ 800

(SSC CGL Tier-I Exam, 16.08.2015
 (IInd Sitting) TF No. 2176783)

44. If the discount of 10% is given on the marked price of a radio, the gain is 20%. If the discount is increased to 20%, the gain per cent is :

- (1) 5% (2) $6\frac{1}{4}$ %

- (3) $6\frac{2}{3}$ % (4) $7\frac{5}{8}$ %

(SSC CGL Tier-I Exam, 16.08.2015
 (IInd Sitting) TF No. 2176783)

45. 20% profit is made when a discount of 20% is given on the marked price. When the discount is 30% profit will be

- (1) 4% (2) 5%
 (3) 6% (4) 7.5%

(SSC CGL Tier-I
 Re-Exam, 30.08.2015)

46. A seller increases the cost price of an article by 30% and fixed the marked price as Rs. 286. But during sale he gave 10% discount to the purchaser. Percentage of profit will be

- (1) 17 (2) 15
 (3) 10 (4) 20

(SSC Constable (GD)
 Exam, 04.10.2015, 1st Sitting)

47. If a shopkeeper wants to give 20% discount on a toy, he has to sell it for Rs. 300. If he sells it at Rs. 405, then his gain percent is

- (1) 5% (2) 4%
 (3) 8% (4) 6%

(SSC CGL Tier-II Exam,
 25.10.2015, TF No. 1099685)

48. A shopkeeper marks his goods 20% higher than the cost price and allows a discount of 5%. The percentage of his profit is:

- (1) 15% (2) 20%
 (3) 10% (4) 14%

(SSC CHSL (10+2) LDC, DEO
 & PA/SA Exam, 06.12.2015
 (IInd Sitting) TF No. 3441135)

49. After allowing 15% discount, the selling price of a radio becomes Rs. 255. The marked price is

- (1) Rs. 500 (2) Rs. 600
 (3) Rs. 400 (4) Rs. 300

(SSC CHSL (10+2) LDC, DEO
 & PA/SA Exam, 20.12.2015
 (1st Sitting) TF No. 9692918)

50. The marked price of an article is 30% higher than the cost price. If a trader sells the articles allowing 10% discount to customer, then the gain percent will be

- (1) 17 (2) 20
 (3) 19 (4) 15

(SSC CGL Tier-II Online
 Exam.01.12.2016)

51. A merchant marked the price of an article by increasing its production cost by 40%. Now he allows 20% discount and gets a profit of Rs. 48 after selling it. The production cost is

- (1) Rs. 320 (2) Rs. 360
 (3) Rs. 400 (4) Rs. 440

(SSC CGL Tier-II Online
 Exam.01.12.2016)

52. A watch dealer pays 10% customs duty on a watch which costs Rs. 500 abroad. He desires to make a profit of 20% after giving a discount of 25% to the buyer. The marked price should be

- (1) Rs. 950 (2) Rs. 800
 (3) Rs. 880 (4) Rs. 660

(SSC CGL Tier-II Online
 Exam.01.12.2016)

53. The marked price of a laptop is Rs. 12000. In a clearance sale it is sold at a discount of 15%, incurring a loss of 4%. What is the cost price of the laptop?

- (1) Rs. 10200 (2) Rs. 10625
 (3) Rs. 11200 (4) Rs. 10275

(SSC CPO SI, ASI Online
 Exam.05.06.2016) (IInd Sitting)

54. A merchant marks an article 20% above cost price. He then sells it at a discount of 20%. The sale gives him :

- (1) No loss or gain
 (2) 4% loss
 (3) 2% gain
 (4) 4% gain

(SSC CPO Exam. 06.06.2016)
 (1st Sitting)

55. A merchant marks an article 20% above cost price. He then sells it at a discount of 20%. The sale gives him:

- (1) No loss or gain
 (2) 4% loss
 (3) 2% gain
 (4) 4% gain

(SSC CAPFs (CPO) SI & ASI,
 Delhi Police Exam. 05.06.2016)
 (1st Sitting)

56. A trader purchased a gift box for Rs. 150. What should be the marked price on the gift box so that after allowing a discount of 10%, he makes a profit of 10%?

- (1) Rs. 180 (2) Rs. 183.3
 (3) Rs. 186.6 (4) Rs. 190

(SSC CAPFs (CPO) SI & ASI,
 Delhi Police Exam. 05.06.2016)
 (1st Sitting)

57. An article was sold at Rs. 950 allowing 5% discount on the marked price. The marked price of the article is

- (1) Rs. 960 (2) Rs. 1000
 (3) Rs. 955 (4) Rs. 945

(SSC CGL Tier-I (CBE)
 Exam. 28.08.2016) (IInd Sitting)

DISCOUNT

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58. If a shop-keeper marks his goods for a certain amount so as to get 25% gain after allowing a discount of 20%, then his marked price is
 (1) Rs. 156.25 (2) Rs. 146.25
 (3) Rs. 166.25 (4) Rs. 150.25

(SSC CGL Tier-I (CBE))

Exam. 31.08.2016 (1st Sitting)

59. A shopkeeper marks his goods 40% above the cost price and allows a discount of 25% on it. His gain per cent is
 (1) 5% (2) 10%
 (3) 15% (4) 20%

(SSC CGL Tier-I (CBE))

Exam. 04.09.2016 (1st Sitting)

60. A dealer marks his goods 20% above cost price. He then allows some discount on it and makes a profit of 8%. The rate of discount is

- (1) 4% (2) 6%
 (3) 10% (4) 12%

(SSC CGL Tier-I (CBE))

Exam. 07.09.2016 (1st Sitting)

61. A man bought a watch for 10% discount. If he had bought for 20% discount he would have got the watch for Rs. 125 less. The marked price of the watch is

- (1) Rs. 2500 (2) Rs. 1250
 (3) Rs. 3750 (4) Rs. 1000

(SSC CGL Tier-I (CBE))

Exam. 30.08.2016 (IInd Sitting)

62. A merchant marked cloth at Rs. 50 per metre. He offers two successive discounts of 15% and 20%. The net price per metre of cloth is :

- (1) Rs. 32.50 (2) Rs. 42.50
 (3) Rs. 34.00 (4) Rs. 40.00

(SSC CGL Tier-I (CBE))

Exam. 31.08.2016 (IInd Sitting)

63. A dealer marks his goods 20% above their cost prices. Then, he allows such a discount on the marked price so that he makes a profit of 8%. The rate of discount is :

- (1) 12% (2) 10%
 (3) 6% (4) 4%

(SSC CGL Tier-I (CBE))

Exam. 31.08.2016 (IInd Sitting)

64. A trader marks his goods in such a way that after allowing a discount of 10% he gains 15%. If an article costs him Rs. 720, his marked price is

- (1) Rs. 920 (2) Rs. 900
 (3) Rs. 820 (4) Rs. 950

(SSC CGL Tier-I (CBE))

Exam. 01.09.2016 (IInd Sitting)

- www.jkchrome.com
65. While selling a shirt, a shopkeeper gives a discount of 7%. If he gives discount of 9% he earns Rs. 15 less on profit. The marked price of the shirt is

- (1) Rs. 712 (2) Rs. 787
 (3) Rs. 750 (4) Rs. 697

(SSC CGL Tier-I (CBE))

Exam. 02.09.2016 (IInd Sitting)

66. A book seller allowed 10% discount on printed price. He gets 30% commission from publisher. His profit in per cent will be

- (1) 20 (2) $28\frac{4}{7}$

- (3) 25 (4) $26\frac{3}{7}$

(SSC CGL Tier-II (CBE))

Exam. 30.11.2016

67. A dealer is selling an article at a discount of 5% on the marked price. If the marked price is 12% above the cost price and the article was sold for Rs. 532, then the cost price is (in Rs.)

- (1) 500 (2) 525
 (3) 505 (4) 520

(SSC CGL Tier-II (CBE))

Exam. 30.11.2016

68. A shopkeeper increases the price of an object by 40% and then sells it at 25% discount on the marked price. If the selling price of such an object be Rs. 2100, its cost price for the shopkeeper was

- (1) Rs. 3000 (2) Rs. 1500
 (3) Rs. 1750 (4) Rs. 2000

(SSC CGL Tier-II (CBE))

Exam. 30.11.2016

69. A retailer gets a discount of 40% on the printed price of an article. The retailer sells it at the printed price. His gain per cent is

- (1) 40% (2) 55%

- (3) $66\frac{2}{3}\%$ (4) 75%

(SSC CGL Tier-I (CBE))

Exam. 11.09.2016 (1st Sitting)

70. The list price (marked price) of an article is Rs. 900 and is available at two successive discounts of 20% and 10%. The selling price of the article, in rupees, is :

- (1) 640 (2) 648
 (3) 720 (4) 738

(SSC CGL Tier-I (CBE))

Exam. 31.08.2016 (IInd Sitting)

- www.jkchrome.com
71. A shopkeeper marks his goods 50% more than the cost price and allows a discount of 25%. His profit or loss percentage is :

- (1) 37.5% (2) 25.5%
 (3) 12.5% (4) 25%

(SSC CGL Tier-I (CBE))

Exam. 07.09.2016 (IInd Sitting)

TYPE-III

1. A dealer offers a discount of 10% on the marked price of an article and still makes a profit of 20%. If its marked price is ₹ 800, then the cost price of the article is :

- (1) ₹ 900 (2) ₹ 800
 (3) ₹ 700 (4) ₹ 600

(SSC CGL Prelim Exam.)

24.02.2002 (First Sitting)

2. The marked price of an article is ₹ 200. A discount of $12\frac{1}{2}\%$ is

allowed on the marked price and a profit of 25% is made. The cost price of the article is :

- (1) ₹ 200 (2) ₹ 175
 (3) ₹ 120 (4) ₹ 140

(SSC CGL Prelim Exam. 24.02.2002

(Second Sitting))

3. A shopkeeper earns a profit of 10% after allowing a discount of 20% on the marked price. The cost price of the article whose marked price is ₹ 880, is

- (1) ₹ 704 (2) ₹ 640
 (3) ₹ 774 (4) ₹ 680

(SSC CGL Prelim Exam. 24.02.2002

(Middle Zone))

4. By giving a discount of 10% on the marked price of ₹ 1100 of a cycle, a dealer gains 10%. The cost price of the cycle is :

- (1) ₹ 1100 (2) ₹ 900
 (3) ₹ 1089 (4) ₹ 891

(SSC CGL Prelim Exam. 11.05.2003

(First Sitting))

5. The marked price of an electric iron is ₹ 690. The shopkeeper allows a discount of 10% and gains 8%. If no discount is allowed, his gain per cent would be

- (1) 20% (2) 24%
 (3) 25% (4) 28%

(SSC CPO S.I. Exam. 07.09.2003)

DISCOUNT

- 11 www.jkchrome.com
6. A trader wishes to gain 20% after allowing 10% discount on the marked price to his customers. At what per cent higher than the cost price must he mark his goods ?
- (1) 30% (2) $33\frac{1}{3}\%$
(3) $34\frac{2}{3}\%$ (4) 35%
- (SSC CGL Prelim Exam. 08.02.2004 (IInd Sitting) & (SSC CGL Prelim Exam. 04.02.2007) & (SSC MTS Exam. 17.03.2013 (1st Sitting))
7. A shopkeeper buys an article for ₹ 180. He wishes to gain 20% after allowing a discount of 10% on the marked price to the customer. The marked price will be
- (1) ₹ 210 (2) ₹ 240
(3) ₹ 270 (4) ₹ 300
- (SSC Section Officer (Commercial Audit) Exam. 25.09.2005)
8. The cost of manufacturing an article was ₹ 900. The trader wants to gain 25% after giving a discount of 10%. The marked price must be :
- (1) ₹ 1500 (2) ₹ 1250
(3) ₹ 1200 (4) ₹ 1000
- (SSC CGL Prelim Exam. 13.11.2005 (1st Sitting) & (SSC GL Tier-I Exam. 21.04.2013)
9. A shopkeeper offers 10% discount on the marked price of his articles and still makes a profit of 20%. What is the actual cost of the article marked ₹ 500 for him ?
- (1) ₹ 440 (2) ₹ 425
(3) ₹ 400 (4) ₹ 375
- (SSC CGL Prelim Exam. 13.11.2005 (IInd Sitting) & (FCI Assistant Grade-III Exam. 25.02.2012 (Paper-I) (North Zone))
10. The marked price of an electric iron is ₹ 300. The shopkeeper allows a discount of 12% and still gains 10%. If no discount is allowed, his gain per cent would have been :
- (1) 20% (2) 25%
(3) 27% (4) 30%
- (SSC CPO S.I. Exam. 16.12.2007)
11. A manufacturer marked an article at ₹ 50 and sold it allowing 20% discount. If his profit was 25%, then the cost price of the article was
- (1) ₹ 40 (2) ₹ 35
(3) ₹ 32 (4) ₹ 30
- (SSC CGL Tier-I Exam. 16.05.2010 (First Sitting))
12. A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price and the printed price of the book is
- (1) 45 : 56 (2) 45 : 51
(3) 47 : 56 (4) 47 : 51
- (SSC CGL Tier-I Exam. 16.05.2010 (First Sitting))
13. The marked price of a radio is ₹ 480. The shopkeeper allows a discount of 10% and gains 8%. If no discount is allowed, his gain percent would be
- (1) 18% (2) 18.5%
(3) 20.5% (4) 20%
- (SSC CGL Tier-I Exam 19.06.2011 (First Sitting))
14. Marked price of an article is ₹ 275. Shopkeeper allows a discount of 5% and he gets a profit of 4.5%. The actual cost of the article is
- (1) ₹ 250 (2) ₹ 225
(3) ₹ 215 (4) ₹ 210
- (SSC CGL Tier-I Exam 19.06.2011 (Second Sitting))
15. The price that Akbar should mark on a pair of shoes which costs him ₹ 1,200 to gain 12% after allowing a discount of 16% (in rupees) is
- (1) 1,344 (2) 1,433
(3) 1,600 (4) 1,500
- (FCI Assistant Grade-III Exam. 25.02.2012 (Paper-I) North Zone (1st Sitting))
16. In order to maintain the price line a trader allows a discount of 10% on the marked price of an article. However, he still makes a profit of 17% on the cost price. Had he sold the article at the marked price, he would have earned a profit per cent of
- (1) 30% (2) 32%
(3) 33% (4) 35%
- (SSC CPO S.I. Exam. 05.09.2004)
17. A trader sells his goods at a discount of 20%. He still makes a profit of 25%. If he sells the goods at the marked price only, his profit will be
- (1) 56.25% (2) 25.56%
(3) 50.25% (4) 54.25%
- (SSC Section Officer (Commercial Audit) Exam. 30.09.2007 (Second Sitting))
18. After allowing a discount of 16%, there was still a gain of 5%. Then the percentage of marked price over the cost price is
- (1) 15% (2) 18%
(3) 21% (4) 25%
- (SSC CPO (SI, ASI & Intelligence Officer) Exam. 28.08.2011 Paper-I)
19. The marked price of a radio is ₹ 4,800. The shopkeeper allows a discount of 10% and gains 8%. If no discount is allowed, his gain per cent will be
- (1) 18% (2) 20%
(3) 22% (4) 25%
- (SSC Data Entry Operator Exam. 02.08.2009)
20. An article of cost price ₹ 8,000 is marked at ₹ 11,200. After allowing a discount of x% a profit of 12% is made. The value of x is
- (1) 21% (2) 20%
(3) 22% (4) 23%
- (SSC CHSL DEO & LDC Exam. 04.12.2011 (IInd Sitting (East Zone))
21. A trader allows a trade discount of 20% and a cash discount of $\frac{1}{4}\%$ on the marked price of the goods and gets a net gain of 20% of the cost. By how much above the cost should the goods be marked for the sale ?
- (1) 40% (2) 50%
(3) 60% (4) 70%
- (SSC Graduate Level Tier-II Exam. 16.09.2012)
22. A tradesman marks his goods at such a price that after allowing a discount of 15%, he makes a profit of 20%. What is the marked price of an article whose cost price is ₹ 170 ?
- (1) ₹ 240 (2) ₹ 260
(3) ₹ 220 (4) ₹ 200
- (SSC CHSL DEO & LDC Exam. 21.10.2012 (1st Sitting))
23. How much percent above the cost price should a shopkeeper mark his goods so as to earn a profit of 32% after allowing a discount of 12% on the marked price ?
- (1) 50% (2) 40%
(3) 60% (4) 45%
- (SSC CGL Tier-I Exam. 11.11.2012, 1st Sitting)

DISCOUNT

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24. After allowing a discount of 12% on the marked price, a shopkeeper still gains 21%. The marked price is above the cost price by
 (1) 25% (2) 30%
 (3) 37.5% (4) 42.5%
 (SSC Multi-Tasking Staff Exam. 10.03.2013, 1st Sitting : Patna)
25. A profit of 10% is made after giving a discount of 5% on a T. V. If the marked price of the TV is ₹ 2640.00, the cost price of the TV was :
 (1) ₹ 2280 (2) ₹ 2296
 (3) ₹ 2380 (4) ₹ 2396
 (SSC Multi-Tasking Staff Exam. 10.03.2013)
26. A grinder was marked at ₹ 3,600. After given a discount of 10% the dealer made a profit of 8%. Calculate the cost price.
 (1) ₹ 3,000 (2) ₹ 3,312
 (3) ₹ 3,240 (4) ₹ 2,960
 (SSC Constable (GD) Exam. 12.05.2013 1st Sitting)
27. How much percent more than the cost price should a shopkeeper mark his goods so that after allowing a discount of 25% on the marked price, he gains 20% ?
 (1) 70% (2) 50%
 (3) 60% (4) 55%
 (SSC Graduate Level Tier-I Exam. 19.05.2013 1st Sitting)
28. A shopkeeper marks his goods 20% above his cost price and gives 15% discount on the marked price. His gain percent is
 (1) 5% (2) 4%
 (3) 2% (4) 1%
 (SSC Graduate Level Tier-I Exam. 19.05.2013)
29. A shopkeeper marks his goods 40% above the cost price. He allows a discount of 5% for cash payment to his customers. He receives ₹1064 after paying the discount. His profit is
 (1) ₹ 264 (2) ₹ 164
 (3) ₹ 200 (4) ₹ 800
 (SSC CGL Tier-I Re-Exam. (2013) 27.04.2014)
30. The true discount on ₹ 1, 860 due after a certain time at 5% is ₹ 60. Find the time after which it is due.
 (1) 10 months (2) 8 months
 (3) 9 months (4) 1 year
 (SSC CGL Tier-I Re-Exam. (2013) 20.07.2014 (1st Sitting))
31. A shopkeeper sold an item for ₹1,510 after giving a discount of $24\frac{1}{2}\%$ and thereby incurred a loss of 10%. Had he sold the item without discount, his net profit would have been
 (1) ₹ 641 (2) ₹ $322\frac{1}{9}$
 (3) ₹ $422\frac{2}{9}$ (4) ₹ $322\frac{2}{9}$
 (SSC CGL Tier-I Re-Exam. (2013) 20.07.2014 (IInd Sitting))
32. A trader buys goods at 20% discount on marked price. If he wants to make a profit of 25% after allowing a discount of 20%, by what percent should his marked price be greater than the original marked price ?
 (1) 15% (2) 65%
 (3) 25% (4) 20%
 (SSC CGL Tier-I Exam. 19.10.2014)
33. A shopkeeper sold an item at 10% loss after giving a discount equal to half the marked price. Then the cost price is
 (1) $\frac{1}{9}$ th of marked price
 (2) $\frac{4}{9}$ th of marked price
 (3) $\frac{5}{9}$ th of marked price
 (4) $\frac{7}{9}$ th of marked price
 (SSC CGL Tier-II Exam. 21.09.2014)
34. A person purchased a saree for ₹ 7710 after availing a net discount of ₹ 1285. The percentage of discount, the saree shop offers, is
 (1) $14\frac{1}{7}\%$ (2) $14\frac{2}{7}\%$
 (3) $14\frac{3}{7}\%$ (4) $14\frac{4}{7}\%$
 (SSC CGL Tier-II Exam. 21.09.2014)
35. After allowing 10% discount, a dealer wishes to sell a machine for ₹ 2,700. At what price must the machine be marked ?
 (1) ₹ 270 (2) ₹ 3,000
 (3) ₹ 2,970 (4) ₹ 2,430
 (SSC CAPFs SI, CISF ASI & Delhi Police SI Exam. 22.06.2014)
36. The marked price of a saree is Rs. 200. After allowing a discount of 20% on the marked price, the shopkeeper makes a profit of Rs. 16. Find the gain percent.
 (1) $11\frac{1}{9}\%$ (2) $9\frac{1}{11}\%$
 (3) 11% (4) 8%
 (SSC CHSL DEO & LDC Exam. 9.11.2014)
37. A merchant offers 8% discount on all his goods and still makes a profit of 15%. If an item is marked ₹ 250, then its cost price is
 (1) ₹ 180 (2) ₹ 200
 (3) ₹ 230 (4) ₹ 187
 (SSC CHSL DEO Exam. 16.11.2014) (1st Sitting)
38. A store offers a variety of discounts that range between 20% and 25% inclusive. If a book is discounted to a price of ₹ 270, then its greatest possible original price was
 (1) ₹ 345.5 (2) ₹ 324
 (3) ₹ 360 (4) ₹ 337.5
 (SSC CGL Tier-II Exam. 12.04.2015 TF No. 567 TL 9)
39. A man allows a discount of 10% on a book whose marked price is Rs. 40. What is the cost price so that the profit is 20%?
 (1) Rs. 35 (2) Rs. 40
 (3) Rs. 30 (4) Rs. 45
 (SSC Constable (GD) Exam. 04.10.2015, IInd Sitting)
40. A shopkeeper earns a profit of 12% on selling a book at 10% discount on the printed price. The ratio of the cost price to the printed price of the book is
 (1) 45 : 56 (2) 50 : 61
 (3) 99 : 125 (4) None of these
 (SSC CGL Tier-I (CBE) Exam. 02.09.2016) (1st Sitting)

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41. A man sold an article for Rs. 450, after allowing a discount of $16\frac{2}{3}\%$ on the printed price. What is that printed price ?

- (1) Rs. 525 (2) Rs. 530
 (3) Rs. 535 (4) Rs. 540

(SSC CGL Tier-I (CBE)
 Exam. 28.08.2016 (1st Sitting))

42. A dealer purchased an article for Rs. 900 and fixes the list price in such a way that he gains 20% after allowing 10% discount, then the list price is :

- (1) Rs. 1180 (2) Rs. 1080
 (3) Rs. 1200 (4) Rs. 1100

(SSC CGL Tier-I (CBE)
 Exam. 10.09.2016 (IIIrd Sitting))

TYPE-IV

1. A discount of $2\frac{1}{2}\%$ is given to the customer on the marked price of an article. A man bought the article for ₹ 39. The marked price of the article is :

- (1) ₹ 42 (2) ₹ 36.5
 (3) ₹ 40 (4) ₹ 41.5

(SSC CGL Prelim Exam. 04.07.1999
 (IInd Sitting))

2. The printed price of an article is ₹ 900 but the retailer gets a discount of 40%. He sells the article for ₹ 900. Retailer's gain per cent is :

- (1) 40% (2) 60%
 (3) $66\frac{2}{3}\%$ (4) $68\frac{1}{3}\%$

(SSC CGL Prelim Exam. 04.07.1999
 (IInd Sitting))

3. A retailer buys 40 pens at the marked price of 36 pens from a wholesaler. If he sells these pens giving a discount of 1%, what is the profit percent?

- (1) 9% (2) 10%

- (3) $10\frac{1}{9}\%$ (4) 11%

(SSC CGL Prelim Exam.
 27.02.2000 (First Sitting))

4. A fan is listed at ₹ 1,500 and a discount of 20% is offered on the list price. What additional discount must be offered to the customer now to bring the net price to ₹ 1,104 ?

- (1) 8% (2) 10%
 (3) 15% (4) 12%

(SSC CGL Prelim Exam.
 24.02.2002 (Second Sitting))

www.jkchrome.com
5. A retailer gets a discount of 40% on the printing price of an article. The retailer sells it at the printing price. His gain per cent is

- (1) 40% (2) 55%

- (3) $66\frac{2}{3}\%$ (4) 75%

(SSC CPO S.I. Exam. 12.01.2003)

6. A man buys an article for ₹ 80 and marks it at ₹ 120. He then allows a discount of 40%. What is the loss or gain per cent ?

- (1) 12% gain (2) 12% loss
 (3) 10% gain (4) 10% loss

(SSC CPO S.I. Exam. 12.01.2003)

7. A discount of 14% on the marked price of an article is allowed and then the article is sold for ₹ 387. The marked price of the article is

- (1) ₹ 450 (2) ₹ 427

- (3) ₹ 500 (4) ₹ 440

(SSC CGL Prelim Exam. 11.05.2003
 (First Sitting))

8. A shopkeeper sells his goods at 10% discount on the marked price. What price should he mark on an article that costs him ₹ 900 to gain 10% ?

- (1) ₹ 1275 (2) ₹ 1250

- (3) ₹ 1175 (4) ₹ 1100

(SSC CGL Prelim Exam. 11.05.2003
 (Second Sitting))

9. A tradesman gives 4% discount on the marked price and gives 1 article free for buying every 15 articles and thus gains 35%. The marked price is increased above the cost price by

- (1) 40% (2) 39%

- (3) 50% (4) 20%

(SSC CGL Prelim Exam.
 11.05.2003 (Second Sitting))

10. A sells a scooter priced ₹ 36,000. He gives a discount of 8% on the first ₹ 20,000 and 5% on the next ₹ 10,000. How much discount can he offer on the remaining ₹ 6,000 if he is to get as much as when 7% discount is allowed on the total ?

- (1) 5% (2) 6%

- (3) 7% (4) 8%

(SSC CPO S.I. Exam. 07.09.2003)

11. A trader marked the price of his commodity so as to include a profit of 25%. He allowed discount of 16% on the marked price. His actual profit was :

- www.jkchrome.com
 (1) 5% (2) 9%

- (3) 16% (4) 25%

(SSC CGL Prelim Exam. 08.02.2004
 (First Sitting))

12. If a discount of 20% on the marked price of a shirt saves a man Rs. 150, how much did he pay for the shirt ?

- (1) ₹ 600 (2) ₹ 650

- (3) ₹ 500 (4) ₹ 620

(SSC Section Officer (Commercial
 Audit) Exam. 30.09.2007
 (Second Sitting))

13. Ravi buys an article with a discount of 25% on its marked price. He makes a profit of 10% by selling it at ₹ 660. The marked price of the article was:

- (1) ₹ 600 (2) ₹ 700

- (3) ₹ 800 (4) ₹ 685

(SSC CPO S.I. Exam. 16.12.2007)

14. An article is sold at a discount of 20% and an additional discount of 30% is allowed on cash payment. If Vidya purchased the article by paying ₹ 2240 in cash, the marked price of the article was

- (1) ₹ 4000 (2) ₹ 4368

- (3) ₹ 4400 (4) ₹ 4480

(SSC CGL Prelim Exam. 27.07.2008
 (First Sitting))

15. While selling a cooler, a shopkeeper gives a discount of 10% on the marked price. If he gives a discount of 12% he earns ₹ 35 less as profit. The marked price of the cooler is

- (1) ₹ 1,650 (2) ₹ 1,625

- (3) ₹ 1,725 (4) ₹ 1,750

(SSC CGL Prelim Exam. 27.07.2008
 (Second Sitting))

16. A trader gains 15% after selling an item at 10% discount on the printed price. The ratio of the cost price and printed price of the item is

- (1) 18 : 23 (2) 17 : 18

- (3) 17 : 23 (4) 18 : 25

(SSC CGL Prelim Exam. 27.07.2008
 (Second Sitting))

17. While selling a shirt, a shopkeeper gives a discount of 7%. If he had given a discount of 9% he would have got ₹ 15 less as profit. The marked price of the shirt is

- (1) ₹ 750 (2) ₹ 720

- (3) ₹ 712.50 (4) ₹ 600

(SSC SAS Exam 26.06.2010
 (Paper-1))

DISCOUNT

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18. The selling price of an article is ₹ 1,920 and the discount given is 4%. The marked price of the article is
 (1) ₹ 2,400 (2) ₹ 2,000
 (3) ₹ 1,600 (4) ₹ 1,200
 (SSC CISF ASI Exam. 29.08.2010 (Paper-1))
19. An article, which is marked ₹ 650, is sold for ₹ 572. The discount given is
 (1) 12% (2) 13%
 (3) 21% (4) 26%
 (SSC CPO S.I. Exam 12.12.2010 (Paper-1))
20. The cost price of an article is 64% of the marked price. The gain percentage after allowing a discount of 12% on the marked price is
 (1) 37.5% (2) 48%
 (3) 50.5% (4) 52%
 (SSC CGL Tier-1 Exam 19.06.2011 (Second Sitting))
21. While selling a watch, a shopkeeper gives a discount of 5%. If he gives a discount of 6%, he earns ₹ 15 less as profit. What is the marked price of the watch?
 (1) ₹ 1,250 (2) ₹ 1,400
 (3) ₹ 1,500 (4) ₹ 750
 (SSC CGL Tier-1 Exam 26.06.2011 (First Sitting))
22. A shop-keeper sells a badminton racket whose marked price is ₹ 30, at a discount of 15% and gives a shuttle cock costing ₹ 1.50 free with each racket. Even then he makes a profit of 20%. His cost price, per racket, is
 (1) ₹ 21.00 (2) ₹ 21.25
 (3) ₹ 20.00 (4) ₹ 19.75
 (SSC CGL Prelim Exam. 08.02.2004 (Second Sitting))
23. A shopkeeper allows 4% discount on his marked price. If the cost price of an article is ₹ 100 and he has to make a profit of 20%, then his marked price must be
 (1) ₹ 96 (2) ₹ 120
 (3) ₹ 125 (4) ₹ 130
 (SSC Data Entry Operator Exam. 31.08.2008)
24. A shopkeeper sells his goods at 15% discount. The marked price of an article whose selling price is ₹ 629 is :
 (1) ₹ 740 (2) ₹ 704
 (3) ₹ 700 (4) ₹ 614
 (SSC CHSL DEO & LDC Exam. 27.11.2010)
25. When a shopkeeper gives 10% discount on the list price of a toy, his gain is 20%. If he had given a discount of 20%, his percentage of gain would have been
 (1) $6\frac{2}{3}\%$ (2) $8\frac{1}{3}\%$
 (3) 10% (4) 15%
 (SSC CPO S.I. Exam. 09.11.2008) & (SSC CHSL DEO & LDC Exam. 28.11.2010 (IInd Sitting))
26. A discount of 24% on the marked price of an article is allowed and then the article is sold for ₹ 342. The marked price of the article is
 (1) ₹ 500 (2) ₹ 490
 (3) ₹ 450 (4) ₹ 430
 (SSC CISF Constable (GD) Exam. 05.06.2011)
27. Rahim bought a T.V. with 20% discount on list price. Had he bought it with 25% discount he would have saved ₹ 500. At what price did he buy the T.V?
 (1) ₹ 16,000 (2) ₹ 12,000
 (3) ₹ 10,000 (4) ₹ 8,000
 (SSC CHSL DEO & LDC Exam. 04.12.2011 (1st Sitting (East Zone) & (SSC GL Tier-II Exam. 16.09.2012))
28. A shopkeeper gains ₹ 56 on a toy after allowing 23% discount on its marked price. If his gain is 10%, then the marked price of the toy is :
 (1) ₹ 810 (2) ₹ 800
 (3) ₹ 560 (4) ₹ 740
 (SSC CHSL DEO & LDC Exam. 11.12.2011 (IInd Sitting (East Zone))
29. A discount of 16% on the marked price of a book enables a man to buy a pen that costs ₹ 80. How much did he pay for the book ?
 (1) ₹ 500 (2) ₹ 480
 (3) ₹ 420 (4) ₹ 340
 (SSC Constable (GD) & Rifleman (GD) Exam. 22.04.2012 (1st Sitting))
30. After allowing a discount of 12% on the marked price of an article, it is sold for ₹ 880. Find its marked price.
 (1) ₹ 1,100 (2) ₹ 2,000
 (3) ₹ 1,000 (4) ₹ 2,100
 (SSC Constable (GD) & Rifleman (GD) Exam. 22.04.2012 (IInd Sitting))
31. A fan in a shop is offered at a discount of 10%. It is sold during clearance sale at 6% discount over the already discounted price at ₹ 846. The original marked price of the fan is
 (1) ₹ 900 (2) ₹ 946
 (3) ₹ 850 (4) ₹ 896
 (SSC Graduate Level Tier-II Exam. 16.09.2012)
32. Mr. A bought a refrigerator with $16\frac{2}{3}\%$ discount on the labelled price. Had he bought it with 25% discount, he would have saved ₹ 600. At what price did he buy the refrigerator ?
 (1) ₹ 6000 (2) ₹ 7200
 (3) ₹ 7500 (4) ₹ 5000
 (SSC CHSL DEO & LDC Exam. 21.10.2012 (IInd Sitting))
33. The selling price of a video game is ₹ 740 and the discount allowed is 7.5%. The marked price of the video game is :
 (1) ₹ 600 (2) ₹ 700
 (3) ₹ 800 (4) ₹ 900
 (SSC CHSL DEO & LDC Exam. 28.10.2012 (1st Sitting))
34. A fan is listed at ₹ 150 and a discount of 20% is given. Then the selling price is
 (1) ₹ 180 (2) ₹ 150
 (3) ₹ 120 (4) ₹ 110
 (SSC CHSL DEO & LDC Exam. 28.10.2012 (1st Sitting))
35. If a dining table with marked price ₹ 6,000 was sold to a customer for ₹ 5,500, then the rate of discount allowed on the table is
 (1) 10% (2) 8%
 (3) $8\frac{1}{3}\%$ (4) 9%
 (SSC Graduate Level Tier-I Exam. 11.11.2012 (1st Sitting))
36. A washing machine is sold at a discount of 30%. If a man buys it for ₹ 6,580, its list price is
 (1) ₹ 7,500 (2) ₹ 8,600
 (3) ₹ 9,400 (4) ₹ 6,990
 (SSC Delhi Police S.I. (SI) Exam. 19.08.2012)
37. An article marked ₹ 800 is offered at ₹ 736 in the off season. The rate of discount offered is :
 (1) 10% (2) 7%
 (3) 7.5% (4) 8%
 (SSC CHSL DEO & LDC Exam. 21.10.2012, IInd Sitting))
38. Discount on a pair of shoes marked at ₹ 475 and discounted at 15%, is
 (1) ₹ 70 (2) ₹ 71.25
 (3) ₹ 72 (4) ₹ 72.25
 (SSC Constable (GD) Exam. 12.05.2013 1st Sitting)

DISCOUNT

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39. A machine is marked at ₹ 6,800 and available at a discount of 10%. The shopkeeper gives another off season discount to the buyer and sells the machine for ₹ 5,202. Find the off season discount.

- (1) 10% (2) 12%
(3) 15% (4) 18%

(SSC Multi-Tasking Staff Exam. 24.03.2013, 1st Sitting)

40. A shopkeeper buys an article for ₹ 360. He wants to make a gain of 25% on it after a discount of 10%. The marked price is

- (1) ₹ 486 (2) ₹ 450
(3) ₹ 500 (4) ₹ 460

(SSC CGL Tier-I Re-Exam. (2013) 20.07.2014 (IInd Sitting))

41. A table with marked price ₹ 1200 was sold to a customer for ₹ 1100. Find the rate of discount allowed on the table.

- (1) 9% (2) $8\frac{1}{3}\%$
(3) $9\frac{1}{3}\%$ (4) 10%

(SSC CGL Tier-I Re-Exam. (2013) 27.04.2014)

42. The marked price of an item is twice the cost price. For a gain of 15%, the discount should be

- (1) 7.5% (2) 20.5%
(3) 32.5% (4) 42.5%

(SSC CHSL DEO & LDC Exam. 9.11.2014)

43. The listed price of a shirt is ₹ 270 and it is available at ₹ 237.60. The rate of discount is

- (1) 10% (2) 12%
(3) 15% (4) 20%

(SSC CHSL (10+2) DEO & LDC Exam. 16.11.2014, IInd Sitting TF No. 545 QP 6)

44. A dealer allows his customers a discount of 25% and still gains 25%. If an article costs Rs. 1,440 to the dealer; then its marked price is

- (1) Rs. 1,850 (2) Rs. 2,400
(3) Rs. 2,560 (4) Rs. 1,500

(SSC CGL Tier-II Exam, 2014 12.04.2015 (Kolkata Region) TF No. 789 TH 7)

45. The marked price of a watch was Rs. 720. A man bought the same for Rs. 550.80 after getting two successive discounts, the first being 10%. The second discount rate is

- (1) 18% (2) 12%
(3) 14% (4) 15%

(SSC CGL Tier-I Exam, 09.08.2015 (1st Sitting) TF No. 1443088)

46. An item was sold for Rs. 3600 at 25% discount. Its marked price was

- (1) Rs. 2880 (2) Rs. 2700
(3) Rs. 4800 (4) Rs. 4500

(SSC Constable (GD)

Exam, 04.10.2015, 1st Sitting)

47. A shopkeeper, in order to clear his old stock of T.V. sets, offers 12% discount on the T.V. sets. If the marked price of a T.V. set is Rs. 6500, the selling price of the T.V. set is:

- (1) Rs. 5700 (2) Rs. 5720
(3) Rs. 5400 (4) Rs. 6000

(SSC Constable (GD)

Exam, 04.10.2015, 1st Sitting)

48. A seller gains 20% profit even after allowing 10% discount. If the amount of profit on a TV set is Rs. 750, then the marked price of the TV set is

- (1) Rs. 5200 (2) Rs. 5000
(3) Rs. 4800 (4) Rs. 5500

(SSC Constable (GD)

Exam, 04.10.2015, IInd Sitting)

49. Articles are marked at a price which gives a profit of 25%. After allowing a certain discount the profit reduces to $12\frac{1}{2}\%$. The

discount percent is

- (1) 11.1% (2) 10%
(3) $12\frac{1}{2}\%$ (4) 12%

(SSC CGL Tier-II Exam,

25.10.2015, TF No. 1099685)

50. After allowing a discount of 20%, a radio is available for Rs. 1200. Its marked price was :

- (1) Rs. 1550 (2) Rs. 1500
(3) Rs. 1800 (4) Rs. 1400

(SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 15.11.2015 (IInd Sitting) TF No. 7203752)

51. The marked price of a CD is Rs. 250. It is sold for Rs. 225. The rate of discount is :

- (1) 2.5% (2) 10%
(3) 25% (4) $11\frac{1}{9}\%$

(SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 06.12.2015 (1st Sitting) TF No. 1375232)

52. A shopkeeper fixes the price of an article at 30% higher than its actual cost. If he sells it at 10% discount on marked price then, the profit is :

- (1) 18% (2) 19%
(3) 17% (4) 20%

(SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 06.12.2015 (1st Sitting) TF No. 1375232)

53. A shop keeper allows 20% discount on the marked price on his articles. Find the marked price of an article for which he charges Rs. 740.

- (1) Rs. 725 (2) Rs. 875
(3) Rs. 925 (4) Rs. 1040

(SSC CGL Tier-I (CBE) Exam. 03.09.2016 (IInd Sitting))

54. The price of a shirt after 15% discount, is Rs.119. What was the marked price of the shirt before discount?

- (1) Rs.129 (2) Rs.140
(3) Rs.150 (4) Rs.160

(SSC CGL Tier-I (CBE) Exam. 29.08.2016 (1st Sitting))

55. A shopkeeper offers 2.5% discount on cash purchases. What cash amount would Rohit pay for a cycle, the marked price of which is Rs. 3600 ?

- (1) Rs. 3490 (2) Rs. 3500
(3) Rs. 3510 (4) Rs. 3520

(SSC CGL Tier-I (CBE) Exam. 04.09.2016 (IInd Sitting))

56. The marked price of an article is 10% higher than the cost price. A discount of 10% is given at the marked price. In this kind of sale, the seller

- (1) bears no gain , no loss
(2) gains
(3) loses 1%
(4) None of these

(SSC CGL Tier-I (CBE)

Exam. 06.09.2016 (IInd Sitting))

57. The rate of discount being given on a shirt, where selling price is Rs. 576 after deducting a discount of Rs. 109 on its marked price, is :

- (1) 14% (2) 18%
(3) 15% (4) 16%

(SSC CGL Tier-I (CBE)

Exam. 06.09.2016 (IInd Sitting))

58. At what percentage above the cost price must an article be marked so as to gain 33% after allowing a customer a discount of 5% ?

- (1) 40% (2) 45%
(3) 35% (4) 47%

(SSC CGL Tier-I (CBE)

Exam. 07.09.2016 (IInd Sitting))

DISCOUNT

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59. The marked price of a ceiling fan is Rs. 1200 and the shopkeeper allows a discount of 5% on it. Then selling price of the fan is
 (1) Rs. 1410 (2) Rs. 1400
 (3) Rs. 1140 (4) Rs. 1104

(SSC CGL Tier-I (CBE))

Exam. 09.09.2016 (IInd Sitting)

60. When a discount of Rs. 42 is allowed on the marked price of an article, the new reduced price becomes 86% of the original price. Find the marked price.
 (1) Rs. 250 (2) Rs. 300
 (3) Rs. 350 (4) Rs. 400

(SSC CGL Tier-I (CBE))

Exam. 09.09.2016 (IIInd Sitting)

61. While selling a watch, a shopkeeper gives a discount of 5%. If he gives a discount of 7%, he earns Rs. 15 less as profit. The marked price of the watch is :
 (1) Rs. 697.5
 (2) Rs. 712.5
 (3) Rs. 750
 (4) None of these

(SSC CGL Tier-I (CBE))

Exam. 10.09.2016 (IInd Sitting)

62. The cost price of an article is Rs. 200. If 20% profit is made after giving 20% discount on the marked price, the marked price is :
 (1) Rs. 300 (2) Rs. 320
 (3) Rs. 420 (4) Rs. 450

(SSC CGL Tier-I (CBE))

Exam. 27.10.2016 (Ist Sitting)

63. If a retailer offers a discount of 32% on the marked price of his goods and thus ends up selling at cost price, what was the percentage markup price?
 (1) 24 per cent
 (2) 47.05 per cent
 (3) 22.34 per cent
 (4) 32 per cent

(SSC CHSL (10+2) Tier-I (CBE))

Exam. 15.01.2017 (IInd Sitting)

64. If the shopkeeper sells an item at Rs 960 which is marked as Rs 1200, what is the discount he is offering ?
 (1) 25 percent (2) 12 percent
 (3) 20 percent (4) 28 percent

(SSC CHSL (10+2) Tier-I (CBE))

Exam. 16.01.2017 (IInd Sitting)

65. A photographer allows a discount of 10% on the advertised price of a camera. The price (in Rs.) that must be marked on the camera, which cost him Rs. 600, to make a profit of 20% would be
 (1) 650 (2) 800
 (3) 700 (4) 850

(SSC CGL Tier-II (CBE))

Exam. 12.01.2017

- www.jkchrome.com
66. What was the rate of discount if a computer with marked price ₹ 30,000 was sold for ₹ 28,000 ?

- (1) 20% (2) $7\frac{1}{2}\%$

- (3) $6\frac{2}{3}\%$ (4) 15%

(SSC Multi-Tasking Staff)

Exam. 30.04.2017

67. Peter bought an item at 20% discount on its original price. He sold it with 40% increase on the price he bought it. The new sale price is greater than the original price (in per cent) by

- (1) 10 (2) 8
 (3) 7.5 (4) 12

(SSC Multi-Tasking Staff)

Exam. 30.04.2017

TYPE-V

1. A discount of 15% on one article is the same as discount of 20% on a second article. The costs of the two articles can be :

- (1) ₹ 85, ₹ 60 (2) ₹ 60, ₹ 40
 (3) ₹ 40, ₹ 20 (4) ₹ 80, ₹ 60

(SSC CGL Prelim Exam. 04.07.1999)

(First Sitting)

2. A salesman is allowed $5\frac{1}{2}\%$ discount on the total sales made

by him plus a bonus of $\frac{1}{2}\%$ on

sales over ₹ 10,000. If his total earnings were ₹ 1,990, his total sales (in ₹) was

- (1) 30,000 (2) 32,000
 (3) 34,000 (4) 35,000

(SSC CPO S.I. Exam. 12.01.2003)

3. A housewife saved ₹ 2.50 in buying a dress on sale. If she spent ₹ 25 for the dress, **approximately** how much per cent she saved in the transaction?

- (1) 8% (2) 9%
 (3) 10% (4) 11%

(SSC Section Officer (Commercial

Audit) Exam. 16.11.2003)

4. A trader marked his goods at 20% above the cost price. He sold half the stock at the marked price, one quarter at a discount

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of 20% on the marked price and the rest at a discount of 40% on the marked price. His total gain is

- (1) 2% (2) 4.5%
 (3) 13.5% (4) 15%

(SSC CGL Prelim Exam. 08.02.2004)

(First Sitting)

5. A fan is listed at ₹ 1500 and a discount of 20% is offered on the list price. What additional discount must be offered to the customer to bring the net price to ₹ 1104 ?

- (1) 8% (2) 10%
 (3) 12% (4) 15%

(SSC CGL Prelim Exam. 13.11.2005)

(First Sitting)

6. A shopkeeper gives 12 per cent additional discount after giving an initial discount of 20 per cent on the marked price of a radio. If the sale price of the radio is ₹ 704, the marked price is

- (1) ₹ 844.80 (2) ₹ 929.28
 (3) ₹ 1,044.80 (4) ₹ 1,000

(SSC Section Officer (Commercial

Audit) Exam. 26.11.2006

(Second Sitting)

7. A dealer buys an article marked at ₹ 25,000 with 20% and 5% off. He spends ₹ 1,000 for its repair and sells it for ₹ 25,000. What is his gain or loss per cent?

- (1) Loss of 25% (2) Gain of 25%
 (3) Gain of 10% (4) Loss of 10%

(SSC CGL Prelim Exam. 04.02.2007)

(First Sitting)

8. The marked price of a shirt and trousers are in the ratio 1 : 2. The shopkeeper gives 40% discount on the shirt. If the total discount on the set of the shirt and trousers is 30%, the discount offered on the trousers is

- (1) 15% (2) 20%
 (3) 25% (4) 30%

(SSC CGL Prelim Exam. 04.02.2007)

(First Sitting)

9. A retailer purchases a grinder at a discount of 15% and sells it for ₹ 1955 at a profit of 15%. The amount of discount received by the retailer from the wholesaler was

- (1) ₹ 270 (2) ₹ 290
 (3) ₹ 300 (4) ₹ 330

(SSC CGL Prelim Exam. 27.07.2008)

(First Sitting)

DISCOUNT

17 www.jkchome.com
10. A dozen pair of socks quoted at ₹ 80 are available at a discount of 10%. How many pairs of socks can be bought for ₹ 24 ?

- (1) 4 (2) 5
 (3) 3 (4) 6

(SSC CPO S.I. Exam. 06.09.2009)

11. If an electricity bill is paid before due date, one gets a reduction of 4% on the amount of the bill. By paying the bill before due date a person got a reduction of ₹ 13. The amount of his electricity bill was

- (1) ₹ 125 (2) ₹ 225
 (3) ₹ 325 (4) ₹ 425

(SSC CGL Tier-I Exam. 16.05.2010
 (Second Sitting))

12. The true discount on a sum of money due 2 years hence at 5% is ₹ 15. Find the sum.

- (1) ₹ 150 (2) ₹ 165
 (3) ₹ 170 (4) ₹ 160

FCI Assistant Grade-III
 Exam. 05.02.2012 (Paper-I)
 East Zone (IInd Sitting)

13. A shopkeeper lists the price of an article as ₹500. But he gives a certain discount which allows the buyer to pay ₹500 for the article including 10% sales tax. The rate of discount is

- (1) 10% (2) $10\frac{1}{11}\%$
 (3) $9\frac{1}{11}\%$ (4) 11%

(SSC CPO (SI, ASI & Intelligence Officer) Exam. 28.08.2011 (Paper-I))

14. With a 5 % discount on the cost of sugar, a buyer could purchase 2 kg more sugar for ₹ 608. Selling price of sugar is :

- (1) ₹ 15.50 (2) ₹ 15
 (3) ₹ 16.50 (4) ₹ 16

(SSC CHSL DEO & LDC Exam. 28.11.2010 (1st Sitting))

15. During a month-long annual sale, a shopkeeper sells his goods at a discount of 50%. But in the last week, he offers an additional discount of 40%. If the original price of a shirt is ₹ x, then the price, (in rupees) during the last week of the sale will be

- (1) 90% of x (2) 70% of x
 (3) 30% of x (4) 10% of x

(SSC CHSL DEO & LDC Exam. 28.10.2012 (1st Sitting))

www.jkchome.com
16. Ramesh bought 10 cycles for ₹500 each. He spent ₹2,000 on the repair of all cycles. He sold five of them for ₹750 each and the remaining for ₹550 each. Then the total gain or loss % is

- (1) Gain of $8\frac{1}{3}\%$
 (2) Loss of $8\frac{1}{3}\%$
 (3) Gain of $7\frac{2}{3}\%$
 (4) Loss of $7\frac{1}{7}\%$

(SSC Graduate Level Tier-I Exam. 11.11.2012 (1st Sitting))

17. A fan is listed at ₹ 1,400 and the discount offered is 10%. What additional discount must be given to bring the net selling price to ₹ 1,200 ?

- (1) $16\frac{2}{3}\%$ (2) 5%
 (3) $4\frac{16}{21}\%$ (4) 6%

(SSC CPO S.I. Exam. 16.12.2007)

18. The Banker's discount on a bill due 6 months hence at 16% per annum is ₹ 216. The true discount is :

- (1) ₹ 212 (2) ₹ 180
 (3) ₹ 210 (4) ₹ 200

(SSC CHSL DEO & LDC Exam. 04.11.2012, 1st Sitting)

19. The cost of manufacture of a tape recorder is ₹ 1,500. The manufacturer fixes the marked price 20% above the cost of manufacture and allows a discount in such a way as to get a profit of 8%. The rate of discount is

- (1) 12% (2) 8%
 (3) 20% (4) 10%

(SSC Graduate Level Tier-I Exam. 11.11.2012, 1st Sitting)

20. A shop offers 10% discount on every purchase of an article. It also offers an additional discount of 12%, if the payment is made in cash. If the original price of an item

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 is ₹ 250, how much a customer will pay, if he wants to pay the price in cash?

- (1) ₹ 180 (2) ₹ 192
 (3) ₹ 198 (4) ₹ 195

(SSC Multi-Tasking Staff Exam. 24.03.2013, 1st Sitting)

21. The interest on a certain sum of money is ₹ 22 and the true discount on the same sum for the same time and at the same rate is ₹ 20, Find the sum.

- (1) ₹ 220 (2) ₹ 200
 (3) ₹ 210 (4) ₹ 212

(SSC Graduate Level Tier-I Exam. 21.04.2013)

22. A mobile phone is listed at ₹ 1,500 and a discount of 10% is offered on the list price. What additional discount must be offered to the customer now to bring the net price to ₹ 1,242?

- (1) 10% (2) 8%
 (3) 12% (4) 18%

(SSC CHSL DEO & LDC Exam. 27.10.2013 IInd Sitting)

23. A reduction of 20% in the price of rice enables a customer to purchase 12.5 kg more for ₹ 800. The original price of rice (per kg) is

- (1) ₹ 14 (2) ₹ 16
 (3) ₹ 12 (4) ₹ 15

(SSC CHSL DEO & LDC Exam. 10.11.2013, 1st Sitting)

24. A reduction of 10% in the price of a commodity enables a person to buy 25 kg more for ₹ 225. The original price of the commodity per kg was

- (1) ₹ 2 (2) ₹ 1
 (3) ₹ 2.50 (4) ₹ 1.50

(SSC CHSL DEO & LDC Exam. 10.11.2013, IInd Sitting)

25. For a certain article, if discount is 25% the profit is 25%. If the discount is 10%, then the profit is

- (1) 50% (2) 40%

- (3) 30% (4) $33\frac{1}{3}\%$

FCI Assistant Grade-III
 Exam. 25.02.2012 (Paper-I)
 North Zone (1st Sitting)

DISCOUNT

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26. A toy train is marked at ₹ 400 and sold at a discount of 8% during Ganesh puja. A shopkeeper announces a discount of 8%. The amount he will loose if he announces a single discount of 16% is

- (1) ₹ 2.56 (2) ₹ 3.84
(3) ₹ 4.16 (4) ₹ 5.78

(SSC CHSL DEO & LDC Exam. 04.11.2012 (IInd Sitting))

27. The marked price of a toy is ₹ 60 and at a discount that was sold for ₹ 45. Then rate of discount allowed is

- (1) 30% (2) 35%
(3) 20% (4) 25%

(SSC Multi-Tasking Staff Exam. 17.03.2013, 1st Sitting)

28. A pen is listed for ₹ 12. A discount of 15% is given on it. A second discount is given bringing the price down to ₹ 8.16. The rate of second discount is

- (1) 20% (2) 15%
(3) 18% (4) 25%

(SSC CGL Prelim Exam. 04.02.2007 (First Sitting))

29. A man saves ₹ 25 on the purchase of an article on which a discount of 20% is allowed. How much did the man pay ?

- (1) ₹ 75 (2) ₹ 150
(3) ₹ 100 (4) ₹ 125

(SSC CGL Tier-I Re-Exam. (2013) 27.04.2014)

30. A is to pay B, ₹ 600 in 4 years time. A offers to pay up B at present. What discount should B allow A ?

- (1) ₹ 96 (2) ₹ 100
(3) ₹ 120 (4) ₹ 110

(SSC CGL Tier-I Re-Exam. (2013) 20.07.2014 (IInd Sitting))

31. To attract more visitors, Zoo authority announces 20% discount on every ticket which costs 25 paise. For this reason, sale of ticket increases by 28%. Find the percentage of increase in the number of visitors.

- (1) 40% (2) 50%
(3) 60% (4) No change

(SSC CGL Tier-I Exam. 19.10.2014 (1st Sitting))

32. The list price of a shirt is ₹ 440 and a customer pays ₹ 396 for it. The discount rate is

- (1) 10% (2) $10\frac{1}{2}$ %
(3) 20% (4) 12%

(SSC CGL Tier-I Exam. 19.10.2014 (1st Sitting))

33. A shopkeeper listed the price of goods at 30% above the cost price. He sells half the stock at this price, one fourth of the stock at a discount of 15% and the remaining at 30% discount. His overall profit is

- (1) $15\frac{3}{8}$ % (2) 15%
(3) $15\frac{3}{5}$ % (4) $15\frac{2}{3}$ %

(SSC CGL Tier-I Exam. 19.10.2014)

34. The discount on a certain sum of money, due at the end of $2\frac{1}{4}$

years at $2\frac{2}{3}$ % p.a. is ₹ 78. Find the sum.

- (1) ₹ 1,278 (2) ₹ 1,300
(3) ₹ 1,378 (4) ₹ 1,400

(SSC CAPFs SI, CISF ASI & Delhi Police SI Exam. 22.06.2014)

35. X purchased an item at a discount of 10% and sold it to Y at 10% profit. The marked price and the price for which Y purchased the item are in ratio

- (1) 1 : 1 (2) 10 : 99
(3) 20 : 99 (4) 100 : 99

(SSC CHSL DEO & LDC Exam. 16.11.2014)

36. If in a sale, the discount given on a saree is equal to one-fourth the marked price and the loss due to this discount is 15%, then the ratio of the cost price to the selling price is

- (1) 3 : 4 (2) 4 : 3
(3) 10 : 17 (4) 20 : 17

(SSC CHSL DEO Exam. 16.11.2014 (1st Sitting))

37. A trader who marks his goods up to 50% offered a discount of 20%. What % profit the trader makes after offering the payment ?

- (1) 30% (2) 70%
(3) 20% (4) 50%

(SSC CAPFs SI, CISF ASI & Delhi Police SI Exam. 22.06.2014)

TF No. 999 KP0)

38. A retailer buys a sewing machine at a discount of 15% and sells it for ₹ 1955. Thus he makes a profit of 15%. The discount is

- (1) ₹ 270 (2) ₹ 290
(3) ₹ 300 (4) ₹ 310

(SSC CAPFs SI, CISF ASI & Delhi Police SI Exam. 22.06.2014 TF No. 999 KP0)

39. After allowing a discount of 10% on marked price a trader makes a profit of 15%. The ratio of the marked price to the cost price is

- (1) 23 : 9 (2) 23 : 10
(3) 23 : 18 (4) 23 : 19

(SSC CHSL (10+2) DEO & LDC Exam. 16.11.2014, 1st Sitting TF No. 333 LO 2)

40. Mr. x and Mr. y each bought the same motorcycle using a 10% off coupon. Mr. x's cashier took 10% off the price and then added 8.5% sales tax whereas Mr. y's cashier first added the sales tax and then took 10% off the total price. The amount Mr. x paid is

- (1) less by ₹ 550 as the amount Mr. y paid
(2) same as the amount Mr. y paid
(3) greater by ₹ 85 as the amount Mr. y paid
(4) greater by ₹ 850 as the amount Mr. y paid

(SSC CGL Tier-II Exam. 12.04.2015 TF No. 567 TL 9)

41. The price of an antique is reduced by 20% and then this price is again reduced by 10%. The total reduction of the price is

- (1) 25% (2) 30%
(3) 23% (4) 28%

(SSC CGL Tier-II Exam. 12.04.2015 TF No. 567 TL 9)

42. A builder purchases 25 windows at 25% off the total price of ₹ 1,20,000. If the builder receives an additional discount of ₹ 7500 for the purchase, then the cost of each window is

- (1) ₹ 3300 (2) ₹ 3100
(3) ₹ 3400 (4) ₹ 3200

(SSC CGL Tier-II Exam. 12.04.2015 TF No. 567 TL 9)

DISCOUNT

- 19 www.jkchrome.com
43. The list price of a book is Rs. 100. A dealer sells three such books for Rs. 274.50 after allowing discount at a certain rate. Find the rate of discount.
 (1) 8.16% (2) 8.5%
 (3) 8.34% (4) 8.33%
 (SSC CGL Tier-I Exam, 09.08.2015 (IInd Sitting) TF No. 4239378)
44. A dealer buys an article listed at Rs. 100 and gets successive discounts of 10% and 20%. He spends 10% of the cost price on transportation. At what price should he sell the article to earn a profit of 15%?
 (1) ₹ 90.80 (2) ₹ 92.00
 (3) ₹ 91.08 (4) ₹ 91.20
 (SSC CGL Tier-I Exam, 16.08.2015 (IInd Sitting) TF No. 2176783)
45. A company showroom gives a discount of 20% on the second grade shoes and a further discount of 15% on shareholder's coupon. The total discount, a coupon holder will get is
 (1) 32% (2) 36%
 (3) 35% (4) 38%
 (SSC CGL Tier-I Re-Exam, 30.08.2015)
46. Two blends of a commodity costing Rs. 35 and Rs. 40 per kg. respectively are mixed in the ratio 2 : 3 by weight. If one-fifth of the mixture is sold at Rs. 46 per kg and the remaining at the rate of Rs. 55 per kg. the profit percent is
 (1) 50 (2) 30
 (3) 40 (4) 20
 (SSC CGL Tier-II Exam, 25.10.2015, TF No. 1099685)
47. The total discount on Rs. 1860 due after a certain time at 5% is Rs. 60. Find the time after which it is due
 (1) 9 months (2) 8 months
 (3) 7 months (4) 10 months
 (SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 01.11.2015, IInd Sitting)
48. State electricity board gives 15% discount on electric bills if it is paid before due date. One person gets Rs. 54 as discount. The amount of actual bill was :
 (1) Rs. 362 (2) Rs. 359
 (3) Rs. 360 (4) Rs. 361
 (SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 15.11.2015 (1st Sitting) TF No. 6636838)
49. A house was sold for Rs. y by giving a discount of $x\%$, then the list price was :
 (1) $\frac{100y}{100-x}$ (2) $\frac{100y}{1-\frac{x}{100}}$
 (3) $\frac{100x}{100-y}$ (4) $\frac{100y}{1-x}$
 (SSC CHSL (10+2) LDC, DEO & PA/SA Exam, 06.12.2015 (IInd Sitting) TF No. 3441135)
50. A shopkeeper allows 20% discount on his advertised price and to make a profit of 25% on his outlay. What is the advertised price (in Rs.) on which he gains Rs. 6000 ?
 (1) 36000 (2) 37500
 (3) 39000 (4) 42500
 (SSC CGL Tier-II Online Exam, 01.12.2016)
51. Ramesh marks his goods 30% above cost price. If he sells the item for ₹ 910 after allowing a discount of 15%, find his cost price.
 (1) Rs. 823.5 (2) Rs. 758
 (3) Rs. 814.2 (4) Rs. 856.5
 (SSC CPO SI, ASI Online Exam, 05.06.2016 (IInd Sitting))
52. A shopkeeper used to allow a discount of Rs. 20 on a product. He doubles the discount on the product and sold it for Rs. 80. What was the percentage of discount offered ?
 (1) 20% (2) 25%
 (3) 30% (4) 33.33%
 (SSC CPO Exam, 06.06.2016 (1st Sitting))
53. The original price of a TV set is Rs. 6,000. If the price is discounted by 20% and then raised by 10% for service contract, the price charged by the shopkeeper is
 (1) Rs. 5400 (2) Rs. 5280
 (3) Rs. 5100 (4) Rs. 4200
 (SSC CGL Tier-I (CBE) Exam, 09.09.2016 (1st Sitting))
54. A sells a car priced at Rs. 36,000. He gives a discount of 8% on the first Rs. 20,000 and 5% on the remaining Rs. 16,000. B also sells a car of the same make, priced at Rs. 36,000. He gives a discount of 7% on the total price. Calculate the actual prices charged by A and B for the cars.
 (1) A = Rs. 33,500;
 B = Rs. 33,400
 (2) A = Rs. 33,480;
 B = Rs. 33,600
 (3) A = Rs. 33,450;
 B = Rs. 33,650
 (4) A = Rs. 33,600;
 B = Rs. 33,480
 (SSC CAPFs (CPO) SI & ASI, Delhi Police Exam, 20.03.2016 (IInd Sitting))
55. A cloth merchant has announced 25% rebate in prices. If one needs to have a rebate of Rs. 40, then how many metres of cloth costing Rs. 32 per metre he should purchase ?
 (1) 6 m (2) 5 m
 (3) 10 m (4) 7 m
 (SSC CGL Tier-I (CBE) Exam, 29.08.2016 (IInd Sitting))
56. An article marked at Rs. 540 is sold at Rs. 496.80 in an off-season offer. Then the rate of discount offered (in per cent) is
 (1) 7 (2) 7.5
 (3) 8 (4) 10
 (SSC CGL Tier-I (CBE) Exam, 30.08.2016 (1st Sitting))
57. A bookseller allowed 15% discount on the books sold. Sunil purchased books worth Rs. 1500. How much will he have to pay to the bookseller.
 (1) Rs. 1200 (2) Rs. 1250
 (3) Rs. 1275 (4) Rs. 1300
 (SSC CGL Tier-I (CBE) Exam, 03.09.2016 (IInd Sitting))
58. The list price of TV is Rs. 2300 and discount series is found to be 25% and 10%. Then the selling price of TV is
 (1) Rs. 1255.5 (2) Rs. 1525.5
 (3) Rs. 1552.5 (4) Rs. 1555.2
 (SSC CGL Tier-I (CBE) Exam, 30.08.2016 (IInd Sitting))
59. A watch is listed for Rs. 230 and is sold at a discount of 12%. The sale price of the watch is
 (1) Rs. 27.6 (2) Rs. 276
 (3) Rs. 202.4 (4) Rs. 257.6
 (SSC CGL Tier-I (CBE) Exam, 02.09.2016 (IInd Sitting))

DISCOUNT

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60. A dealer allows a discount of 15%. A customer pays an amount of Rs. 318.75 for an article. At what price is the article listed ?

- (1) Rs. 366.50 (2) Rs. 375.00
(3) Rs. 350.00 (4) Rs. 431.25

(SSC CGL Tier-I (CBE)

Exam. 08.09.2016 (IInd Sitting)

61. A fan is listed at Rs. 150 with a discount of 20%. What additional discount must be offered to the customer to bring the net price to Rs. 108 ?

- (1) $11\frac{1}{9}\%$ (2) 15%
(3) 8%
(4) None of these

(SSC CGL Tier-I (CBE)

Exam. 11.09.2016 (IInd Sitting)

62. A dealer marks a washing machine for Rs. 7500, and allows a discount of 6% on it. Find its selling price.

- (1) Rs. 6850 (2) Rs. 7050
(3) Rs. 7250 (4) Rs. 6950

(SSC CGL Tier-I (CBE)

Exam. 11.09.2016 (IIIrd Sitting)

63. A shopkeeper gives two successive discounts of 7% each on the marked price of Rs. 20,000 of an article. The selling price of the article is

- (1) Rs. 12,978 (2) Rs. 19,278
(3) Rs. 18,927 (4) Rs. 17,298

(SSC CGL Tier-I (CBE)

Exam. 27.10.2016 (Ist Sitting)

SHORT ANSWERS

TYPE-I

1. (2)	2. (4)	3. (3)	4. (2)
5. (3)	6. (3)	7. (3)	8. (1)
9. (2)	10. (3)	11. (3)	12. (2)
13. (3)	14. (3)	15. (3)	16. (4)
17. (3)	18. (2)	19. (3)	20. (4)
21. (4)	22. (2)	23. (3)	24. (1)
25. (1)	26. (4)	27. (3)	28. (1)
29. (2)	30. (3)	31. (3)	32. (2)
33. (2)	34. (2)	35. (3)	36. (2)
37. (4)	38. (1)	39. (4)	40. (3)
41. (3)	42. (2)	43. (4)	44. (2)
45. (3)	46. (1)	47. (4)	48. (1)

49. (1)	50. (4)	51. (2)	52. (1)
53. (1)	54. (2)	55. (3)	56. (1)
57. (1)	58. (2)	59. (2)	60. (3)
61. (1)	62. (1)	63. (3)	64. (1)
65. (3)	66. (3)	67. (3)	68. (1)
69. (1)	70. (4)	71. (4)	72. (4)
73. (3)	74. (1)	75. (3)	76. (4)
77. (2)	78. (4)	79. (3)	80. (1)
81. (3)	82. (2)	83. (2)	84. (3)
85. (1)	86. (1)	87. (2)	88. (4)
89. (1)	90. (4)	91. (3)	92. (4)
93. (1)			

TYPE-II

1. (2)	2. (2)	3. (3)	4. (4)
5. (2)	6. (4)	7. (2)	8. (1)
9. (1)	10. (4)	11. (3)	12. (4)
13. (2)	14. (2)	15. (4)	16. (4)
17. (2)	18. (3)	19. (3)	20. (1)
21. (3)	22. (4)	23. (1)	24. (4)
25. (3)	26. (3)	27. (4)	28. (2)
29. (2)	30. (2)	31. (1)	32. (4)
33. (3)	34. (4)	35. (1)	36. (4)
37. (3)	38. (4)	39. (2)	40. (4)
41. (1)	42. (1)	43. (4)	44. (3)
45. (2)	46. (1)	47. (3)	48. (4)
49. (4)	50. (1)	51. (3)	52. (3)
53. (2)	54. (2)	55. (2)	56. (2)
57. (2)	58. (1)	59. (1)	60. (3)
61. (2)	62. (3)	63. (2)	64. (1)
65. (3)	66. (2)	67. (1)	68. (4)
69. (3)	70. (2)	71. (3)	

TYPE-III

1. (4)	2. (4)	3. (2)	4. (2)
5. (1)	6. (2)	7. (2)	8. (2)
9. (4)	10. (2)	11. (3)	12. (1)
13. (4)	14. (1)	15. (3)	16. (1)
17. (1)	18. (4)	19. (2)	20. (2)
21. (3)	22. (1)	23. (1)	24. (3)
25. (1)	26. (1)	27. (3)	28. (3)

29. (4)	30. (2)	31. (4)	32. (3)
33. (3)	34. (2)	35. (2)	36. (1)
37. (2)	38. (3)	39. (3)	40. (1)
41. (4)	42. (3)		

TYPE-IV

1. (3)	2. (3)	3. (2)	4. (1)
5. (3)	6. (4)	7. (1)	8. (4)
9. (3)	10. (3)	11. (1)	12. (1)
13. (3)	14. (1)	15. (4)	16. (1)
17. (1)	18. (2)	19. (1)	20. (1)
21. (3)	22. (3)	23. (3)	24. (1)
25. (1)	26. (3)	27. (4)	28. (2)
29. (1)	30. (3)	31. (1)	32. (1)
33. (3)	34. (3)	35. (3)	36. (3)
37. (4)	38. (2)	39. (3)	40. (3)
41. (2)	42. (4)	43. (2)	44. (2)
45. (4)	46. (3)	47. (2)	48. (2)
49. (3)	50. (2)	51. (2)	52. (3)
53. (3)	54. (2)	55. (3)	56. (3)
57. (4)	58. (1)	59. (3)	60. (2)
61. (3)	62. (1)	63. (2)	64. (3)
65. (2)	66. (3)	67. (4)	

TYPE-V

1. (4)	2. (3)	3. (2)	4. (1)
5. (1)	6. (4)	7. (2)	8. (3)
9. (3)	10. (1)	11. (3)	12. (2)
13. (3)	14. (4)	15. (3)	16. (4)
17. (3)	18. (4)	19. (4)	20. (3)
21. (1)	22. (2)	23. (2)	24. (2)
25. (1)	26. (1)	27. (4)	28. (1)
29. (3)	30. (*)	31. (3)	32. (1)
33. (1)	34. (2)	35. (4)	36. (4)
37. (3)	38. (3)	39. (3)	40. (2)
41. (4)	42. (1)	43. (2)	44. (3)
45. (1)	46. (3)	47. (2)	48. (3)
49. (1)	50. (2)	51. (1)	52. (4)
53. (2)	54. (4)	55. (2)	56. (3)
57. (3)	58. (3)	59. (3)	60. (2)
61. (4)	62. (2)	63. (4)	

EXPLANATIONS

TYPE-I

1. (2) Using Rule 5,
Successive discounts of 36% and 4% is overall equals to

$$= \left(36 + 4 - \frac{36 \times 4}{100} \right) \%$$

$$= 38.56\%$$

$$\therefore \text{Percentage difference} = 40 - 38.56$$

$$= 1.44\%$$

Difference between discount
= 1.44% of 100000

$$= \frac{1.44 \times 100000}{100} = ₹ 1440$$

2. (4) Using Rule 5,
Equivalent discount

$$= 30 + 10 - \frac{30 \times 10}{100} = 37\%$$

3. (3) Marked price = ₹ 720

Actual price = ₹ 550.80

First discount = 10%

Let the second discount be $x\%$

Then, we can write

$$720(1 - 0.10)(1 - 0.01x)$$

$$= 550.80$$

$$\Rightarrow 720 \times 0.9(1 - 0.01x) = 550.8$$

$$\Rightarrow 648(1 - 0.01x) = 550.8$$

$$\Rightarrow 1 - 0.01x = \frac{550.8}{648}$$

$$0.01x = 1 - \frac{550.8}{648}$$

$$x = \frac{1 - 0.85}{0.01}$$

$$x = 0.15 \times 100$$

$$x = 15$$

$$\therefore \text{Second discount} = 15\%$$

4. (2) Price after 10% first discount

$$= 1000 \times \frac{100 - 10}{100}$$

$$= 1000 \times \frac{90}{100} = ₹ 900$$

Given :

Price after second discount

$$= ₹ 810$$

\therefore Second discount

$$= 900 - 810 = ₹ 90$$

\therefore Percentage of second discount

$$= \frac{90 \times 100}{900} = 10\%$$

5. (3) Using Rule 5,
Successive discounts of $x\%$ and $y\%$

$$= \left(x + y - \frac{x \times y}{100} \right) \%$$

\therefore Required discount

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= 30 - 2 = 28\%$$

6. (3) Trick :

Equivalent discount

$$= \left(15 + 10 - \frac{15 \times 10}{100} \right) \% = 23.5\%$$

7. (3) Equivalent discount of
successive discounts of 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \% = 28\%$$

\therefore Selling Price = $(100 - 28) \%$
of ₹ 500 = 72 % of 500

$$= ₹ \frac{500 \times 72}{100} = ₹ 360$$

Aliter : Using Rule 3,

M.P. = Rs. 500

$$D_1 = 20\%$$

$$D_2 = 10\%$$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$= 500 \left(\frac{100 - 20}{100} \right) \left(\frac{100 - 10}{100} \right)$$

$$= 500 \times \frac{80}{100} \times \frac{90}{100} = \text{Rs. } 360$$

8. (1) A single discount equal to the
two successive discounts

$$= \left(10 + 5 - \frac{10 \times 5}{100} \right) \% = 14.5\%$$

\therefore Selling price of the article

= 85.5% of ₹ 240

$$= ₹ \frac{85.5 \times 240}{100} = ₹ 205.20$$

Aliter : Using Rule 3,

Here, M.P. = Rs. 240,

$$D_1 = 10\%, D_2 = 5\%$$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$= 240 \left(\frac{100 - 10}{100} \right) \left(\frac{100 - 5}{100} \right)$$

$$= 240 \times \frac{90}{100} \times \frac{95}{100}$$

$$= \text{Rs. } 205.20$$

9. (2) Using Rule 5,

Let the original price be ₹ 100

\therefore Increased price = ₹ 130

Equivalent discount

$$= \left(10 + 10 - \frac{10 \times 10}{100} \right) = 19\%$$

\therefore Ultimate price of the article =
81% of 130 = 105.3 i.e. increase
by 5.3%.

10. (3) Single of discount for
successive discounts 10% and 20%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \% = 28\%$$

\therefore Equivalent discount for
discounts 28% and 25%

$$= \left(28 + 25 - \frac{28 \times 25}{100} \right) \%$$

$$= 53 - 7 = 46\%$$

Aliter : Using Rule 4,

Single equivalent discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 10}{100} \right) \left(\frac{100 - 20}{100} \right) \left(\frac{100 - 25}{100} \right) \times 100 \right]$$

$$= 100 - \frac{90}{100} \times \frac{80}{100} \times \frac{75}{100} \times 100$$

$$= 100 - 54 = 46\%$$

11. (3) Equivalent discount for
successive discounts of 20% and 10%

$$= \left[20 + 10 - \frac{20 \times 10}{100} \right] \%$$

$$= 28\%$$

\therefore Net selling price = 72% of 2000

$$= ₹ \frac{72 \times 2000}{100} = ₹ 1440$$

Aliter : Using Rule 3,

Here, M.P. = ₹ 2000,

$$D_1 = 20\%, D_2 = 10\%$$

$$\text{S.P.} = \text{M.P.} \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \right]$$

$$= \left[2000 \times \left(\frac{100 - 20}{100} \right) \times \left(\frac{100 - 10}{100} \right) \right]$$

$$= 2000 \times \frac{80 \times 90}{10000} = ₹ 1440$$

DISCOUNT

12. (2) Using Rule 5,
Case I : A single discount of 30%
Case II : Two successive discounts of 20% and 10%
Single equivalent discount

$$= (20 + 10 - \frac{20 \times 10}{100}) \% = 28\%$$

$$\text{Difference} = (30 - 28)\% = 2\%$$

$$\therefore \text{Required difference} = 2\% \text{ of } 550$$

$$= ₹ \frac{2 \times 550}{100} = ₹ 11.$$

13. (3) Let the second discount be $x\%$.
Then, 90 % of $(100 - x)$ % of 800 = 612

$$\Rightarrow \frac{90}{100} \times \frac{100 - x}{100} \times 800 = 612$$

$$\Rightarrow 100 - x = \frac{612 \times 100}{90 \times 8} = 85$$

$$\Rightarrow x = 100 - 85 = 15\%$$

Aliter : Using Rule 3,

Here, M.P. = Rs. 800, S.P. = Rs. 612, $D_1 = 10\%$, $D_2 = ?$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$612 = 800 \times \left(\frac{100 - 10}{100} \right) \times \left(\frac{100 - D_2}{100} \right)$$

$$612 = 800 \times \frac{90}{100} \times \frac{100 - D_2}{100}$$

$$\frac{6120}{72} = 100 - D_2$$

$$D_2 = \frac{100 - 6120}{72}$$

$$= \frac{7200 - 6120}{72} = 15\%$$

14. (3) Let 'x' be the marked price
Single Discount = 15%

$$\Rightarrow 100 - 15 = 85$$

$$85\% \text{ of } x = 17,000$$

$$\therefore x = \frac{17,000}{85} \times 100$$

$$= ₹ 20,000$$

Required SP

$$= 20,000 \times \frac{95}{100} \times \frac{90}{100}$$

$$= 180 \times 95 = ₹ 17100$$

Aliter : Using Rule 2 and Rule 3,

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

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$$= \frac{17000 \times 100}{100 - 15}$$

$$= \frac{17000 \times 100}{85}$$

$$\text{M.P.} = 20000$$

Also, S.P.

$$= \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$= 20000 \left(\frac{100 - 5}{100} \right) \left(\frac{100 - 10}{100} \right)$$

$$= 20000 \times \frac{95}{100} \times \frac{90}{100}$$

$$= 180 \times 95 = ₹ 17100$$

15. (3) Marked price = ₹ 160

After 10% discount

$$\text{S.P.} = \frac{90}{100} \times 160 = ₹ 144$$

Let other discount = $x\%$

$$\therefore \frac{(100 - x)}{100} \times 144 = ₹ 122.40$$

$$\Rightarrow 100 - x = \frac{12240}{144}$$

$$\Rightarrow 100 - x = 85$$

$$\Rightarrow x = 100 - 85 = 15\%$$

Aliter : Using Rule 3,

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$122.40 = 160 \left(\frac{100 - 10}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$\frac{1224000}{160} = 90 \times \left(\frac{100 - D_2}{100} \right)$$

$$\frac{1224000}{160 \times 90} = 100 - D_2$$

$$85 = 100 - D_2$$

$$\Rightarrow D_2 = 15\%$$

16. (4) Let the second discount be x per cent.

According to the question,

$$450 \times \frac{100 - 10}{100} \times \frac{100 - x}{100}$$

$$= 344.25$$

$$\therefore 100 - x$$

$$= \frac{344.25 \times 100 \times 100}{450 \times 90}$$

$$\therefore 100 - x = 85$$

$$\therefore x = 100 - 85 = 15\%.$$

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Aliter : Using Rule 3,

Here, M.P. = Rs. 450, S.P.

= Rs. 344.25, $D_1 = 10\%$, $D_2 = ?$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$344.25 = 450 \times \left(\frac{100 - 10}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$\frac{3442500}{450 \times 90} = (100 - D_2)$$

$$85 = 100 - D_2$$

$$\Rightarrow D_2 = 15\%$$

17. (3) Using Rule 5,

(i) : Equivalent discount

$$= \left(25 + 15 - \frac{25 \times 15}{100} \right) \%$$

$$= (40 - 3.75) \% = 36.25\%$$

(ii) : Equivalent discount

$$= \left(30 + 10 - \frac{30 \times 10}{100} \right) \%$$

$$= (40 - 3) \% = 37\%$$

(iii) : Equivalent discount

$$= \left(35 + 5 - \frac{35 \times 5}{100} \right) \%$$

$$= (40 - 1.75) \% = 38.25\%$$

Clearly, third offer is best for a customer.

18. (2) Using Rule 5,

Equivalent discount for two successive discounts of 8% and 8%

$$= \left(8 + 8 - \frac{8 \times 8}{100} \right) \%$$

$$= (16 - 0.64) \% = 15.36 \%$$

$$\therefore \text{SP} = (100 - 15.36) \% \text{ of } 900$$

$$= ₹ \left(\frac{84.64 \times 900}{100} \right) = ₹ 761.76$$

For a single discount of 16%,

SP = 84% of 900

$$= ₹ \left(\frac{84 \times 900}{100} \right) = ₹ 756$$

Certainly seller will lose in this case.

$$\therefore \text{Loss} = ₹ (761.76 - 756)$$

$$= ₹ 5.76$$

19. (3) Equivalent discount

$$= 10 + 5 - \frac{10 \times 5}{100} = 14.5 \%$$

\therefore CP (for buyer)

= 85.5% of ₹ 200000

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$$= ₹ \left(\frac{85.5 \times 200000}{100} \right) = ₹ 171000$$

SP = ₹ 179550

Gain = ₹ (179550 - 171000)

= ₹ 8550

∴ Gain %

$$= \frac{8550}{171000} \times 100 = 5\%$$

Aliter : Using Rule 3,

Here, M.P. = 200000, S.P. is C.P. byer for

$D_1 = 5\%$,

$D_2 = 10\%$

$$S.P. = M.P. \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$= 200000 \left(\frac{100 - 5}{100} \right) \left(\frac{100 - 10}{100} \right)$$

$$= 20 \times 95 \times 90$$

C.P. for buyer = 171000

S.P. = 179550

$$\text{Profit} = S.P. - \frac{C.P.}{C.P.} \times 100\%$$

$$= \frac{8550}{171000} \times 100 = 5\%$$

20. (4) Using Rule 5,
Effective discount

$$= 25 + 15 - \frac{25 \times 15}{100}$$

$$= 40 - 3.75 = 36.25 \%$$

∴ CP for buyer

$$= (100 - 36.25) \% \text{ of } 800$$

$$= \frac{63.75 \times 800}{100} = ₹ 510$$

∴ To gain 20%,

$$SP = ₹ \left(\frac{120 \times 510}{100} \right) = ₹ 612$$

Let the list price be ₹ x .

∴ 90% of $x = ₹ 612$

$$\Rightarrow \frac{90x}{100} = 612 \Rightarrow x = \frac{61200}{90}$$

$$= ₹ 680$$

21. (4) Using Rule 5,

Single equivalent discount of two successive discounts of 36% and

$$4\% = 36 + 4 - \frac{36 \times 4}{100}$$

$$= 40 - 1.44 = 38.56$$

Percentage difference

$$= 40 - 38.56 = 1.44$$

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∴ Required difference

$$= 500 \times \frac{1.44}{100} = ₹ 7.20$$

22. (2) Total discount

$$= ₹ (920 - 742.90)$$

$$= ₹ 177.10$$

First discount = 15%

∴ Discount = 15% of 920

$$= \frac{920 \times 15}{100} = ₹ 138$$

Price after this discount

$$= 920 - 138 = ₹ 782$$

Remaining discount

$$= 177.10 - 138 = ₹ 39.10$$

Let the second discount be $x\%$.

$$\therefore \frac{782 \times x}{100} = 39.10$$

$$\Rightarrow x = \frac{39.10 \times 100}{782} = 5\%$$

Aliter : Using Rule 3,

Here, M.P. = Rs. 920, S.P. = Rs. 742.90

$D_1 = 15\%$, $D_2 = ?$

$$S.P. = M.P. \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$742.90$$

$$= 920 \left(\frac{100 - 15}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$\frac{7429000}{920 \times 85} = 100 - D_2$$

$$95 = 100 - D_2$$

$$\Rightarrow D_2 = 5\%$$

23. (3) Total discount

$$= ₹ (820 - 570.72) = ₹ 249.28$$

$$\text{First discount} = 820 \times \frac{20}{100} = ₹ 164$$

∴ Second discount

$$= ₹ (249.28 - 164) = ₹ 85.28$$

Price of the article after first discount = ₹ (820 - 164) = ₹ 656

If the second discount be $x\%$, then

$$x\% \text{ of } 656 = 85.28$$

$$\Rightarrow x = \frac{85.28 \times 100}{656} = 13\%$$

Aliter : Using Rule 3,

Here, M.P. = Rs. 820, S.P. = 570.72, $D_1 = 20\%$, $D_2 = ?$

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$$S.P. = M.P. \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$570.72 = 820 \left(\frac{100 - 20}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$\frac{5707200}{820 \times 80} = 100 - D_2$$

$$100 - D_2 = 87$$

$$D_2 = 13\%$$

24. (1) Using Rule 5,

Single equivalent discount for two successive discounts of 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \% = 28\%$$

Now, single discount for 28% and

$$5\% = \left(28 + 5 - \frac{28 \times 5}{100} \right) \%$$

$$= (33 - 1.4) \% = 31.6\%$$

∴ Required selling price of bicycle at cash payment

$$= (100 - 31.6) \% \text{ of } ₹ 2000$$

$$= \frac{2000 \times 68.4}{100} = ₹ 1368$$

25. (1) Using Rule 5,

Single equivalent discount of two consecutive discount of 30% and 10%

$$= 30 + 10 - \frac{30 \times 10}{100} = 37\%$$

∴ Required difference = 40% of 500 - 37% of 500

$$= 3\% \text{ of } 500$$

$$= 500 \times \frac{3}{100} = ₹ 15$$

26. (4) After a discount of 5%

$$SP = \frac{95 \times 16000}{100} = ₹ 15200$$

Let the second discount be $x\%$.

∴ $x\%$ of 15200

$$= (15200 - 11400)$$

$$\Rightarrow \frac{x \times 15200}{100} = 3800$$

$$\Rightarrow x = \frac{3800 \times 100}{15200} = 25$$

∴ Second discount = 25%

Aliter : Using Rule 3,

Here, M.P. = 16000,

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$$\text{S.P.} = 11400, D_1 = 5\%, D_2 = ?$$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$11400 = 16000 \left(\frac{100 - 5}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$\frac{114000}{16 \times 95} = 100 - D_2$$

$$75 = 100 - D_2$$

$$D_2 = 25\%$$

27. (3) Using Rule 5,
Case I,

$$\text{Discount} = \frac{30 \times 2000}{100} = ₹ 600$$

Single equivalent discount for discounts of 25% and 5%.

$$= \left(25 + 5 - \frac{25 \times 5}{100} \right) \%$$

$$= (30 - 1.25)\% = 28.75\%$$

$$\therefore \text{Discount} = \frac{28.75 \times 2000}{100}$$

$$= ₹ 575$$

$$\therefore \text{Difference} = ₹ (600 - 575)$$

$$= ₹ 25$$

28. (1) Using Rule 5,

Let the marked price be ₹ x .

$$\therefore \text{In case I, SP} = ₹ \frac{70x}{100}$$

Single discount equivalent to successive discounts of 20% and 10%.

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \% = 28\%$$

$$\therefore \text{S.P. in this case} = \frac{72x}{100}$$

$$\therefore \frac{72x}{100} - \frac{70x}{100} = 72$$

$$\Rightarrow \frac{2x}{100} = 72$$

$$\therefore x = \frac{72 \times 100}{2} = ₹ 3600$$

29. (2) Using Rule 5,

Single equivalent discount for successive discounts of 10% and 20%.

$$= \left(10 + 20 - \frac{20 \times 10}{100} \right) \% = 28\%$$

Single equivalent discount for 28% and 30%.

$$= \left(28 + 30 - \frac{28 \times 30}{100} \right) \% = 49.6\%$$

30. (3) Using Rule 5,

Equivalent single discount

$$= \left(20 + 20 - \frac{20 \times 20}{100} \right) \% = 36\%$$

31. (3) Using Rule 5,

Single equivalent discount

$$= \left(10 + 5 - \frac{10 \times 5}{100} \right) \%$$

$$= (15 - 0.5)\% = 14.5\%$$

32. (2) Using Rule 5,

Single equivalent discount

$$= \left(x + y - \frac{xy}{100} \right) \%$$

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) \% = 32\%$$

33. (2) Single equivalent discount for 10% and 12%.

$$= \left(12 + 10 - \frac{12 \times 10}{100} \right) \% = 20.8\%$$

Single equivalent discount for 20.8% and 5%.

$$= \left(20.8 + 5 - \frac{20.8 \times 5}{100} \right) \%$$

$$= 24.76\%$$

Aliter : Using Rule 4,

Here, $D_1 = 10\%$, $D_2 = 12\%$,

$D_3 = 5\%$

Single equivalent discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 10}{100} \right) \left(\frac{100 - 12}{100} \right) \left(\frac{100 - 5}{100} \right) \times 100 \right]$$

$$= 100 - \frac{90}{100} \times \frac{88}{100} \times \frac{95}{100} \times 100$$

$$= 100 - 75.24 = 24.76\%$$

34. (2) Using Rule 5 and Rule 2,
Single equivalent discount

$$= \left(5 + 10 - \frac{10 \times 5}{100} \right) \% = 14.5\%$$

\therefore Cost of article after discount

$$= \frac{850 \times (100 - 14.5)}{100} = ₹ 726.75$$

35. (3) Using Rule 5,

Single equivalent discount

$$= \left(15 + 10 - \frac{15 \times 10}{100} \right) = 23.5\%$$

$$\therefore \text{Cost price} = \frac{800 \times 76.5}{100}$$

$$= ₹ 612$$

$$\text{Actual C.P.} = ₹ (612 + 28)$$

$$= ₹ 640$$

$$\therefore \text{Gain \%} = \frac{800 - 640}{640} \times 100$$

$$= \frac{160 \times 100}{640} = 25\%$$

36. (2) Single equivalent discount for 10% and 20%

$$= 10 + 20 - \frac{20 \times 10}{100} = 28\%$$

Single equivalent discount for 28% and 40%

$$= \left(40 + 28 - \frac{28 \times 40}{100} \right) \%$$

$$= (68 - 11.2)\% = 56.8\%$$

Aliter : Using Rule 4,

Here, $D_1 = 10\%$, $D_2 = 20\%$, $D_3 = 40\%$

Single discount

Single discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 10}{100} \right) \times \left(\frac{100 - 20}{100} \right) \times \left(\frac{100 - 40}{100} \right) \times 100 \right]$$

$$= 100 - \frac{90}{100} \times \frac{80}{100} \times \frac{60}{100} \times 100$$

$$= 100 - 43.20 = 56.8\%$$

37. (4) Using Rule 5,

Single equivalent discount

$$= \left(25 + 10 - \frac{25 \times 10}{100} \right) \%$$

$$= 32.5\%$$

38. (1) Using Rule 5,

Equivalent single discount

$$= \left(x + y - \frac{xy}{100} \right) \%$$

$$= \left(20 + 5 - \frac{20 \times 5}{100} \right) \%$$

$$= (25 - 1)\% = 24\%$$

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39. (4) Using Rule 5,

Single equivalent discount of two successive discounts of 20% each

$$= \left(20 + 20 - \frac{20 \times 20}{100} \right) \%$$

$$= 36\%$$

If the amount of the bill be x , then

$$\therefore (36 - 35)\% \text{ of } x = 22$$

$$\Rightarrow \frac{x}{100} = 22 \Rightarrow x = ₹ 2200$$

40. (3) S.P. after first discount

$$= \frac{1600 \times 90}{100} = ₹ 1440$$

\therefore Second discount

$$= 1440 - 1224 = ₹ 216$$

$$\therefore \frac{1440 \times x}{100} = 216$$

$$\therefore x = \frac{216 \times 100}{1440} = 15\%$$

41. (3) Single equivalent discount for 20% and 20%

$$= \left(20 + 20 - \frac{20 \times 20}{100} \right) \% = 36\%$$

Single equivalent discount for 36% and 10%

$$= \left(36 + 10 - \frac{36 \times 10}{100} \right) \% = 42.4\%$$

Aliter : Using Rule 4,

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 20}{100} \right) \times \left(\frac{100 - 20}{100} \right) \times \left(\frac{100 - 10}{100} \right) \times 100 \right]$$

$$= 100 - \frac{80}{100} \times \frac{80}{100} \times \frac{90}{100} \times 100$$

$$= 100 - 57.60 = 42.40$$

42. (2) Using Rule 5,

Single equivalent discount

$$= \left(10 + 10 - \frac{10 \times 10}{100} \right) \% = 19\%$$

43. (4) Single equivalent discount for 20% and 15%

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) \% = 32\%$$

Single equivalent discount for 32% and 10%

$$= \left(32 + 10 - \frac{32 \times 10}{100} \right) \% = 38.8\%$$

Aliter : Using Rule 4,

Here, $D_1 = 20\%$, $D_2 = 15\%$,

$$D_3 = 10\%$$

Single equivalent discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 20}{100} \right) \left(\frac{100 - 15}{100} \right) \left(\frac{100 - 10}{100} \right) \times 100 \right]$$

$$= 100 - \frac{80}{100} \times \frac{85}{100} \times \frac{90}{100} \times 100$$

$$= 100 - 61.20 = 38.80\%$$

44. (2) Single equivalent discount for 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \% = 28\%$$

Single equivalent discount for 28% and 5%

$$= \left(28 + 5 - \frac{28 \times 5}{100} \right) \% = 31.6\%$$

Aliter : Using Rule 4,

Here, $D_1 = 20\%$, $D_2 = 10\%$,

$$D_3 = 5\%$$

Single equivalent discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 20}{100} \right) \left(\frac{100 - 10}{100} \right) \left(\frac{100 - 5}{100} \right) \times 100 \right]$$

$$= 100 - \frac{80}{100} \times \frac{90}{100} \times \frac{95}{100} \times 100$$

$$= 100 - 68.40 = 31.60\%$$

45. (3) Single equivalent discount

$$= \left(p + q - \frac{pq}{100} \right) \%$$

46. (1) Single equivalent discount

$$= \left(25 + 10 - \frac{25 \times 10}{100} \right) = 32.5\%$$

\therefore S.P. of chair

$$= \frac{350(100 - 32.5)}{100}$$

$$= \frac{350 \times 67.5}{100} = ₹ 236.25$$

Aliter : Using Rule 3,

Here, M.P. = ₹ 350,

$$D_1 = 25\%, D_2 = 10\%$$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

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$$= 350 \times \left(\frac{100 - 25}{100} \right) \left(\frac{100 - 10}{100} \right)$$

$$= 350 \times \frac{75}{100} \times \frac{90}{100} = ₹ 236.25$$

47. (4) Single equivalent discount

$$= \left(30 + 15 - \frac{30 \times 15}{100} \right) \% = 40.5\%$$

If the marked price be x , then

$$x \times \frac{100 - 40.5}{100} = 476$$

$$\Rightarrow x = \frac{476 \times 100}{59.5} = ₹ 800$$

Aliter :

Here, S.P. = Rs. 476, $D_1 = 30\%$, $D_2 = 15\%$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$476 = \text{M.P.} \left(\frac{100 - 30}{100} \right) \left(\frac{100 - 15}{100} \right)$$

$$\text{M.P.} = \frac{4760000}{70 \times 85}$$

$$\text{M.P.} = ₹ 800$$

48. (1) Using Rule 5,

Single equivalent discount

$$= \left(25 + 5 - \frac{25 \times 5}{100} \right) \%$$

$$= (30 - 1.25)\% = 28.75\%$$

49. (1) Using Rule 5,

C.P. of the table

$$= 800 \times \frac{90}{100} \times \frac{85}{100} = ₹ 612$$

$$\text{Actual C.P.} = 612 + 13 = ₹ 625$$

$$\text{Profit} = 875 - 625 = ₹ 250$$

\therefore Profit per cent

$$= \frac{250}{625} \times 100 = 40\%$$

50. (4) Using Rule 5,

Single equivalent discount

$$= \left(30 + 30 - \frac{30 \times 30}{100} \right) \% = 51\%$$

51. (2) Using Rule 5,

Single equivalent discount

$$= \left(25 + 15 - \frac{25 \times 15}{100} \right)$$

$$= 40 - 3.75 = 36.25$$

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$$\begin{aligned} \therefore \text{C.P. for the retailer} \\ &= \frac{800 \times (100 - 36.25)}{100} = ₹ 510 \end{aligned}$$

52. (1) First discount

$$= 320 \times \frac{10}{100} = ₹ 32$$

\therefore Price after first discount

$$= 320 - 32 = ₹ 288$$

If the second discount be $x\%$, then

$$\therefore \frac{288 \times x}{100} = 288 - 244.80$$

$$= 43.2$$

$$\Rightarrow x = \frac{43.2 \times 100}{288} = 15\%$$

Aliter : Using Rule 3,

Here, M.P. = Rs. 320, S.P. = Rs. 244.80, $D_1 = 10\%$, $D_2 = ?$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$244.80 = 320 \left(\frac{100 - 10}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$\frac{2448000}{320 \times 90} = 100 - D_2$$

$$100 - D_2 = 85$$

$$D_2 = 100 - 85$$

$$D_2 = 15\%$$

53. (1) Using Rule 5,

Single equivalent discount for 40% and 10%

$$= \left(40 + 10 - \frac{40 \times 10}{100} \right) \% = 46\%$$

Difference of percentage = 4%

\therefore Savings = 4% of 10000

$$= \frac{10000 \times 4}{100} = ₹ 400$$

54. (2) Using Rule 5,

Single equivalent discount

$$= \left(70 + 30 - \frac{70 \times 30}{100} \right) \%$$

$$= (100 - 21)\% = 79\%$$

After a discount of 70%, remaining price is just 30. On this 30%, another discount of 30% is given which will be equal to 9 so, total discount = 70% + 9% = 79%.

55. (3) Using Rule 5,

C.P. for A

$$= 3000 \times \frac{90}{100} \times \frac{85}{100} = ₹ 2295$$

Actual C.P. = 2295 + 105

$$= ₹ 2400$$

$$\therefore \text{Gain per cent} = \frac{800}{2400} \times 100$$

$$= \frac{100}{3} = 33\frac{1}{3}\%$$

56. (1) Using Rule 5,

Single equivalent discount

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) = 28\%$$

$$\therefore \text{C.P. of table} = \frac{1500 \times 72}{100}$$

$$= ₹ 1080$$

Actual C.P. = 1080 + 20 = ₹ 1100

\therefore Required S.P.

$$= 1100 \times \frac{120}{100} = ₹ 1320$$

57. (1) Single equivalent discount

$$= \left(5 + 5 - \frac{25}{100} \right) \%$$

$$= 9\frac{3}{4} = \frac{39}{4}\%$$

$$\therefore \text{S.P.} = 80 \times \frac{361}{400} = ₹ 72.2$$

Aliter : Using Rule 3,

Here, M.P. = ₹ 80, $D_1 = 5\%$,

$D_2 = 5\%$, S.P. = ?

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$\text{S.P.} = 80 \left(\frac{100 - 5}{100} \right) \left(\frac{100 - 5}{100} \right)$$

$$= 80 \times \frac{95}{100} \times \frac{95}{100} = ₹ 72.2$$

58. (2) (a) Single equivalent discount for 20% and 15%

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) \% = 32\%$$

Single equivalent discount for 32% and 10%

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$$= \left(32 + 10 - \frac{32 \times 10}{100} \right) = 38.8\%$$

(b) Single equivalent discount for 25% and 12%

$$= \left(25 + 12 - \frac{25 \times 12}{100} \right) = 34\%$$

Single equivalent discount for 34% and 8%

$$= \left(34 + 8 - \frac{34 \times 8}{100} \right) \%$$

$$= 42 - 2.72 = 39.28\%$$

Aliter : Using Rule 4,

Case I. $D_1 = 20\%$,

$D_2 = 15\%$, $D_3 = 10\%$

Equivalent discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 20}{100} \right) \left(\frac{100 - 15}{100} \right) \left(\frac{100 - 10}{100} \right) \times 100 \right]$$

$$= 100 - \left[\frac{80}{100} \times \frac{85}{100} \times \frac{90}{100} \times 100 \right]$$

$$= 100 - 61.2 = 38.8\%$$

Case II.

$D_1 = 25\%$, $D_2 = 12\%$, $D_3 = 8\%$

Equivalent discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 25}{100} \right) \times \left(\frac{100 - 12}{100} \right) \times \left(\frac{100 - 8}{100} \right) \times 100 \right]$$

$$= 100 - \left[\frac{75}{100} \times \frac{88}{100} \times \frac{92}{100} \times 100 \right]$$

$$= 100 - 60.72 = 39.28\%$$

\Rightarrow Case II is better than Case I.

59. (2) Using Rule 5,

Single equivalent discount

$$= \left(10 + 5 - \frac{10 \times 5}{100} \right) = 14.5\%$$

i.e. ₹ 14.50

60. (3) Using Rule 3,

Required S.P.

$$= 5000 \times \frac{(100 - x)}{100} \times \frac{(100 - y)}{100} \times \frac{(100 - z)}{100}$$

$$= ₹ \left(\frac{(100 - x)(100 - y)(100 - z)}{200} \right)$$

61. (1) C.P. of chair

$$= \left(600 - \frac{600 \times 15}{100} \right) \times \frac{80}{100}$$

$$= \frac{510 \times 80}{100} = ₹ 408$$

Actual C.P. = 408 + 28 = ₹ 436

Gain percent

$$= \frac{545 - 436}{436} \times 100 = 25\%$$

62. (1) Single equivalent discount for 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) = 28\%$$

Single equivalent discount for 28% and 10%

$$= \left(28 + 10 - \frac{28 \times 10}{100} \right) = 35.2\%$$

∴ S.P. of Piano

$$= \frac{15000 \times (100 - 35.2)}{100}$$

$$= ₹ 9,720$$

Alter : Using Rule 3,

Here, M.P. = ₹ 15000

S.P. = ?

$D_1 = 20\%$, $D_2 = 10\%$, $D_3 = 10\%$

S.P. =

$$\text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right)$$

$$= 15000 \left(\frac{100 - 20}{100} \right) \left(\frac{100 - 10}{100} \right) \left(\frac{100 - 10}{100} \right)$$

$$= 15000 \times \frac{80}{100} \times \frac{90}{100} \times \frac{90}{100}$$

$$= 15 \times 72 \times 9 = ₹ 9720$$

63. (3) Using Rule 5,
Single equivalent discount

$$= \left(30 + 20 - \frac{30 \times 20}{100} \right) \%$$

$$= 50 - 6 = 44\%$$

64. (1) Using Rule 5,
Single equivalent discount

$$= \left(10 + 5 - \frac{10 \times 5}{100} \right) \%$$

$$= 14.5 \%$$

∴ Amount to be paid

$$= (100 - 14.5\%) \text{ of } 110$$

$$= \frac{110 \times 85.5}{100} = ₹ 94.05$$

$$\approx ₹ 94$$

65. (3) Single equivalent discount for two successive discounts

$$= (x + y - \frac{xy}{100}) \%$$

$$= \left(\frac{25}{2} + 10 - \frac{25 \times 10}{200} \right) \%$$

$$= (12.5 + 10 - 1.25) \%$$

$$= 21.25 \%$$

If the marked price of the plate be ₹ x , then

$$= (100 - 21.25) \% \text{ of } x = 6300$$

$$\Rightarrow x \times \frac{78.75}{100} = 6300$$

$$\Rightarrow x = \frac{6300 \times 100}{78.75} = ₹ 8000$$

Alter : Using Rule 3,

Here, S.P. = ₹ 6300, M.P. = ?

$$D_1 = \frac{25}{2} \%, D_2 = 10\%$$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$6300 = \text{M.P.} \left(\frac{100 - 25}{100} \right) \left(\frac{100 - 10}{100} \right)$$

$$6300 = \text{M.P.} \left(\frac{175}{200} \right) \left(\frac{90}{100} \right)$$

$$\text{M.P.} = \frac{6300 \times 200 \times 100}{175 \times 90}$$

$$\text{M.P.} = ₹ 8000$$

66. (3) Single equivalent discount for 8% and 5%

$$= \left(8 + 5 - \frac{8 \times 5}{100} \right) \%$$

$$= (13 - 0.4) = 12.6 \%$$

Single equivalent discount for 12.6% and 2%

$$= \left(12.6 + 2 - \frac{12.6 \times 2}{100} \right) \%$$

$$= 14.6 - 0.252 = 14.348 \%$$

∴ Net S.P.

$$= (100 - 14.348\%) \text{ of } 7500$$

$$= \frac{7500 \times 85.652}{100} = ₹ 6423.90$$

Alter : Using Rule 3,

M.P. = ₹ 7500

S.P. = ?, $D_1 = 8\%$, $D_2 = 5\%$,

$D_3 = 2\%$

S.P. =

$$\text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right)$$

$$= 7500 \left(\frac{100 - 8}{100} \right) \left(\frac{100 - 5}{100} \right) \left(\frac{100 - 2}{100} \right)$$

$$= 7500 \times \frac{92}{100} \times \frac{95}{100} \times \frac{98}{100}$$

$$= ₹ 6423.90$$

67. (3) Using Rule 5,
Single equivalent discount

$$= (x + y - \frac{xy}{100}) \%$$

$$= \left(10 + 20 - \frac{10 \times 20}{100} \right) \%$$

$$= 28\%$$

68. (1) Using Rule 5,
Let the marked price of article be Rs. x ,
Single equivalent discount for 20% and 10%

$$= (x + y - \frac{xy}{100}) \%$$

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \% = 28\%$$

According to the question,
30% of x - 28% of x = 144

$$\Rightarrow \frac{x \times 2}{100} = 144$$

$$\Rightarrow x = \frac{144 \times 100}{2}$$

$$= \text{Rs. } 7200$$

69. (1) Using Rule 5,
Single equivalent discount

$$= (x + y - \frac{xy}{100}) \%$$

$$= \left(10 + 20 - \frac{10 \times 20}{100} \right) \%$$

$$= (30 - 2) \% = 28\%$$

DISCOUNT

70. (4) Marked price of article

= Rs. x (let)

According to the question,

$$x \times \frac{80}{100} \times \frac{85}{100} = 3060$$

$$\Rightarrow x = \frac{3060 \times 100 \times 100}{80 \times 85}$$

= Rs. 4500

Aliter : Using Rule 3,

Here, S.P. = Rs. 3060

M.P. = ?, $D_1 = 20\%$, $D_2 = 15\%$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$3060 = \text{M.P.} \left(\frac{100 - 20}{100} \right) \left(\frac{100 - 15}{100} \right)$$

$$3060 = \text{M.P.} \left(\frac{80}{100} \times \frac{85}{100} \right)$$

$$\text{M.P.} = \frac{3060 \times 10000}{80 \times 85}$$

M.P. = Rs. 4500

71. (4) Single equivalent discount for discounts of 10% and 20%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= (30 - 2) \% = 28 \%$$

Single equivalent discounts for discounts of 28% and 25%

$$= \left(28 + 25 - \frac{28 \times 25}{100} \right) \%$$

$$= (53 - 7) \% = 46 \%$$

Aliter : Using Rule 4,

Here, $D_1 = 10\%$,

$D_2 = 20\%$, $D_3 = 25\%$

Single equivalent discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 10}{100} \right) \left(\frac{100 - 20}{100} \right) \left(\frac{100 - 25}{100} \right) \times 100 \right]$$

$$= 100 - \frac{90}{100} \times \frac{80}{100} \times \frac{75}{100} \times 100$$

$$= 100 - 54 = 46 \%$$

72. (4) Using Rule 5,

Single equivalent discount for 40% and 30%

$$= \left(40 + 30 - \frac{40 \times 30}{100} \right) \%$$

$$= (70 - 12) \% = 58 \%$$

Single equivalent discount for 45% and 20%

$$= \left(45 + 20 - \frac{45 \times 20}{100} \right) \%$$

$$= (65 - 9) \% = 56 \%$$

Let the marked price be Rs. x .

According to the question,

$$x \times (58 - 56) \% = 12$$

$$\Rightarrow \frac{x \times 2}{100} = 12$$

$$\Rightarrow x = \frac{1200}{2} = \text{Rs. } 600$$

73. (3) Using Rule 6,

Single equivalent discount for 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= 28 \%$$

\therefore C.P. = (100 - 28)% of 1500

$$= \frac{1500 \times 72}{100} = \text{Rs. } 1080$$

Actual C.P. = Rs. (1080 + 20)

= Rs. 1100

\therefore S.P. on 20% profit

$$= \frac{1100 \times 120}{100} = \text{Rs. } 1320$$

74. (1) Using Rule 3,

Price of article = Rs. x (let)

According to the question,

$$P = \frac{x(100 - 20)}{100} \times \frac{100 - 25}{100}$$

$$\Rightarrow P = x \times \frac{80}{100} \times \frac{75}{100}$$

$$\Rightarrow P = x \times \frac{4}{5} \times \frac{3}{4} = \frac{3x}{5}$$

$$\Rightarrow x = \text{Rs. } \frac{5}{3} P$$

75. (3) Using Rule 3,

Net selling price of scooter.

$$= \text{Rs.} \left(18000 \times \frac{90}{100} \times \frac{95}{100} \times \frac{98}{100} \right)$$

$$= \text{Rs. } 15082.2$$

76. (4) Single equivalent discount for $x\%$ and $y\%$.

$$= \left(x + y - \frac{xy}{100} \right) \%$$

\therefore Single equivalent discount for 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \% = 28 \%$$

Single equivalent discount for 28% and 5%

$$= \left(28 + 5 - \frac{28 \times 5}{100} \right) \%$$

$$= \left(33 - \frac{140}{100} \right) \%$$

$$= (33 - 1.4) \% = 31.6 \%$$

Aliter : Using Rule 4,

Here, $D_1 = 20\%$, $D_2 = 10\%$, $D_3 = 5\%$

Single equivalent discount

$$= 100 - \left[\left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right) \left(\frac{100 - D_3}{100} \right) \times 100 \right]$$

$$= 100 - \left[\left(\frac{100 - 20}{100} \right) \left(\frac{100 - 10}{100} \right) \left(\frac{100 - 5}{100} \right) \times 100 \right]$$

$$= 100 - \frac{80}{100} \times \frac{90}{100} \times \frac{95}{100} \times 100$$

$$= 31.6 \%$$

77. (2) Using Rule 5,

Single equivalent discount

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) = 28 \%$$

78. (4) Single equivalent discount for 15% and 10%.

$$= \left(15 + 10 - \frac{15 \times 10}{100} \right) \%$$

$$= (25 - 1.5) \% = 23.5 \%$$

\therefore Required S.P.

= (100 - 23.5)% of 300

$$= \frac{300 \times 76.5}{100} = \text{Rs. } 229.5$$

Aliter : Using Rule 3,

Here, M.P. = Rs. 300, S.P. = ?

$D_1 = 15\%$, $D_2 = 10\%$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$= 300 \left(\frac{100 - 15}{100} \right) \left(\frac{100 - 10}{100} \right)$$

$$= 300 \times \frac{85}{100} \times \frac{90}{100} = 229.50$$

DISCOUNT

79. (3) Single equivalent discount for 15% and 20%

$$= \left(15 + 20 - \frac{15 \times 20}{100} \right) \%$$

$$= (35 - 3) \% = 32 \%$$

Single equivalent discount for 32% and 25%

$$= \left(32 + 25 - \frac{32 \times 25}{100} \right) \%$$

$$= (57 - 8) \% = 49 \%$$

80. (1) Single equivalent discount for 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= (30 - 2) \% = 28 \%$$

Single equivalent discount for 28% and 5%

$$= \left(28 + 5 - \frac{28 \times 5}{100} \right) \%$$

$$= \left(33 - \frac{140}{100} \right) = 31.6 \%$$

81. (3) Single equivalent discount

$$= \left(x + y - \frac{xy}{100} \right) \%$$

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) = 32 \%$$

\therefore Required S.P.
= (100 - 32)% of 250
= 68% of 250

82. (2) Single equivalent discount for 15% and 20%

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) \%$$

$$= (35 - 3) \% = 32 \%$$

Single equivalent discount for 32% and 25%

$$= \left(32 + 25 - \frac{32 \times 25}{100} \right) \%$$

$$= (57 - 8) = 49 \%$$

83. (2) Single equivalent discount for 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \% = 28 \%$$

Marked price of article
= Rs. 900

S.P. of article
= (100 - 28)% of 900

$$= \frac{900 \times 72}{100} = \text{Rs. } 648$$

84. (3) Let marked price of article be Rs. x .

\therefore S.P. at 25% discount

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$$= \text{Rs. } \frac{75x}{100} = \text{Rs. } \frac{3x}{4}$$

S.P. at 15% discount

$$= \text{Rs. } \frac{85x}{100} = \text{Rs. } \frac{17x}{20}$$

$$\text{Increase} = \text{Rs. } \left(\frac{17x}{20} - \frac{3x}{4} \right)$$

$$= \text{Rs. } \left(\frac{17x - 15x}{20} \right) = \text{Rs. } \frac{x}{10}$$

\therefore Percentage increase

$$= \frac{\frac{x}{10}}{\frac{3x}{4}} \times 100$$

$$= \frac{x}{10} \times \frac{4}{3x} \times 100$$

$$= \frac{40}{3} = 13\frac{1}{3} \%$$

85. (1) Required selling price

$$= \text{Rs. } \left(700 \times \frac{80}{100} \times \frac{90}{100} \right)$$

$$= \text{Rs. } 504$$

86. (1) Single equivalent discount

$$= \left(x + y - \frac{xy}{100} \right) \%$$

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= (30 - 2) \% = 28 \%$$

87. (2) Single equivalent discount for 10% and 10%

$$= \left(10 + 10 - \frac{10 \times 10}{100} \right) \% = 19 \%$$

\therefore S.P. of chair

= (100 - 19)% of Rs. 500

$$= \text{Rs. } \left(\frac{500 \times 81}{100} \right) = \text{Rs. } 405$$

88. (4) Single equivalent discount for consecutive discounts of $x\%$ and $y\%$

$$= \left(x + y - \frac{xy}{100} \right) \%$$

Illustration : Let the marked price of an article be Rs. 100.

Two consecutive discounts
= 20% and 10%

Price after a discount of 20%
= Rs. 80

Price after a discount of 10%
= $\frac{80 \times 90}{100} = \text{Rs. } 72$

$$= \frac{80 \times 90}{100} = \text{Rs. } 72$$

Discount = Rs. (100 - 72)

$$= \text{Rs. } 28 \text{ i.e., } 28 \%$$

By formula,

Single equivalent discount

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= 28 \%$$

89. (1) For the first shopkeeper, Single equivalent discount for two successive discounts of 30% and 6%

$$= \left(30 + 6 - \frac{30 \times 6}{100} \right) \%$$

$$= (36 - 1.8) \% = 34.2 \%$$

\therefore S.P. of sewing machine

= (100 - 34.2)% of Rs. 700

$$= \text{Rs. } \left(\frac{700 \times 65.8}{100} \right) = \text{Rs. } 460.6$$

For the second shopkeeper, Single equivalent discount

$$= \left(20 + 16 - \frac{20 \times 16}{100} \right) \%$$

$$= (36 - 3.2) \% = 32.8 \%$$

\therefore S.P. of sewing machine

= 700 \times (100 - 32.8)%

$$= \text{Rs. } \left(\frac{700 \times 67.2}{100} \right)$$

$$= \text{Rs. } 470.4$$

Required difference

$$= \text{Rs. } (470.4 - 460.6) = \text{Rs. } 9.8$$

OR

Difference between single equivalent discounts

$$= (34.2 - 32.8) \% = 1.4 \%$$

\therefore Difference of S.P.

$$= \text{Rs. } \left(\frac{700 \times 1.4}{100} \right)$$

$$= \text{Rs. } 9.8$$

90. (4) Let the C.P. of sweater be Rs. 100 and its marked price be Rs. x . According to the question,

$$x \times \frac{80}{100} = 128$$

$$\Rightarrow x \times \frac{4}{5} = 128$$

$$\Rightarrow x = \frac{128 \times 5}{4} = \text{Rs. } 160$$

When discount = 14%, then

S.P. of sweater

= 160 \times (100 - 14)%

$$= \frac{160 \times 86}{100} = \text{Rs. } 137.6$$

\therefore C.P. = Rs. 100

\therefore Profit per cent = 37.6%

DISCOUNT

91. (3) The customer pays in cash. Single equivalent discount for 15% and 4%

$$= \left(15 + 4 - \frac{15 \times 4}{100}\right)\%$$

$$= (19 - 0.6)\% = 18.4\%$$

\therefore Required S.P.
 $= (100 - 18.4)\%$ of 200

$$= \text{Rs. } \left(\frac{200 \times 81.6}{100}\right)$$

$$= \text{Rs. } 163.2$$

92. (4) According to the question, First discount = 15%
 S.P. of dinner set after first discount = $(100 - 15)\%$ of Rs. 1500

$$= \text{Rs. } \left(\frac{1500 \times 85}{100}\right)$$

$$= \text{Rs. } 1275$$

Second discount
 $= \text{Rs. } (1275 - 1173)$
 $= \text{Rs. } 102$

If second discount be $x\%$, then

$$\therefore \frac{1275 \times x}{100} = 102$$

$$\Rightarrow x = \frac{102 \times 100}{1275} = 8\%$$

93. (1) Let the C.P. of article be Rs. 100.

\therefore Its marked price = Rs. 125

$$\text{SP} = \text{Rs. } \left(\frac{125 \times 90}{100}\right)$$

$$= \text{Rs. } 112.5$$

\therefore Profit per cent = 12.5%

OR

Profit per cent

$$= \left(x + y + \frac{xy}{100}\right)\%$$

where $x = 25\%$; $y = -10\%$

$$= \left(25 - 10 - \frac{25 \times 10}{100}\right)\%$$

$$= 12.5\%$$

TYPE-II

1. (2) Required loss [As per Rule]

$$= \left(\frac{10 \times 10}{100}\right)\% = 1\%$$

Aliter : Using Rule 8,

Here, $r = 10\%$ and $r_1 = 10\%$

\Rightarrow Required profit or loss

$$= \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{10 \times (100 - 10)}{100} - 10$$

$$= 9 - 10$$

$$= -1\% \text{ (-ve sign shows loss)}$$

$$= 1\% \text{ loss}$$

2. (2) Suppose C.P. = 100
 On 20% above S.P. = 120
 On discount of 8%

$$= 120 - 120 \times \frac{8}{100}$$

$$= 120 - \frac{48}{5} = 120 - 9.6 = 110.4$$

Gain = $110.4 - 100 = 10.4\%$

Aliter : Using Rule 8,

Here, $r = 20\%$, $r_1 = 8\%$

Profit or loss

$$= \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{20 \times (100 - 8)}{100} - 8$$

$$= \frac{20 \times 92}{100} - 8$$

$$= 18.4 - 8$$

$$= 10.4\% \text{ profit}$$

3. (3) Let the cost price be x
 Mark Price

$$= \left(1 + \frac{20}{100}\right)x = 1.2x$$

$$\text{Cash price} = \left(1 - \frac{30}{100}\right)1.2x$$

$$= 0.7 \times 1.2x = 0.84x$$

$$\text{Net Loss} = x - 0.84x = 0.16x$$

\therefore Net loss%

$$= \frac{0.16x}{x} \times 100 = 16\%$$

Aliter : Using Rule 8,

Here, $r = 20\%$, $r_1 = 30\%$

Profit or loss

$$= \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{20 \times (100 - 30)}{100} - 30$$

$$= 14 - 30 = -16\%$$

$$= 16\% \text{ loss}$$

4. (4) Gain % = $20 - 10 - \frac{20 \times 10}{100}$

$$= 20 - 12 = 8\%$$

Aliter : Using Rule 8,

Here, $r = 20\%$, $r_1 = 10\%$

Profit or loss

$$= \frac{r \times (100 - r_1)}{100} - r_1$$

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$$= \frac{20 \times (100 - 10)}{100} - 10$$

$$= 18 - 10 = 8\% \text{ profit.}$$

5. (2) Let C.P. be 100

Marked price = 110

$\therefore x\%$ of 110 = 11

$$\Rightarrow x = \frac{11 \times 100}{110} = 10\%$$

Aliter : Using Rule 8,

Here, loss % = 1%, $r = 10\%$, $r_1 = x\%$

$$\text{loss \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$-1 = \frac{100 \times (100 - x)}{100} - x$$

(-ve sign for loss)

$$-100 = 1000 - 10x - 100x$$

$$+110x = 1100$$

$$x = 10\%$$

$$\Rightarrow r_1 = 10\%$$

6. (4) Let the CP of the article be 100.

According to the question,

The marked price = ₹ 130

Discount = 10%

\therefore SP = 90% of 130

$$= \frac{130 \times 90}{100} = ₹ 117$$

$$\therefore \text{Gain} = 117 - 100 = ₹ 17$$

\therefore Gain per cent = 17% since the CP = ₹ 100

Aliter : Using Rule 8,

Here, $r = 30\%$, $r_1 = 10\%$

$$\text{gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{30 \times (100 - 10)}{100} - 10$$

$$= \frac{30 \times 90}{100} - 10 = 17\%$$

7. (2) Let the cost price be ₹ 100.

\therefore Marked price = ₹ 120

$$\text{SP} = 87 \frac{1}{2}\% \text{ of } 120$$

$$= \frac{175}{200} \times 120 = ₹ 105$$

\therefore Gain per cent = 5%

Aliter : Using Rule 8,

Here, $r = 20\%$, $r_1 = 12 \frac{1}{2}\%$

$$\text{Profit \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{20 \times \left(100 - \frac{25}{2}\right)}{100} - \frac{25}{2}$$

$$= \frac{20 \times 175}{200} - 12.5$$

$$= 17.5 - 12.5 = 5\%$$

8. (1) Let the C.P. be ₹ 100
 \therefore Marked price = ₹ 130
 S.P. = 85% of ₹ 130

$$= ₹ \left(\frac{85 \times 130}{100}\right) = ₹ 110.5$$

\therefore Gain percent = 10.5%

Aliter : Using Rule 8,
 Here, $r = 30\%$, $r_1 = 15\%$

$$\text{Profit \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{30 \times (100 - 15)}{100} - 15$$

$$= \frac{30 \times 85}{100} - 15$$

$$= 25.5 - 15 = 10.5\%$$

9. (1) Let the cost price of article = ₹ 100
 \therefore Marked price = ₹ 125
 SP of the article

$$= \left(100 - \frac{25}{2}\right)\% \text{ of } 125$$

$$= \frac{175}{2}\% \text{ of } 125$$

$$= \frac{125 \times 175}{2 \times 100} = \frac{875}{8}$$

$$= ₹ 109 \frac{3}{8}$$

\therefore Gain percent

$$= \left(109 \frac{3}{8} - 100\right) = 9 \frac{3}{8}\%$$

Aliter : Using Rule 8,
 Here, $r = 25\%$,

$$r_1 = 12 \frac{1}{2}\% = 12.5\%$$

$$\text{Profit \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{25 \times (100 - 12.5)}{100} - 12.5$$

$$= \frac{25 \times 87.5}{100} - 12.5$$

$$= 21.875 - 12.5 = 9.375$$

$$= 9 \frac{3}{8}\%$$

10. (4) Let the marked price be x .

$$\therefore \frac{x \times 75}{100} = 200 \times \frac{135}{100}$$

$$\Rightarrow x = \frac{200 \times 135}{75} = ₹ 360$$

Aliter : Using Rule 9,
 Here, $r = 25\%$, $R = 35\%$,

C.P. = ₹ 200

Marked price

$$= \text{Rs.} 200 + 200 \times \left(\frac{r+R}{100-r} \times 100\right)\%$$

$$= 200 + 200 \times \left(\frac{25+35}{100-25}\right) \times 100\%$$

$$= 200 + \frac{200 \times 60}{75} \times 100\%$$

$$= 200 + \frac{200 \times 20 \times 4}{100}$$

$$= 200 + 160 = ₹ 360$$

11. (3) Let the cost price be ₹ 100.
 Marked price = ₹ 140

$$\text{S.P.} = \frac{75 \times 140}{100} = ₹ 105$$

\therefore Profit per cent = 5%

Aliter : Using Rule 8,

Here, $r = 40\%$, $r_1 = 25\%$

$$\text{Profit \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{40 \times (100 - 25)}{100} - 25$$

$$= \frac{40 \times 75}{100} - 25$$

$$= \frac{3000}{100} - 25$$

$$= 30 - 25 = 5\%$$

12. (4) Let cost price of article = ₹ 100
 \therefore Marked price of article

$$= \frac{100 \times 120}{100} = ₹ 120$$

S.P. of article = ₹ 110

\therefore Discount = 120 - 110 = ₹ 10

\therefore If discount = $x\%$, then

$$\frac{120 \times x}{100} = 10$$

$$\Rightarrow x = \frac{10 \times 100}{120} = \frac{25}{3} = 8 \frac{1}{3}\%$$

Aliter : Using Rule 8,

Here, $r = 20\%$, Profit = 10%

Let, discount $r_1 = x\%$

$$\text{Profit \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$10 = \frac{20 \times (100 - x)}{100} - r_1$$

$$1000 = 2000 - 20x - 100x$$

$$-1000 = -120x$$

$$x = \frac{100}{12}$$

$$= \frac{25}{3} = 8 \frac{1}{3}\%$$

13. (2) Let the CP of each shirt be ₹ 100, then SP = ₹ 140.

$$\therefore \text{New SP} = \frac{140 \times 90}{100} = ₹ 126$$

\therefore When S.P. is ₹ 126,
 C.P. = ₹ 100

$$\therefore \text{When S.P. is ₹ } \frac{13608}{72},$$

then C.P.

$$= \frac{100}{126} \times \frac{13608}{72} = ₹ 150$$

14. (2) C.P. of article = ₹ 100
 Marked price = ₹ 150

$$\text{S.P.} = \frac{150 \times 60}{100} = ₹ 90$$

Loss = 100 - 90 = ₹ 10 i.e. 10%

Aliter : Using Rule 8,

Here, $r = 50\%$, $r_1 = 40\%$

$$\text{His loss \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{50 \times (100 - 40)}{100} - 40$$

$$= \frac{50 \times 60}{100} - 40$$

$$= -10\%$$

(-ve sign shows loss)

= 10% loss

15. (4) Let the CP of article be ₹ 100.
 \therefore Marked price = ₹ 140

$$\text{S.P.} = \frac{140 \times 80}{100} = ₹ 112$$

\therefore Gain per cent = 12%

Aliter : Using Rule 8,

Here, $r = 40\%$, $r_1 = 20\%$

Required profit or loss %

$$= \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{40 \times (100 - 20)}{100} - 20$$

$$= \frac{40 \times 80}{100} - 20$$

$$= 32 - 20 = 12\% \text{ profit}$$

DISCOUNT

16. (4) Let the C.P. of article be ₹ 100

⇒ Marked price = ₹ 145

$$\Rightarrow \text{S.P.} = \frac{145 \times 80}{100} = ₹ 116$$

⇒ Profit percent = 16%

Aliter : Using Rule 8,

Here, $r = 45\%$, $r_1 = 20\%$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{45 \times (100 - 20)}{100} - 20$$

$$= \frac{3600}{100} - 20$$

$$= 36 - 20 = 16\%$$

17. (2) Let the cost price be ₹ 100.

∴ Marked price = ₹ 150

$$\text{S.P.} = \frac{150 \times 80}{100} = ₹ 120$$

when S.P. = 120, C.P. = 100

when S.P. = 840

$$\text{C.P.} = \frac{100}{120} \times 840 = ₹ 700$$

Aliter : Using Rule 8,

Here, $r = 50\%$, $r_1 = 20\%$,

$$\text{S.P.} = ₹ 840$$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{50 \times (100 - 20)}{100} - 20$$

$$= \frac{50 \times 80}{100} - 20$$

$$= 20\%$$

We know that

$$\text{Gain \%} = \frac{\text{S.P.} - \text{C.P.}}{\text{C.P.}} \times 100$$

$$20 = \left(\frac{840 - x}{x} \right) \times 100$$

$$20x = 84000 - 100x$$

$$120x = 84000$$

$$\boxed{x = 700}$$

∴ C.P. = ₹ 700

18. (3) Let the C.P. of each article be ₹ 100.

∴ Marked price = ₹ 140

$$\therefore \text{S.P.} = \frac{140 \times 85}{100} = ₹ 119$$

∴ Gain per cent = 19%

Aliter : Using Rule 8,

Here, $r = 40\%$, $r_1 = 15\%$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{40 \times (100 - 15)}{100} - 15$$

$$= \frac{40 \times 85}{100} - 15$$

$$= \frac{3400}{100} - 15$$

$$= 19\%$$

19. (3) Let C.P. be ₹ 100.

Marked price = ₹ 120

$$\text{S.P.} = \frac{120 \times 95}{100} = ₹ 114$$

Gain per cent = 14%

Aliter : Using Rule 8,

Here, $r = 20\%$, $r_1 = 5\%$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{20 \times (100 - 5)}{100} - 5$$

$$= 19 - 5 = 14\%$$

20. (1) Let Cost price = ₹ 100

Marked price = ₹ 120

$$\text{Selling price} = \frac{120 \times 80}{100} = ₹ 96$$

∴ Loss = ₹ 4 and loss per cent = 4%

Aliter : Using Rule 8,

Here, $r = 20\%$, $r_1 = 20\%$

$$\text{Loss \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{20 \times (100 - 20)}{100} - 20$$

$$= \frac{20 \times 80}{100} - 20$$

$$= -4\% \text{ (-ve sign shows loss)}$$

$$= 4\% \text{ loss}$$

21. (3) Let Cost price of article = ₹ 100

Marked price = ₹ 125

$$\therefore \text{S.P.} = \frac{125 \times 90}{100} = ₹ 112.5$$

$$\therefore \text{Gain} = 112.5 - 100 = 12.5$$

$$\Rightarrow \text{Gain percent} = 12.5\%$$

Aliter : Using Rule 8,

Here, $r = 25\%$, $r_1 = 10\%$

$$\text{Profit \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{25 \times (100 - 10)}{100} - 10$$

$$= \frac{25 \times 90}{100} - 10$$

$$= 22.5 - 10 = 12.5\%$$

22. (4) Let the cost price be ₹ 100 and marked price be x .

$$\therefore \frac{x \times 90}{100} = 108$$

$$\Rightarrow \frac{9x}{10} = 108$$

$$\Rightarrow x = \frac{108 \times 10}{9} = 120$$

Required Percent = 20%

Aliter : Using Rule 8,

Here, Gain % = 8%, $r_1 = 10\%$, $r = ?$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$8 = \frac{r \times (100 - 10)}{100} - 10$$

$$8 = \frac{r \times 90}{100} - 10$$

$$18 = \frac{r \times 9}{10} = 20\%$$

23. (1) Let the C.P. be ₹ 100 and the marked price be ₹ x .

$$\therefore x \times \frac{88}{100} = 132$$

$$\Rightarrow x = \frac{132 \times 100}{88}$$

= 150 i.e., more by 50%

∴ Required percentage = 50%

Aliter : Using Rule 8,

Here, Gain % = 32%,

$$r_1 = 12\%, r = ?$$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$32 = \frac{r \times (100 - 12)}{100} - 12$$

$$44 = \frac{r \times 88}{100}$$

$$r = 50\%$$

DISCOUNT

24. (4) C.P. of article = ₹ 100
Let marked price of article x.

$$\therefore x \times \frac{90}{100} = 117$$

$$\Rightarrow x = \frac{117 \times 100}{90}$$

= ₹ 130 or 30% above the cost price.

Aliter : Using Rule 8,

Here, $r_1 = 10\%$, gain % = 17%,
 $r = ?$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$17 = \frac{r \times (100 - 10)}{100} - 10$$

$$27 = \frac{r \times 90}{100}$$

$$r = 30\%$$

25. (3) Let marked price of the wrist watch be x

$$\therefore \frac{90x}{100} = \frac{450 \times 120}{100}$$

$$\Rightarrow 90x = 450 \times 120$$

$$\therefore x = \frac{450 \times 120}{90} = ₹ 600$$

Aliter : Using Rule 8,

Here, $r_1 = 10\%$, profit = 20%,
 $r = ?$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$20 = \frac{r \times (100 - 10)}{100} - 10$$

$$20 = \frac{9r}{10} - 10$$

$$30 = \frac{9r}{10}$$

$$r = \frac{300}{9}\%$$

$$\therefore \text{List price} = 450 + 450 \times \frac{300}{9}\%$$

$$= 450 + 450 \times \frac{300}{900}$$

$$= 450 + 150 = ₹ 600$$

26. (3) For Anand,
Cost price = ₹ x

$$\text{Marked price} = ₹ \frac{3}{2}x$$

$$\text{Selling price} = \frac{3x}{2} \times \frac{80}{100}$$

$$= ₹ \frac{6x}{5}$$

For Balaji,

$$\text{Cost price} = ₹ \frac{6x}{5}$$

$$\text{Selling price} = ₹ \left(\frac{6x}{5} + 20 \right)$$

$$\therefore \frac{6x}{5} + 20 = \frac{x \times 130}{100}$$

$$\Rightarrow \frac{13x}{10} - \frac{6x}{5} = 20$$

$$\Rightarrow \frac{13x - 12x}{10} = 20$$

$$\Rightarrow \frac{x}{10} = 20$$

$$\Rightarrow x = ₹ 200$$

\therefore Required gain percent

$$= \frac{20}{\frac{6x}{5}} \times 100$$

$$= \frac{20 \times 5 \times 100}{6 \times 200} = \frac{25}{3} = 8.33\%$$

27. (4) Cost price of the shirt = ₹ x

$$\therefore x \times \frac{120}{100} = \frac{850 \times 96}{100}$$

$$\Rightarrow x \times 120 = 850 \times 96$$

$$\Rightarrow x = \frac{850 \times 96}{120} = ₹ 680$$

Aliter : Using Rule 6,

Here $r = 20\%$, $D = 4\%$,

M.P. = ₹ 850, C.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{850}{\text{C.P.}} = \frac{100 + 20}{100 - 4}$$

$$\text{C.P.} = \frac{850 \times 96}{120}$$

$$\text{C.P.} = ₹ 680$$

28. (2) Cost price of the article = ₹ x

$$\therefore x \times \frac{125}{100} = \frac{500 \times 95}{100}$$

$$\Rightarrow x = \frac{500 \times 95}{125} = ₹ 380$$

Aliter : Using Rule 6,

Here, $R = 25\%$, $D = 5\%$,

M.P. = ₹ 500, C.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + R}{100 - D}$$

$$\frac{500}{\text{C.P.}} = \frac{100 + 25}{100 - 5}$$

$$\text{C.P.} = \frac{500 \times 95}{125} = ₹ 380$$

29. (2) Marked price = ₹ x

$$\text{Discount} = ₹ \frac{x}{5}$$

$$\text{S.P.} = x - \frac{x}{5} = ₹ \frac{4x}{5}$$

$$\text{Loss} = ₹ \frac{x}{10}$$

$$\therefore \text{C.P.} = \frac{4x}{5} + \frac{x}{10}$$

$$= \frac{8x + x}{10} = ₹ \frac{9x}{10}$$

$$\therefore \text{Loss per cent} = \frac{\frac{x}{10}}{\frac{9x}{10}} \times 100$$

$$= \frac{100}{9} = 11\frac{1}{9}\%$$

30. (2) Marked price of article

= ₹ x (let)

\therefore S.P. of article

$$= ₹ \left(x \times \frac{90}{100} \times \frac{108}{100} \right)$$

$$\therefore x \times \frac{90}{100} \times \frac{108}{100} = 3402$$

$$\Rightarrow x = \frac{3402 \times 100 \times 100}{90 \times 108}$$

$$= ₹ 3500$$

DISCOUNT

31. (1) Let the marked price of table be ₹ x .

$$\therefore \frac{x \times 80}{100} = \frac{3200 \times 125}{100}$$

$$\Rightarrow x \times 80 = 3200 \times 125$$

$$\Rightarrow x = \frac{3200 \times 125}{80} = ₹ 5000$$

Aliter : Using Rule 6,

Here, $r = 25\%$, $D = 20\%$,

C.P. = ₹ 3200, M.P. = ?

$$\frac{M.P.}{C.P.} = \frac{100+r}{100-D}$$

$$\frac{M.P.}{3200} = \frac{100+25}{100-20}$$

$$M.P. = \frac{125 \times 3200}{80} = ₹ 5000$$

32. (4) Marked price of article = ₹ x

$$\therefore \frac{x \times (100 - 12.5)}{100} = \frac{210 \times 120}{100}$$

$$\Rightarrow x \times 87.5 = 210 \times 120$$

$$\Rightarrow x = \frac{210 \times 120}{87.5} = ₹ 288$$

Aliter : Using Rule 6,

Here, $R = 20\%$, $D = 12.5\%$,

C.P. = ₹ 210, M.P. = ?

$$\frac{M.P.}{C.P.} = \frac{100+r}{100-D}$$

$$\frac{M.P.}{210} = \frac{100+20}{100-12.5}$$

$$M.P. = \frac{120}{87.5} \times 210 = ₹ 288$$

33. (3) C.P. of article = ₹ 100 and marked price of article = ₹ x (let)

$$\therefore x \times \frac{90}{100} = 117$$

$$\Rightarrow x = \frac{117 \times 100}{90} = ₹ 130$$

i.e. 30% above the cost price.

Aliter : Using Rule 6,

Let, C.P. = ₹ 100, $r = 17\%$,

$D = 10\%$, M.P. = ?

$$\frac{M.P.}{C.P.} = \frac{100+r}{100-D}$$

$$\frac{M.P.}{100} = \frac{100+17}{100-10}$$

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$$M.P. = \frac{117}{90} \times 100$$

$$M.P. = ₹ 130$$

\Rightarrow 30% above cost price.

34. (4) Production cost of radio = ₹ x

$$\therefore \frac{x \times 130}{100} = 286$$

$$\Rightarrow x = \frac{286 \times 100}{130} = ₹ 220$$

\therefore Selling price = 90% of 286

$$= \frac{286 \times 90}{100} = ₹ 257.40$$

Profit = ₹ (257.40 - 220)

$$= ₹ 37.40$$

35. (1) C.P. of cycle = Rs. x

$$\therefore 840 \times \frac{90}{100} = \frac{x \times 126}{100}$$

$$\Rightarrow x \times 126 = 840 \times 90$$

$$\Rightarrow x = \frac{840 \times 90}{126} = ₹ 600$$

Aliter : Using Rule 6,

Here, $r = 26\%$, $D = 10\%$,

M.P. = ₹ 840

$$\frac{M.P.}{C.P.} = \frac{100+r}{100-D}$$

$$\frac{840}{M.P.} = \frac{100+26}{100-10}$$

$$C.P. = \frac{840 \times 90}{126} = \text{Rs. } 600$$

36. (4) C.P. of article = ₹ 100

Marked price = ₹ 110

$$S.P. = \frac{110 \times 90}{100} = ₹ 99$$

Loss = 100 - 99 = ₹ 1 = 1%

Aliter : Using Rule 8,

Here, $r = 10\%$, $r_1 = 10\%$

\Rightarrow Gain or Loss %

$$= \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{10 \times (100 - 10)}{100} - 10$$

$$= 9 - 10$$

$$= -1 \text{ (-ve sign shows loss)}$$

$$\Rightarrow \text{Loss} = 1\%$$

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37. (3) Marked price of article

$$= \text{Rs. } x$$

$$\therefore \text{S.P. of article} = \frac{90x}{100}$$

$$= \text{Rs. } \frac{9x}{10}$$

$$\therefore \text{C.P.} = \frac{80 \times 9x}{100 \times 10} = \frac{36x}{50}$$

$$\therefore \text{Gain} = \frac{9x}{10} - \frac{36x}{50}$$

$$= \frac{45x - 36x}{50} = \text{Rs. } \frac{9x}{50}$$

$$\therefore \text{Gain\%} = \frac{\frac{9x}{50}}{\frac{36x}{50}} \times 100 = 25\%$$

38. (4) Marked price of instrument

= Rs. x (let)

$$\therefore \text{Its S.P.} = \text{Rs. } \frac{80x}{100}$$

$$= \text{Rs. } \frac{4x}{5}$$

$$\therefore \text{C.P.} = \text{Rs. } \left(\frac{4x}{5} - 150 \right)$$

$$\therefore \frac{4x}{5} = \left(\frac{4x}{5} - 150 \right) \times \frac{125}{100}$$

$$\Rightarrow \frac{4x}{5} = \left(\frac{4x}{5} - 150 \right) \times \frac{5}{4}$$

$$\Rightarrow \frac{4x}{5} \times \frac{4}{5} = \frac{4x}{5} - 150$$

$$\Rightarrow \frac{4x}{5} - \frac{16x}{25} = 150$$

$$\Rightarrow \frac{20x - 16x}{25} = 150$$

$$\Rightarrow \frac{4x}{25} = 150 \Rightarrow 4x = 150 \times 25$$

$$\Rightarrow x = \frac{150 \times 25}{4} = \text{Rs. } 937.5$$

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39. (2) Marked price of TV

$$= \text{Rs. } x \text{ (let)}$$

According to question,

$$\frac{x \times 80}{100} - \frac{x \times 70}{100} = 800$$

$$\Rightarrow \frac{10x}{100} = 800$$

$$\Rightarrow x = \frac{800 \times 100}{10} = \text{Rs. } 8000$$

40. (4) Profit per cent

$$= \left(x + y + \frac{xy}{100} \right) \%$$

$$= \left(25 - 10 - \frac{25 \times 10}{100} \right) \%$$

$$= (15 - 2.5) \% = 12.5 \%$$

Aliter : Using Rule 8,

$$\text{Here } r = 25\%, r_1 = 10\%$$

$$\text{Gain } \% = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{25 \times (100 - 10)}{100} - 10$$

$$= \frac{25 \times 90}{100} - 10$$

$$= 22.5 - 10 = 12.5\%$$

41. (1) Let the C.P. of article be Rs. 100,

According to the questions

Marked price of article = Rs. 120

After a discount of 8%,

$$\text{S. P.} = \left(\frac{120 \times 92}{100} \right)$$

$$= \text{Rs. } 110.4 \text{ Gain}$$

$$= \text{Rs. } (110.4 - 100) = \text{Rs. } 10.4$$

$$\therefore \text{Gain } \% = 10.4\%$$

Aliter : Using Rule 8,

$$\text{Here, } r = 20\%$$

$$r_1 = 8\%$$

$$\text{Gain } \% = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{20 \times (100 - 8)}{100} - 8$$

$$= \frac{20 \times 92}{100} - 8$$

$$= 18.4 - 8 = 10.4\%$$

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42. (1) C.P of article = Rs. 100 (let).

M.P. of article = Rs. x (let)

According to the question,

$$\frac{x \times 90}{100} = 117$$

$$\Rightarrow x = \frac{117 \times 100}{90} = \text{Rs. } 130$$

= marked price

\therefore On allowing no discount profit = 30%

43. (4) Let the marked price of the camera be Rs. x .

According to the question,

$$\frac{x \times 90}{100} = \frac{600 \times 120}{100}$$

$$\Rightarrow x \times 90 = 600 \times 120$$

$$\Rightarrow x = \frac{600 \times 120}{90} = \text{Rs. } 800$$

Aliter : Using Rule 6

Here, $r = 20\%$

$D = 10\%$

C.P. = Rs. 600

M.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{\text{M.P.}}{600} = \frac{100 + 20}{100 - 10}$$

$$\text{M.P.} = \frac{120 \times 600}{90} = 800$$

44. (3) Let the C.P. of article be Rs. 100 and the marked price be Rs. x .

Case I

$$\frac{x \times 90}{100} = 120$$

$$\Rightarrow x = \frac{120 \times 100}{90}$$

$$= \text{Rs. } \frac{400}{3}$$

Case II

$$\text{S.P.} = \frac{x \times 80}{100} = \text{Rs. } \frac{4x}{5}$$

$$= \text{Rs. } \left(\frac{4}{5} \times \frac{400}{3} \right) = \text{Rs. } \frac{320}{3}$$

$$\therefore \text{Profit} = \text{Rs. } \left(\frac{320}{3} - 100 \right)$$

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$$= \text{Rs. } \left(\frac{320 - 300}{3} \right)$$

$$= \text{Rs. } \frac{20}{3}$$

$$\therefore \text{Profit percent} = \frac{20}{3} \%$$

$$= 6 \frac{2}{3} \%$$

45. (2) Let the marked price of article be Rs. x and its C.P. be Rs. 100.

According to the question,

$$x \times \frac{80}{100} = \frac{100 \times 120}{100}$$

$$\Rightarrow x = \frac{120 \times 100}{80} = \text{Rs. } 150$$

S.P. after a discount of 30%

$$= \frac{150 \times 70}{100}$$

$$= \text{Rs. } 105 \text{ i.e. gain} = 5\%$$

46. (1) C.P. of article

$$= \text{Rs. } \left(\frac{100}{130} \times 286 \right) = \text{Rs. } 220$$

S.P. of article

$$= \frac{286 \times 90}{100} = \text{Rs. } 257.40$$

\therefore Profit

$$= \text{Rs. } (257.40 - 220)$$

$$= \text{Rs. } 37.40$$

\therefore Profit percent

$$= \frac{37.40 \times 100}{220} = 17\%$$

47. (3) Marked price of toy = Rs. x

A discount of 20% is given.

$$\therefore \frac{80x}{100} = 300$$

$$\Rightarrow x = \frac{300 \times 100}{80}$$

$$= \text{Rs. } 375$$

\therefore Profit percent

$$= \left(\frac{405 - 375}{375} \right) \times 100 = 8\%$$

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48. (4) C.P. of article = Rs. 100
Its marked price = Rs. 120

$$\therefore \text{S.P.} = \frac{120 \times 95}{100}$$

$$= \text{Rs. } 114$$

$$\therefore \text{Profit percent} = 14\%$$

49. (4) Let the marked price of radio be Rs. x .

According to the question,

$$85\% \text{ of } x = 255$$

$$\Rightarrow \frac{x \times 85}{100} = 255$$

$$\Rightarrow x = \frac{255 \times 100}{85} = \text{Rs. } 300$$

50. (1) Let the C.P. of article be Rs. 100.

$$\therefore \text{Its marked price} = \text{Rs. } 130$$

$$\text{Its S.P.} = 90\% \text{ of } 130$$

$$= \frac{130 \times 90}{100} = \text{Rs. } 117$$

$$\therefore \text{Profit per cent} = 17\%$$

51. (3) Let the production cost of article be Rs. x .

Effective percentage

$$= \left(x + y + \frac{xy}{100} \right) \%$$

$$= \left(40 - 20 - \frac{40 \times 20}{100} \right) \%$$

$$= (20 - 8)\% = 12\%$$

According to the question,

$$12\% \text{ of } x = 48$$

$$\Rightarrow \frac{12x}{100} = 48$$

$$\Rightarrow x = \frac{48 \times 100}{12} = \text{Rs. } 400$$

52. (3) Let the marked price of watch be Rs. x .

Actual C.P. of watch

$$= 110\% \text{ of } 500$$

$$= \text{Rs. } \left(\frac{500 \times 110}{100} \right) = \text{Rs. } 550$$

According to the question,

$$x \times \frac{75}{100} = \frac{550 \times 120}{100}$$

$$\Rightarrow x = \frac{550 \times 120}{75} = \text{Rs. } 880$$

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53. (2) C.P. of laptop = Rs. x

According to the question,

$$x \times \frac{96}{100} = \frac{12000 \times 85}{100}$$

$$= 120 \times 85$$

$$\Rightarrow x = \frac{120 \times 85 \times 100}{96}$$

$$= \text{Rs. } 10625$$

54. (2) Let the C.P. of article be Rs. 100.

According to the question,

Marked price of article

$$= \text{Rs. } 120$$

$$\text{S.P. of article} = \text{Rs. } \left(\frac{120 \times 80}{100} \right)$$

$$= \text{Rs. } 96$$

$$\therefore \text{Loss} = \text{Rs. } 4 \text{ i.e. } 4\%$$

55. (2) C.P. of article = Rs. 100

$$\therefore \text{Marked price} = \text{Rs. } 120$$

$$\text{S.P.} = \frac{120 \times 80}{100} = \text{Rs. } 96$$

$$\therefore \text{Loss} = \text{Rs. } 4 \text{ i.e., } 4\%$$

56. (2) Marked price of gift box = Rs. x

According to the question,

$$\frac{90x}{100} = \frac{150 \times 110}{100}$$

$$\Rightarrow 90x = 150 \times 110$$

$$\Rightarrow x = \frac{150 \times 110}{90} = \text{Rs. } 183.3$$

57. (2) Let the marked price of article be Rs. x .

According to the question,

$$95\% \text{ of } x = 950$$

$$\Rightarrow x \times \frac{95}{100} = 950$$

$$\Rightarrow x = \frac{950 \times 100}{95} = \text{Rs. } 1000$$

58. (1) Let the marked price of article be Rs. x and its cost price be Rs. 100.

According to the question,

$$(100 - 20)\% \text{ of } x = 125$$

$$\Rightarrow x \times \frac{80}{100} = 125$$

$$\Rightarrow x = \text{Rs. } \left(\frac{125 \times 100}{80} \right)$$

$$= \text{Rs. } 156.25$$

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59. (1) C.P. of article = Rs. 100 (let)

$$\therefore \text{Its marked price} = \text{Rs. } 140$$

$$\text{Discount} = 25\%$$

$$\therefore \text{S.P. of article}$$

$$= \text{Rs. } \left(\frac{140 \times 75}{100} \right)$$

$$= \text{Rs. } 105$$

$$\therefore \text{Profit per cent} = 5\%$$

60. (3) C.P. of article = Rs. 100 (let)

$$\therefore \text{Marked price} = \text{Rs. } 120$$

$$\text{Its S.P.} = \text{Rs. } 108$$

$$\therefore \text{Discount} = \text{Rs. } (120 - 108)$$

$$= \text{Rs. } 12$$

$$\therefore \text{If discount be } x\%, \text{ then,}$$

$$120 \times \frac{x}{100} = 12$$

$$\Rightarrow x = \frac{12 \times 100}{120} = 10\%$$

61. (2) Let the marked price of watch be Rs. x .

According to the question,

$$(20 - 10)\% \text{ of } x = 125$$

$$\Rightarrow x \times \frac{10}{100} = 125$$

$$\Rightarrow x = \text{Rs. } 1250$$

62. (3) Single equivalent discount for 15% and 20%

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) \%$$

$$= (35 - 3)\% = 32\%$$

$$\therefore \text{Net rate of cloth}$$

$$= (100 - 32)\% \text{ of Rs. } 50$$

$$= \text{Rs. } \left(\frac{50 \times 68}{100} \right) \text{ per metre}$$

$$= \text{Rs. } 34 \text{ per metre}$$

63. (2) Let the C.P. of article be Rs. 100.

$$\therefore \text{Its marked price} = \text{Rs. } 120$$

Let the rate of discount be $x\%$

According to the question,

$$x\% \text{ of } 120 = 120 - 108$$

$$\Rightarrow \frac{120 \times x}{100} = 12$$

$$\Rightarrow x = \frac{12 \times 100}{120} = 10\%$$

64. (1) Let the marked price of article be Rs. x .

According to the question,

$$90\% \text{ of } x = 720 \times 115\%$$

$$\Rightarrow x \times \frac{90}{100} = 720 \times \frac{115}{100}$$

$$\Rightarrow x = \frac{115 \times 720}{90} = \text{Rs. } 920$$

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65. (3) Let the marked price of article be Rs. x .

According to the question,

$$(9 - 7)\% \text{ of } x = 15$$

$$\Rightarrow x \times \frac{2}{10} = 15$$

$$\Rightarrow x = \frac{15 \times 100}{2} = \text{Rs. } 750$$

66. (2) Let the marked price of book be Rs. 100.

C.P. for the retailer

$$= \text{Rs. } (100 - 30) = \text{Rs. } 70$$

S.P. for the retailer = Rs. 90

\therefore Profit per cent

$$= \left(\frac{90 - 70}{70} \right) \times 100$$

$$= \frac{200}{7} = 28\frac{4}{7}\%$$

67. (1) Let the C.P. of article be Rs. x .

$$\therefore \text{Marked price} = \text{Rs. } \frac{112x}{100}$$

According to the question,

$$\frac{112x}{100} \times \frac{95}{100} = 532$$

$$\Rightarrow x = \frac{532 \times 10000}{112 \times 95} = \text{Rs. } 500$$

68. (4) Percentage effect

$$= \left(40 - 25 - \frac{40 \times 25}{100} \right) \%$$

$$= (15 - 10)\% = 5\%$$

If the C.P. of article be Rs. x ,

$$\text{then, } x \times \frac{105}{100} = 2100$$

$$\Rightarrow x = \frac{2100 \times 100}{105} = \text{Rs. } 2000$$

69. (3) Let the marked price of the article be Rs. 100.

\therefore C.P. for the retailer

$$= \text{Rs. } \left(\frac{100 \times 60}{100} \right) = \text{Rs. } 60$$

Its S.P. = Rs. 100

$$\therefore \text{Profit} = \text{Rs. } (100 - 60)$$

$$= \text{Rs. } 40$$

$$\therefore \text{Profit per cent} = \frac{40}{60} \times 100$$

$$= \frac{200}{3} = 66\frac{2}{3}\%$$

70. (2) Single equivalent discount for 20% and 10%

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= (30 - 2)\% = 28\%$$

\therefore S.P. of article

$$= (100 - 28)\% \text{ of Rs. } 900$$

$$= \text{Rs. } \left(\frac{900 \times 72}{100} \right) = \text{Rs. } 648$$

71. (3) Let C.P. of article be Rs. 100.

\therefore Marked price = Rs. 150

S.P. of article

$$= \text{Rs. } \left(\frac{150 \times 75}{100} \right)$$

$$= \text{Rs. } 112.5$$

$$\therefore \text{Profit} = \text{Rs. } (112.5 - 100)$$

$$= \text{Rs. } 12.5$$

$$\therefore \text{C.P.} = \text{Rs. } 100$$

$$\therefore \text{Profit per cent} = 12.5\%$$

TYPE-III

1. (4) S.P. of that article

$$= 800 \times \frac{90}{100} = \text{₹ } 720$$

He still makes 20% profit

\therefore C.P. of the article

$$= 720 \times \frac{100}{120} = \text{₹ } 600$$

Aliter : Using Rule 6,

Here, $r = 20\%$, $D = 10\%$,

$$\text{M.P.} = \text{₹ } 800, \text{C.P.} = ?$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{800}{\text{C.P.}} = \frac{100 + 20}{100 - 10}$$

$$\text{C.P.} = \frac{800 \times 90}{120}$$

$$\text{C.P.} = \text{₹ } 600$$

2. (4) Discount

$$= 12\frac{1}{2}\% = \frac{25}{2}\%$$

After discount S.P.

$$= \text{₹ } 200 \times 87.5 = \text{₹ } 175$$

Gain % = 25%

$$\text{Required C.P.} = \text{₹ } \frac{100}{125} \times 175$$

$$= \text{₹ } 140$$

Aliter : Using Rule 6,

Here, $r = 25\%$, $D = 12.5\%$,

$$\text{M.P.} = \text{₹ } 200, \text{C.P.} = ?$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{200}{\text{C.P.}} = \frac{100 + 25}{100 - 12.5}$$

$$\text{C.P.} = \frac{200 \times 87.5}{125}$$

$$\text{C.P.} = \text{₹ } 140$$

3. (2) SP of article

$$= (100 - 20)\% \text{ of } 880$$

$$= 80\% \text{ of } 880$$

$$= 880 \times \frac{80}{100} = \text{₹ } 704$$

Let CP be x

Again, 110% of $x = 704$

$$x = \frac{704}{110} \times 100 = \text{₹ } 640$$

\therefore Original cost = ₹ 640

Aliter : Using Rule 6,

Here, $r = 10\%$, $D = 20\%$,

$$\text{M.P.} = \text{₹ } 880, \text{C.P.} = ?$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{880}{\text{C.P.}} = \frac{100 + 10}{100 - 20}$$

$$\text{C.P.} = \frac{880 \times 80}{110}$$

$$\text{C.P.} = \text{₹ } 640$$

4. (2) Selling Price

$$= \text{₹ } (1100 - 10\% \text{ of } 1100)$$

$$= \text{₹ } (1100 - 110) = \text{₹ } 990$$

Let the cost price = x

$$\therefore x + 10\% \text{ of } x = 990$$

$$\Rightarrow \frac{11x}{10} = 990$$

$$\Rightarrow x = \frac{990 \times 10}{11} = \text{₹ } 900$$

Aliter : Using Rule 6,

Here, $r = 10\%$, $D = 10\%$,

$$\text{M.P.} = \text{₹ } 1100, \text{C.P.} = ?$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{1100}{\text{C.P.}} = \frac{100 + 10}{100 - 10}$$

$$\text{C.P.} = \frac{1100 \times 90}{110} = \text{₹ } 900$$

DISCOUNT

5. (1) Marked price = ₹ 690

$$\therefore \text{Discount} = 10\%$$

$$\text{SP} = \frac{690 \times 90}{100} = ₹ 621$$

$$\text{Profit} = 8\%$$

$$\therefore \text{CP} = \frac{621}{108} \times 100 = ₹ 575$$

$$\text{Profit without discount} = 690 - 575 = ₹ 115$$

Profit per cent

$$= \frac{115}{575} \times 100 = 20\%$$

Aliter (1) : Using Rule 9,

$$\text{Here, } r = 10\%$$

$$R = 20\%$$

Required percentage

$$= \frac{(r + R)}{100 - r} \times 100\%$$

$$= \frac{10 + 20}{100 - 10} \times 100\%$$

$$= \frac{30}{90} \times 100\%$$

$$= 33\frac{1}{3}\%$$

$$\text{Gain \%} = \frac{\text{S.P.} - \text{C.P.}}{\text{C.P.}} \times 100$$

(without discount)

$$= \frac{480 - 400}{400} \times 100$$

$$= \frac{80}{400} \times 100 = 20\%$$

Aliter (2) : Using Rule 6,

$$\text{Here, M.P.} = ₹ 690, D = 10\%, r = 8\%$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{690}{\text{C.P.}} = \frac{100 + 8}{100 - 10}$$

$$\text{C.P.} = \frac{690 \times 90}{108}$$

$$\text{C.P.} = ₹ 575$$

Gain % (without discount)

$$= \frac{690 - 575}{575} \times 100\%$$

$$= \frac{115}{575} \times 100\%$$

$$= 20\%$$

6. (2) Let the CP be ₹ 100. Then SP = ₹ 120

Let the marked price be x .

Then, 90% of $x = ₹ 120$

$$\Rightarrow x = \frac{120 \times 100}{90} = \frac{400}{3}$$

$$= 133\frac{1}{3}$$

It is $33\frac{1}{3}\%$ higher than the CP.

7. (2) $\text{SP} = 180 \times \frac{120}{100} = ₹ 216$

$$\therefore 90\% = 216$$

$$100\% = \frac{216}{90} \times 100 = ₹ 240$$

8. (2) CP = ₹ 900

$$\therefore \text{S.P.} = 125\% \text{ of } 900$$

$$= \left(\frac{900 \times 125}{100} \right) = ₹ 1125$$

Let the marked price be x .

$$\therefore 90\% \text{ of } x = ₹ 1125$$

$$\Rightarrow x = \frac{1125 \times 100}{90} = ₹ 1250$$

9. (4) Let the cost price of article be x

$$\therefore 500 \times \frac{90}{100} = \frac{120}{100} \times x$$

$$\Rightarrow 450 = \frac{6x}{5}$$

$$\Rightarrow x = \frac{450 \times 5}{6} = ₹ 375$$

Aliter : Using Rule 6,

$$\text{C.P.} = ?, \text{M.P.} = ₹ 500, r = 20\%, D = 10\%$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{500}{\text{C.P.}} = \frac{100 + 20}{100 - 10}$$

$$\text{C.P.} = \frac{500 \times 90}{120} = ₹ 375$$

10. (2) SP of electric iron

$$= 88\% \text{ of } 300$$

$$= ₹ \frac{300 \times 88}{100} = ₹ 264$$

Profit = 10%

\therefore CP of electric iron

$$= \frac{100}{110} \times 264 = ₹ 240$$

After no discount,

$$\text{Gain} = 300 - 240 = ₹ 60$$

$$\text{Gain per cent} = \frac{60}{240} \times 100 = 25\%$$

Aliter : Using Rule 6,

$$\text{Here, M.P.} = ₹ 300,$$

$$r = 10\%, D = 12\%.$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{300}{\text{C.P.}} = \frac{100 + 10}{100 - 12}$$

$$\text{C.P.} = \frac{300 \times 88}{110}$$

Gain % (without discount)

$$= \frac{300 - 240}{240} \times 100 = 25\%$$

11. (3) Marked price = ₹ 50

$$\text{S.P. after discount} = 80\% \text{ of } 50 = ₹ 40$$

If the CP of article be x , then

$$\frac{125 \times x}{100} = 40$$

$$\Rightarrow x = \frac{40 \times 100}{125} = ₹ 32$$

Aliter : Using Rule 6,

$$\text{Here, M.P.} = ₹ 50, \text{C.P.} = ?,$$

$$r = 25\%, D = 20\%$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{50}{\text{C.P.}} = \frac{100 + 25}{100 - 20}$$

$$\text{C.P.} = \frac{50 \times 80}{125} = ₹ 32$$

12. (1) Let the CP be ₹ 100.

$$\therefore \text{SP} = ₹ 112$$

If the marked price be x , then

$$90\% \text{ of } x = 112$$

$$\Rightarrow x = \frac{112 \times 100}{90} = ₹ \frac{1120}{9}$$

$$\therefore \text{Required ratio} = 100 : \frac{1120}{9}$$

$$= 900 : 1120 = 45 : 56$$

Aliter : Using Rule 6,

$$\text{Here, } r = 12\%$$

$$D = 10\%$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

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$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + 12}{100 - 10}$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{112}{90}$$

$$\frac{\text{C.P.}}{\text{M.P.}} = \frac{90}{112}$$

$$\frac{\text{C.P.}}{\text{M.P.}} = \frac{45}{56}$$

$$\text{C.P.} : \text{M.P.} = 45 : 56$$

13. (4) If the CP of radio be x , then

$$\frac{108}{100} \text{ of } x = \frac{480 \times 90}{100}$$

$$\Rightarrow \frac{x \times 108}{100} = 432$$

$$\Rightarrow x = \frac{432 \times 100}{108} = ₹ 400$$

Gain per cent (if no discount is allowed) = $\frac{80}{400} \times 100 = 20\%$

Aliter : Using Rule 6,

Here, $r = 8\%$, $D = 10\%$,

$$\text{M.P.} = ₹ 480$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{480}{\text{C.P.}} = \frac{100 + 8}{100 - 10}$$

$$\text{C.P.} = \frac{480 \times 90}{108} = ₹ 400$$

$$\text{Gain \%} = \frac{\text{S.P.} - \text{C.P.}}{\text{C.P.}} \times 100$$

(without discount)

$$= \frac{480 - 400}{400} \times 100$$

$$= \frac{80}{400} \times 100 = 20\%$$

14. (1) Let C.P. of article be x

$$\frac{x \times 104.5}{100} = \frac{275 \times 95}{100}$$

$$\Rightarrow x \times 104.5 = 275 \times 95$$

$$\Rightarrow x = \frac{275 \times 95}{104.5} = ₹ 250$$

Aliter : Using Rule 6,

M.P. = ₹ 275, $D = 5\%$,

$r = 4.5\%$, C.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

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$$\frac{275}{\text{C.P.}} = \frac{100 + 4.5}{100 - 5}$$

$$\text{C.P.} = \frac{275 \times 95}{104.5}$$

$$\text{C.P.} = ₹ 250$$

15. (3) Let the marked price be x .

$$\therefore x \times \frac{84}{100} = \frac{1200 \times 112}{100}$$

$$\Rightarrow x \times \frac{84}{100} = 112 \times 12$$

$$\Rightarrow x = \frac{112 \times 1200}{84} = ₹ 1600$$

Aliter : Using Rule 6,

C.P. = ₹ 1200, $r = 12\%$,

$D = 16\%$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{\text{M.P.}}{1200} = \frac{100 + 12}{100 - 16}$$

$$\text{M.P.} = \frac{112 \times 1200}{84} = ₹ 1600$$

16. (1) Let the marked price be ₹100.

\therefore S.P. = 90% of 100 = ₹ 90

Profit = 17%

$$\text{C.P.} = ₹ 90 \times \frac{100}{117}$$

$$= ₹ \frac{1000}{13}$$

If no discount is allowed,

S.P. = ₹ 100

$$\text{Profit} = ₹ \left(100 - \frac{1000}{13} \right)$$

$$= ₹ \frac{300}{13}$$

\therefore Profit %

$$= \frac{300}{1000/13} \times 100 = 30\%$$

Aliter : Using Rule 6,

Here, $D = 10\%$, $r = 17\%$,

Let the M.P. = ₹ 100

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{100}{\text{C.P.}} = \frac{100 + 17}{100 - 10}$$

$$\frac{100}{\text{C.P.}} = \frac{117}{90}$$

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$$\text{C.P.} = \frac{100 \times 90}{117}$$

$$= \frac{1000}{13}$$

Profit = S.P. - C.P.

$$= 100 - \frac{1000}{13}$$

$$= \text{Rs.} \frac{300}{13}$$

$$\text{Profit \%} = \frac{\frac{300}{13}}{\frac{1000}{13}} \times 100\%$$

$$= 30\%$$

17. (1) Let the marked price = ₹ 100

\therefore S.P. = ₹ 80

Profit = 25%

$$\therefore \text{CP} = ₹ \left(\frac{100}{125} \times 80 \right) = ₹ 64$$

Profit after selling on marked price = 100 - 64 = ₹ 36

$$\therefore \text{Gain \%} = \frac{36}{64} \times 100 = 56.25\%$$

Aliter : Using Rule 6,

Here, $D = 20\%$

$r = 25\%$

Let, M.P. be ₹ 100

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{100}{\text{C.P.}} = \frac{100 + 25}{100 - 20}$$

$$\text{C.P.} = \frac{100 \times 80}{125}$$

C.P. = ₹ 64

Profit = 100 - 64 = 36

$$\text{Gain \%} = \frac{36}{64} \times 100\%$$

$$= 56.25\%$$

18. (4) Let the C.P. of article be ₹100 and its marked price be x .

$$\therefore x \times \frac{84}{100} = 105$$

$$\Rightarrow x = \frac{105 \times 100}{84} = 125$$

\therefore Required percentage = 25%

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Aliter : Using Rule 6,

Here, $r = 5\%$

$$D = 16\%$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$= \frac{100 + 5}{100 - 16} = \frac{105}{84}$$

Required Percentage

$$= \frac{105 - 84}{84} \times 100 = 25\%$$

19. (2) Let CP of radio be Rs. x .
According to the question,

$$\frac{108x}{100} = 4800 \times \frac{90}{100} = 4320$$

$$\Rightarrow x = \frac{4320 \times 100}{108} = ₹ 4000$$

If no discount is allowed,

Gain per cent

$$= \frac{800}{4000} \times 100 = 20\%$$

Aliter : Using Rule 6,

M.P. = ₹ 4800, $D = 10\%$, $r = 8\%$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{4800}{\text{C.P.}} = \frac{100 + 8}{100 - 10}$$

$$\text{C.P.} = \frac{4800 \times 90}{108}$$

$$\text{C.P.} = 4000$$

Gain % (without discount)

$$= \frac{4800 - 4000}{4000} \times 100$$

$$= \frac{800}{4000} \times 100$$

$$= 20\%$$

20. (2) S.P. for a profit of 12%

$$= \frac{8000 \times 112}{100} = ₹ 8960$$

$$\therefore \text{Discount} = 11200 - 8960$$

$$= ₹ 2240$$

If the discount per cent be x , then

$$\frac{11200 \times x}{100} = 2240$$

$$x = \frac{2240 \times 100}{11200} = 20\%$$

Aliter : Using Rule 6,

Here, M.P. = ₹ 11200

$$\text{C.P.} = ₹ 8000$$

$$r = 12\%$$

$$D = x\%$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{11200}{8000} = \frac{100 + 12}{100 - x}$$

$$= \frac{11200}{8000} = \frac{112}{100 - x}$$

$$100 - x = 80$$

$$\Rightarrow x = 20\%$$

21. (3) Let C.P. of article = ₹ 100

Marked price = x

Single equivalent discount

$$= \left(20 + \frac{25}{4} - \frac{20 \times 25}{400} \right) \%$$

$$= 25\%$$

$$\therefore x \times \frac{75}{100} = 120$$

$$\Rightarrow x = \frac{120 \times 100}{75} = ₹ 160$$

$$\Rightarrow 160 - 100 = 60\%$$

22. (1) If the marked price be x , then

$$x \times \frac{85}{100} = \frac{170 \times 120}{100}$$

$$\Rightarrow x \times 85 = 170 \times 120$$

$$\Rightarrow x = \frac{170 \times 120}{85} = ₹ 240$$

Aliter : Using Rule 6,

Here, $D = 15\%$

$$r = 20\%$$

$$\text{C.P.} = ₹ 170$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{\text{M.P.}}{170} = \frac{100 + 20}{100 - 15}$$

$$\frac{\text{M.P.}}{170} = \frac{120}{85}$$

$$\text{M.P.} = \frac{120 \times 170}{85}$$

$$\text{M.P.} = ₹ 240$$

23. (1) Let the C.P. be 100 and the marked price be x .

$$\therefore x \times \frac{88}{100} = 132$$

$$\Rightarrow x = \frac{132 \times 100}{88}$$

= 150 i.e., more by 50%

Aliter : Using Rule 9,

Here, $r = 12\%$

$$R = 32\%$$

Required percentage

$$= \left(\frac{r + R}{100 - r} \times 100 \right) \%$$

$$= \left(\frac{12 + 32}{100 - 12} \right) \times 100\%$$

$$= \frac{44}{88} \times 100 = 50\%$$

24. (3) C.P. of article = ₹ 100
Marked price be x

$$\therefore \frac{x \times 88}{100} = 121$$

$$\Rightarrow x = \frac{121 \times 100}{88} = ₹ 137.5$$

i.e. 37.5% above C.P.

Aliter : Using Rule 9,

Here, $r = 12\%$

$$R = 21\%$$

Required percentage

$$= \left(\frac{r + R}{100 - r} \times 100 \right) \%$$

$$= \left(\frac{12 + 21}{100 - 12} \right) \times 100\%$$

$$= \frac{33}{88} \times 100\%$$

$$= \frac{3}{8} \times 100$$

$$= \frac{300}{8} \% = 37.5\%$$

25. (1) Let the C.P. of TV be x , then

$$\frac{x \times 110}{100} = 2640 \times \frac{95}{100}$$

$$\Rightarrow x = \frac{2640 \times 95}{110} = ₹ 2280$$

Aliter : Using Rule 6,

Here, $r = 10\%$, $D = 5\%$,

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M.P. = ₹ 264000, C.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{2640}{\text{C.P.}} = \frac{100 + 10}{100 - 5}$$

$$\text{C.P.} = \frac{2640 \times 95}{110}$$

$$= 24 \times 95 = 2280$$

26. (1) If the C.P. of grinder be x , then

$$\frac{x \times 108}{100} = \frac{3600 \times 90}{100} = 3240$$

$$\Rightarrow x = \frac{3240 \times 100}{108} = ₹ 3000$$

Aliter : Using Rule 6,

M.P. = ₹ 3600, D = 10%,

$r = 8\%$, C.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{3600}{\text{C.P.}} = \frac{100 + 8}{100 - 10}$$

$$\text{C.P.} = \frac{3600 \times 90}{108}$$

$$= \frac{3600 \times 10}{12}$$

$$= ₹ 3000$$

27. (3) Let C.P. of article = ₹ 100

If the marked price of article be x , then

$$x \times \frac{75}{100} = 120$$

$$\Rightarrow x = \frac{120 \times 100}{75} = 160$$

i.e. 60% above the cost price

Aliter : Using Rule 9,

$r = 25\%$, $R = 20\%$

Required percentage

$$= \left(\frac{r + R}{100 - r} \times 100 \right) \%$$

$$= \left(\frac{25 + 20}{100 - 25} \times 100 \right) \%$$

$$= \frac{45}{75} \times 100$$

$$= 60\%$$

28. (3) If the C.P. of goods be ₹ 100, then

Marked price = ₹ 120

$$\therefore \text{S.P.} = \frac{120 \times 85}{100} = ₹ 102$$

Hence, Profit per cent = 2%

Aliter : Using Rule 8,

Here, $r = 20\%$, $r_1 = 15\%$

$$\text{Gain \%} = \frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{20 \times (100 - 15)}{100} - 15$$

$$= \frac{20 \times 85}{100} - 15$$

$$= 17 - 15 = 2\%$$

29. (4) Cost price of article = ₹ x

$$\therefore x \times \frac{140}{100} \times \frac{95}{100} = 1064$$

$$\Rightarrow x = \frac{1064 \times 100 \times 100}{140 \times 95}$$

$$= ₹ 800$$

30. (2) Present worth = 1860 - 60

$$= ₹ 1800$$

$$\text{Time} = \frac{100 \times \text{True Discount}}{\text{Present worth} \times \text{Rate}}$$

$$= \frac{100 \times 60}{1800 \times 5} = \frac{2}{3} \text{ year}$$

$$= \left(\frac{2}{3} \times 12 \right) \text{ months} = 8 \text{ months}$$

31. (4) Marked price of the article = ₹ x

$$\text{Discount} = 24 \frac{1}{2} \% = \frac{49}{2} \%$$

$$\therefore \left(100 - \frac{49}{2} \right) \% \text{ of } x = 1510$$

$$\Rightarrow x \times \left(\frac{200 - 49}{200} \right) = 1510$$

$$\Rightarrow x \times \frac{151}{200} = 1510$$

$$\Rightarrow x = \frac{1510 \times 200}{151} = ₹ 2000$$

$$\therefore \text{C.P. of article} = \frac{1510 \times 100}{90}$$

$$= ₹ \frac{15100}{9}$$

$$\therefore \text{Gain} = 2000 - \frac{15100}{9}$$

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$$= \frac{18000 - 15100}{9} = \frac{2900}{9}$$

$$= ₹ 322 \frac{2}{9}$$

32. (3) Original marked price of goods = ₹ 100

$$\text{C.P.} = \frac{100 \times 80}{100} = ₹ 80$$

Case II,

If the marked price be ₹ x , then

$$x \times \frac{80}{100}$$

$$= \frac{80 \times 125}{100}$$

$$\Rightarrow x = \frac{80 \times 125}{100} = ₹ 125$$

$$\text{Percent} = 125 - 100 = 25 \%$$

33. (3) Marked price = ₹ x and cost price = ₹ y .

$$\therefore 50\% \text{ of } x = 90\% \text{ of } y$$

$$\Rightarrow \frac{x \times 50}{100} = \frac{y \times 90}{100}$$

$$\Rightarrow y = \frac{x \times 50}{90} = ₹ \frac{5}{9} x$$

$$= \frac{5}{9} \text{ th of marked price.}$$

34. (2) Marked price

$$= ₹ (7710 + 1285)$$

$$= ₹ 8995$$

If discount = $x\%$, then

$$x\% \text{ of } 8995 = 1285$$

$$\Rightarrow \frac{8995 \times x}{100} = 1285$$

$$\Rightarrow x = \frac{1285 \times 100}{8995} = \frac{100}{7} = 14 \frac{2}{7} \%$$

35. (2) Let the marked price be ₹ x

$$\therefore x \times \frac{90}{100} = 2700$$

$$\Rightarrow x = \frac{2700 \times 100}{90} = ₹ 3000$$

36. (1) S.P. of saree

$$= (100 - 20)\% \text{ of } 200$$

$$= \frac{200 \times 80}{100} = ₹ 160$$

$$\therefore \text{C.P. of saree} = 160 - 16$$

DISCOUNT

$$= ₹ 144$$

$$\therefore \text{Profit percent} = \frac{16}{144} \times 100$$

$$= \frac{100}{9} = 11\frac{1}{9}\%$$

37. (2) C.P. of article = ₹ x
According to question,
92% of marked price

$$= \frac{115}{100} \times \text{C.P.}$$

$$\therefore \frac{250 \times 92}{100} = \frac{115x}{100}$$

$$\Rightarrow 115x = 250 \times 92$$

$$\Rightarrow x = \frac{250 \times 92}{115} = ₹ 200$$

Aliter : Using Rule 6,
Here, $r = 15\%$, $D = 8\%$,
M.P. = ₹ 250, C.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{250}{\text{C.P.}} = \frac{100 + 15}{100 - 8}$$

$$\text{C.P.} = \frac{250 \times 92}{115}$$

$$\text{C.P.} = ₹ 200$$

38. (3) Greatest possible original price will be when discount be maximum
If the price be Rs. x , then

$$\frac{75}{100} \text{ of } x = 270$$

$$\Rightarrow x = \frac{270 \times 100}{75} = \text{Rs. } 360$$

39. (3) C.P. of article = Rs. x (let)
According to the question,

$$x \times \frac{120}{100} = \frac{40 \times 90}{100}$$

$$\Rightarrow x = \frac{40 \times 90}{120} = \text{Rs. } 30$$

Aliter : Using Rule 6,
Here, $D = 10\%$, $r = 20\%$,
M.P. = Rs. 40, C.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{40}{\text{C.P.}} = \frac{100 + 20}{100 - 10}$$

$$\text{C.P.} = \frac{40 \times 90}{120}$$

$$\text{C.P.} = \text{Rs. } 30$$

40. (1) Let the C.P. of article be Rs. x and its marked price be Rs. y .
According to the question,
90% of $y = 112\%$ of x
 $\Rightarrow 90 \times y = 112 \times x$

$$\Rightarrow \frac{x}{y} = \frac{90}{112} = 45 : 56$$

41. (4) Let the marked price of article be Rs. x .
According to the question,

$$\left(100 - \frac{50}{3}\right)\% \text{ of } x = 450$$

$$\Rightarrow x \times \left(\frac{300 - 50}{3}\right)\% = 450$$

$$\Rightarrow x \times \frac{250}{300} = 450$$

$$\Rightarrow x \times \frac{5}{6} = 450$$

$$\Rightarrow x = \frac{450 \times 6}{5} = \text{Rs. } 540$$

42. (3) Let the marked price of article be Rs. x .
According to the question,
90% of $x = 120\%$ of 1900

$$\Rightarrow x \times \frac{90}{100} = \frac{900 \times 120}{100}$$

$$\Rightarrow x = \frac{900 \times 120}{90} = \text{Rs. } 1200$$

TYPE-IV

1. (3) Suppose printed price = ₹ 100
 \therefore S.P. = ₹ $(100 - 2.5) = ₹ 97.5$

$$\therefore \text{Marked Price} = \frac{100 \times 39}{97.5}$$

$$= ₹ 40$$

2. (3) Printed price = ₹ 900
On 40% discount

$$= 900 - \frac{900 \times 40}{100} = 900 - 360$$

$$\text{C.P. for retailer} = 540$$

$$\text{S.P.} = 900$$

$$\text{Profit} = 900 - 540 = 360$$

$$\text{Gain \%} = \frac{360 \times 100}{540}$$

$$= \frac{200}{3} = 66\frac{2}{3}\%$$

3. (2) Let the marked price of each pen be x
Total cost price of 40 pens = Total

marked price of 36 pens = $36x$
Selling price of 1 pen after 1% discount = $(1 - 0.01)x = 0.99x$
Selling price of 40 pens
 $= 40 \times 0.99x = 39.6x$

$$\text{Profit} = \frac{39.6 - 36}{36} \times 100$$

$$= \frac{3.6}{36} \times 100 = 10\%$$

4. (1) First discount = 20%
Price after first discount

$$= ₹ \left(1500 - \frac{20}{100} \times 1500\right)$$

$$= ₹ (1500 - 300) = ₹ 1200$$

Let the additional discount be $x\%$

$$\therefore \left(1200 - \frac{x \times 1200}{100}\right) = 1104$$

$$\Rightarrow 1200 - 12x = 1104$$

$$\Rightarrow 12x = 1200 - 1104 = 96$$

$$\Rightarrow x = \frac{96}{12} = 8\%$$

5. (3) Let the printed price of the article be ₹ 100
Discount = 40%
C.P. = ₹ $(100 - 40) = ₹ 60$
S.P. = ₹ 100

$$\therefore \text{Gain \%} = \frac{40}{60} \times 100$$

$$= \frac{200}{3} = 66\frac{2}{3}\%$$

6. (4) Discount

$$= 120 \times \frac{40}{100} = ₹ 48$$

$$\therefore \text{S.P.} = ₹ (120 - 48) = ₹ 72$$

$$\text{Loss} = 80 - 72 = ₹ 8$$

$$\therefore \text{Loss \%} = \frac{8}{80} \times 100 = 10\%$$

Aliter : Using Rule 6,
Here, C.P. = Rs. 80, M.P. =
Rs. 120, $D = 40\%$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{120}{80} = \frac{100 + r}{100 - 40}$$

$$\frac{3}{2} = \frac{100 + r}{60}$$

$$90 = 100 + r$$

$$r = -10\% \text{ (-ve sign shows loss)}$$

$$\Rightarrow \text{Loss} = 10\%$$

7. (1) Let the marked price be x

$$\therefore 86\% \text{ of } x = 387$$

$$\therefore x = \frac{387 \times 100}{86} = ₹ 450$$

Aliter : Using Rule 2,

Here, $D = 14\%$, $S.P. = ₹ 387$,

$M.P. = ?$

$$M.P. = \frac{S.P. \times 100}{100 - D}$$

$$= \frac{387 \times 100}{100 - 14}$$

$$= \frac{38700}{86} = ₹ 450$$

8. (4) $C.P. = ₹ 900$

Gain = 10%

$$\therefore S.P. = ₹ \left(\frac{110}{100} \times 900 \right) = ₹ 990$$

Let the marked price be x .

$$\therefore \frac{90}{100} x = 990$$

$$\therefore x = \frac{990 \times 100}{90} = ₹ 1100$$

Aliter : Using Rule 6,

Here, $D = 10\%$, $C.P. = ₹ 900$,

$R = 10\%$, $M.P. = ?$

$$\frac{M.P.}{C.P.} = \frac{100 + r}{100 - D}$$

$$\frac{M.P.}{900} = \frac{100 + 10}{100 - 10}$$

$$M.P. = \frac{110}{90} \times 900$$

$$M.P. = ₹ 1100$$

9. (3) Let the $C.P.$ of each article be ₹ 1

For 15 books, the tradesman gives 1 book free.

$$\therefore C.P. \text{ of 15 books} = ₹ 16$$

$$\therefore S.P. \text{ of 15 books}$$

$$= 16 \times \frac{135}{100} = ₹ \frac{108}{5}$$

$$\therefore S.P. \text{ of 1 book} = \frac{108}{5 \times 15}$$

$$= ₹ \frac{36}{25}$$

$$\text{Now, } 96\% \text{ of marked price} = \frac{36}{25}$$

$$\therefore \text{Marked price} = \frac{36 \times 100}{25 \times 96} = \frac{3}{2}$$

$$= ₹ 1.5$$

\therefore The required % increase

$$= \frac{0.5}{1} \times 100 = 50\%$$

10. (3) Discount on ₹ 36000

$$= \frac{36000 \times 7}{100} = ₹ 2520$$

Discount on first ₹ 20,000

$$= \frac{20000 \times 8}{100} = ₹ 1600$$

Discount on next ₹ 10,000

$$= \frac{10,000 \times 5}{100} = ₹ 500$$

\therefore Discount on remaining ₹ 6,000

$$= 2520 - (1600 + 500) = ₹ 420$$

\therefore Required percent

$$= \frac{420 \times 100}{6000} = 7\%$$

11. (1) Let the $C.P.$ be ₹ 100

\therefore Marked price = ₹ 125

$S.P. = 8\%$ of 125

$$= \frac{84 \times 125}{100} = ₹ 105$$

\therefore Profit = ₹ $(105 - 100) = ₹ 5$

\therefore Profit % = 5%

12. (1) Let the marked price of the shirt be Rs. x .

According to the question,

$$x \times \frac{20}{100} = 150$$

$$\Rightarrow x = \frac{150 \times 100}{20} = 750$$

\therefore Price paid = ₹ $(750 - 150)$

$$= ₹ 600$$

13. (3) CP of the article for Ravi

$$= 660 \times \frac{100}{110} = ₹ 600$$

Ravi bought the article at the discount of 25%

$$\therefore 75\% \text{ of marked price} = ₹ 600$$

$$\text{Marked price} = \frac{600 \times 100}{75} = ₹ 800$$

14. (1) Let the marked price of the article be x .

Equivalent discount for successive discounts of 30% and 20%

$$= \left(30 + 20 - \frac{30 \times 20}{100} \right) \%$$

$$= (50 - 6)\% = 44\%$$

$$\Rightarrow (100 - 44)\% \text{ of } x = 2240$$

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$$\Rightarrow \frac{x \times 56}{100} = 2240$$

$$\Rightarrow x = \frac{2240 \times 100}{56} = ₹ 4000$$

15. (4) Let the market price of the cooler be x ,

According to the question,

$$(12 - 10)\% \text{ of } x = 35$$

$$\Rightarrow \frac{x \times 2}{100} = 35$$

$$\Rightarrow x = \frac{3500}{2} = ₹ 1750$$

16. (1) Let the CP of article be x and its marked price be y .

According to the question,

$$90\% \text{ of } y = 115\% \text{ of } x$$

$$\Rightarrow \frac{y \times 90}{100} = \frac{x \times 115}{100}$$

$$\Rightarrow \frac{x}{y} = \frac{90}{115} = \frac{18}{23} \Rightarrow 18:23$$

Aliter : Using Rule 6,

Here, $r = 15\%$, $D = 10\%$

$$\frac{M.P.}{C.P.} = \frac{100 + r}{100 - D}$$

$$= \frac{100 + 15}{100 - 10}$$

$$\frac{M.P.}{C.P.} = \frac{115}{90}$$

$$\frac{C.P.}{M.P.} = \frac{90}{115}$$

$$\frac{C.P.}{M.P.} = \frac{18}{23}$$

$$\Rightarrow C.P. : M.P. = 18 : 23$$

17. (1) Let the marked price of the shirt be x .

Difference of discounts = 2%

$$\therefore 2\% \text{ of } x = 15$$

$$\Rightarrow \frac{x \times 2}{100} = 15$$

$$\Rightarrow x = \frac{15 \times 100}{2} = ₹ 750$$

18. (2) If the marked price of the article be x , then

$$96\% \text{ of } x = 1920$$

$$\Rightarrow \frac{x \times 96}{100} = 1920$$

$$\Rightarrow x = \frac{1920 \times 100}{96} = ₹ 2000$$

DISCOUNT

Aliter : Using Rule 2,

$$\text{S.P.} = ₹ 1920$$

$$D = 4\%$$

$$\text{M.P.} = ?$$

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$= \frac{1920 \times 100}{100 - 4}$$

$$= \frac{1920 \times 100}{96} = ₹ 2000$$

19. (1) Discount = 650 - 572 = ₹ 78

If the discount be $x\%$ then

$$\frac{650 \times x}{100} = 78$$

$$\Rightarrow x = \frac{78 \times 100}{650} = 12\%$$

Aliter : Using Rule 1,

Here, M.P. = ₹ 650

S.P. = ₹ 572

$$\text{Discount \%} = \frac{\text{M.P.} - \text{S.P.}}{\text{M.P.}} \times 100$$

$$= \frac{650 - 572}{650} \times 100$$

$$= \frac{7800}{650} = 12\%$$

20. (1) Let marked price of article = ₹ 100

∴ C.P. of article = ₹ 64

∴ S.P. of article = ₹ 88

∴ Profit per cent

$$= \frac{88 - 64}{64} \times 100 = 37.5\%$$

21. (3) Let the marked price of watch be x .

$$\frac{x \times 95}{100} - \frac{x \times 94}{100} = 15$$

$$\Rightarrow x = 15 \times 100 = ₹ 1500$$

22. (3) Discount = 15%

SP of racket = 85% of ₹ 30

= ₹ 25.50

One shuttle cock of ₹ 1.50 is free.

∴ Actual SP

= ₹ (25.50 - 1.50) = ₹ 24

He still gains 20%

$$\therefore \text{CP} = \frac{100}{120} \times 24 = ₹ 20$$

23. (3) Let the marked price of the article be x

According to the question,

96% of $x = 120\%$ of 100

$$\Rightarrow x \times \frac{96}{100} = \frac{100 \times 120}{100}$$

$$\Rightarrow x = \frac{100 \times 120}{96} = ₹ 125$$

Aliter : Using Rule 6,

Here, $r = 20\%$, $D = 4\%$,

C.P. = ₹ 100, M.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{\text{M.P.}}{100} = \frac{100 + 20}{100 - 4}$$

$$\text{M.P.} = \frac{120 \times 100}{96}$$

$$= \frac{1000}{8}$$

$$\text{M.P.} = ₹ 125$$

24. (1) Let the marked price be x .

$$\therefore \frac{x \times 85}{100} = 629$$

$$\Rightarrow x = \frac{629 \times 100}{85} = ₹ 740$$

Aliter : Using Rule 2,

M.P. = ?, S.P. = ₹ 629,

$D = 15\%$

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$= \frac{629 \times 100}{100 - 15}$$

$$= \frac{62900}{85} = ₹ 740$$

25. (1) Let the cost price of toy be ₹ 100 and the marked price be x .

$$\therefore \frac{x \times 90}{100} = 120$$

$$\Rightarrow x = \frac{120 \times 100}{90} = ₹ \frac{400}{3}$$

S.P. after a discount of 20%

$$= 80\% \text{ of } \frac{400}{3}$$

$$= \frac{400 \times 80}{300} = \frac{320}{3} = 106 \frac{2}{3}$$

∴ Profit percent

$$= 106 \frac{2}{3} - 100 = 6 \frac{2}{3}\%$$

26. (3) If the marked price of article be x , then

$$\frac{x \times 76}{100} = 342$$

$$\Rightarrow x = \frac{342 \times 100}{76} = ₹ 450$$

Aliter : Using Rule 2,

Here, $D = 24\%$, S.P. = ₹ 342,

M.P. = ?

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$= \frac{342 \times 100}{100 - 24}$$

$$= \frac{34200}{76} = ₹ 450$$

27. (4) If the marked price of T.V. be x , then,

$$\frac{x \times 5}{100} = 500$$

$$\Rightarrow x = \frac{500 \times 100}{5}$$

$$= ₹ 10000$$

∴ Initial S.P. of T.V.

$$= \frac{10000 \times 80}{100} = ₹ 8000$$

28. (2) Let marked price of toy be x

$$\therefore \text{S.P.} = x \times \frac{77}{100} = \frac{77x}{100}$$

$$\text{C.P.} = x \times \frac{77}{100} \times \frac{100}{110} = \frac{7x}{10}$$

$$\therefore \frac{77x}{100} - \frac{7x}{10} = 56$$

$$\Rightarrow \frac{7x}{100} = 56$$

$$\Rightarrow x = \frac{100 \times 56}{7} = ₹ 800$$

29. (1) Let the amount paid (s.p.) be x

∴ 16% of $x = 80$

$$\Rightarrow x = \frac{80}{16} \times 100$$

$$\therefore x = ₹ 500$$

30. (3) Marked price

$$= \frac{100}{100 - 12} \times 880 = ₹ 1000$$

Aliter : Using Rule 2,

Here, S.P. = ₹ 880, $D = 12\%$,

M.P. = ?

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$= \frac{880 \times 100}{100 - 12} = ₹ 1000$$

DISCOUNT

31. (1) Marked price

$$= \frac{846 \times 100}{94} = ₹ 900$$

32. (1) Difference of discounts

$$= \left(25 - \frac{50}{3}\right)\% = \frac{25}{3}\%$$

Let the marked price be x , then

$$x \times \frac{25}{300} = 600$$

$$\Rightarrow x = ₹ 7200$$

∴ Required S.P.

$$= 7200 \times \left(100 - \frac{50}{3}\right)\%$$

$$= \frac{7200 \times 250}{300} = ₹ 6000$$

33. (3) Marked price

$$= \frac{100}{(100 - 7.5)} \times 740$$

$$= \frac{740 \times 100}{92.5} = ₹ 800$$

Aliter : Using Rule 2,

Here, S.P. = ₹ 740, D = 7.5%,
M.P. = ?

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$= \frac{740 \times 100}{100 - 7.5}$$

$$= \frac{74000}{92.5}$$

$$\text{M.P.} = ₹ 800$$

34. (3) S.P. of the fan = $\frac{150 \times 80}{100}$

$$= ₹ 120$$

Aliter : Using Rule 2,

M.P. = ₹ 150, D = 20%, S.P. = ?

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$150 = \frac{\text{S.P.} \times 100}{100 - 20}$$

$$\text{S.P.} = \frac{150 \times 80}{100}$$

$$\text{S.P.} = ₹ 120$$

35. (3) Discount = 6000 - 5500

$$= ₹ 500$$

If discount = $x\%$, then

$$\frac{6000 \times x}{100} = 500$$

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$$\Rightarrow x = \frac{500}{60} = \frac{25}{3} = 8\frac{1}{3}\%$$

Aliter : Using Rule 1,

M.P. = ₹ 6000

S.P. = ₹ 5500

$$\text{Discount \%} = \frac{\text{M.P.} - \text{S.P.}}{\text{M.P.}} \times 100$$

$$= \frac{6000 - 5500}{6000} \times 100$$

$$= \frac{500 \times 100}{6000}$$

$$= 8\frac{1}{3}\%$$

36. (3) Marked price

$$= \frac{6580 \times 100}{70} = ₹ 9400$$

Aliter : Using Rule 2,

D = 30%, S.P. = 6580,

M.P. = ?

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$= \frac{6580 \times 100}{100 - 30}$$

$$= \frac{658000}{70} = ₹ 9400$$

37. (4) Using Rule 1,

Discount = 800 - 736 = ₹ 64

∴ Discount percent

$$= \frac{64}{800} \times 100 = 8\%$$

38. (2) Using Rule 1,

Required discount

$$= \frac{475 \times 15}{100} = ₹ 71.25$$

39. (3) Price after discount of 10%

$$= \frac{6800 \times 90}{100} = ₹ 6120$$

If the seasonal discount be $x\%$, then

$$\frac{6120 \times x}{100} = 6120 - 5202 = 918$$

$$\Rightarrow x = \frac{918 \times 100}{6120} = 15\%$$

40. (3) Marked price of the article = ₹ x .

$$\therefore \frac{x \times 90}{100} = \frac{360 \times 125}{100}$$

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$$\Rightarrow \frac{9x}{10} = 90 \times 5$$

$$\Rightarrow x = \frac{90 \times 5 \times 10}{9} = ₹ 500$$

Aliter : Using Rule 6,

C.P. = ₹ 360

$r = 25\%$, $D = 10\%$, M.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{\text{M.P.}}{360} = \frac{100 + 25}{100 - 10}$$

$$\text{M.P.} = \frac{125 \times 360}{90}$$

$$\text{M.P.} = ₹ 500$$

41. (2) Rate of discount = $x\%$

$$\therefore 1200 \times \frac{x}{100} = 1200 - 1100$$

$$\Rightarrow 12x = 100$$

$$\Rightarrow x = \frac{100}{12} = \frac{25}{3} = 8\frac{1}{3}\%$$

Aliter : Using Rule 1,

Here, M.P. = ₹ 1200,

S.P. = ₹ 1100

$$\text{Discount \%} = \frac{\text{M.P.} - \text{S.P.}}{\text{M.P.}} \times 100$$

$$= \frac{1200 - 1100}{1200} \times 100$$

$$= \frac{100 \times 100}{1200} = 8\frac{1}{3}\%$$

42. (4) C.P. of item = ₹ 100 (let)

∴ Marked price of item = ₹ 200

S.P. for a gain of 15% = ₹ 115

∴ Discount = 200 - 115 = ₹ 85

If discount percent be $x\%$, then

$$\frac{200 \times x}{100} = 85$$

$$\Rightarrow 2x = 85 \Rightarrow x = \frac{85}{2} = 42.5\%$$

Aliter : Using Rule 6,

Let, C.P. = ₹ x ,

M.P. = ₹ $2x$, $r = 15\%$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{2x}{x} = \frac{100 + 15}{100 - D}$$

$$200 - 2D = 115$$

$$2D = 85$$

$$D = 42.5\%$$

DISCOUNT

43. (2) Discount = 270 - 237.60

$$= \text{Rs. } 32.4$$

If the rate of discount be $x\%$, then

$$270 \times \frac{x}{100} = 32.4$$

$$\Rightarrow x = \frac{32.4 \times 100}{270} = 12\%$$

Aliter : Using Rule 1,

Here, S.P. = Rs. 237.60,

M.P. = Rs. 270

Discount %

$$= \frac{\text{M.P.} - \text{S.P.}}{\text{M.P.}} \times 100\%$$

$$= \frac{270 - 237.60}{270} \times 100\%$$

$$= \frac{32.40 \times 100}{270} \%$$

$$= 12\%$$

44. (2) Let the marked price of article be Rs. x

According to the question,

$$\frac{x \times 75}{100} = \frac{1440 \times 125}{100}$$

$$\Rightarrow x = \frac{1440 \times 125}{75} = \text{Rs. } 2400$$

Aliter : Using Rule 6,

Here, $D = 25\%$, $r = 25\%$, C.P. = Rs. 1440, M.P. = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{\text{M.P.}}{1440} = \frac{100 + 25}{100 - 25}$$

$$\text{M.P.} = \frac{125 \times 1440}{75}$$

$$= \text{Rs. } 2400$$

45. (4) Marked price = Rs. 720

Discount = 10%

\therefore After a discount of 10%,

$$\text{S.P.} = \text{Rs. } \left(\frac{720 \times 90}{100} \right)$$

$$= \text{Rs. } 648$$

Final S.P. = Rs. 550.80

\therefore Discount = Rs. (648 - 550.80)

= Rs. 97.2

If the second discount be $x\%$, then

$$\frac{648 \times x}{100} = 97.2$$

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$$\Rightarrow x = \frac{97.2 \times 100}{648} = 15\%$$

Aliter : Using Rule 3,

S.P. = Rs. 550.80, M.P. = Rs. 720

$D_1 = 10\%$, $D_2 = ?$

$$\text{S.P.} = \text{M.P.} \left(\frac{100 - D_1}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$550.80 = 720 \left(\frac{100 - 10}{100} \right) \left(\frac{100 - D_2}{100} \right)$$

$$\frac{550.80 \times 100 \times 100}{720 \times 90}$$

$$= 100 - D_2$$

$$85 = 100 - D_2$$

$$D_2 = 100 - 85$$

$$D_2 = 15\%$$

46. (3) C.P. of article = Rs. x (let).

According to the question,

$$\frac{x \times 75}{100} = 3600$$

$$\Rightarrow x = \frac{3600 \times 100}{75} = \text{Rs. } 4800$$

Aliter : Using Rule 2,

Here, S.P. = Rs. 3600

$D = 25\%$

M.P. = ?

$$\text{M.P.} = \frac{\text{SP} \times 100}{100 - D}$$

$$\text{M.P.} = \frac{3600 \times 100}{100 - 25}$$

$$\text{M.P.} = \frac{360000}{75}$$

$$= \text{M.P.} = \text{Rs. } 4800$$

47. (2) Rate of discount = 12%

\therefore S.P. of TV set

= 6500 \times (100 - 12)%

$$= \frac{6500 \times 88}{100} = \text{Rs. } 5720$$

Aliter : Using Rule 2,

Here, $D = 12\%$,

M.P. = Rs. 6500, S.P. = ?

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$6500 = \frac{\text{S.P.} \times 100}{100 - 12}$$

$$\text{S.P.} = \frac{6500 \times 88}{100}$$

$$\text{S.P.} = \text{Rs. } 5720$$

48. (2) S.P. of TV set

$$= \text{Rs. } \left(\frac{120}{20} \times 750 \right)$$

$$= \text{Rs. } 4500$$

If the marked price be Rs. x , then

$$\frac{x \times 90}{100} = 4500$$

$$\Rightarrow x = \frac{4500 \times 100}{90}$$

$$= \text{Rs. } 5000$$

49. (3) Let the C.P. of each article be Rs. 100.

\therefore Marked price = Rs. 125

On giving discount,

S.P. = Rs. 112.5

\therefore Discount

$$= 125 - 112.5 = \text{Rs. } 12.5$$

$$\text{i.e., } 12 \frac{1}{2} \%$$

50. (2) Let the marked price of radio be Rs. x .

According to the question,

80% of $x = 1200$

$$\Rightarrow \frac{x \times 80}{100} = 1200$$

$$\Rightarrow x = \frac{1200 \times 100}{80} = \text{Rs. } 1500$$

Aliter : Using Rule 2,

Here, $D = 20\%$,

S.P. = Rs. 1200, M.P. = ?

$$\text{M.P.} = \frac{\text{S.P.} \times 100}{100 - D}$$

$$= \frac{1200 \times 100}{100 - 20}$$

$$\text{M.P.} = \frac{120000}{80}$$

$$\text{M.P.} = \text{Rs. } 1500$$

51. (2) Marked price = Rs. 250

S.P. = Rs. 225

Discount = 250 - 225 = Rs. 25

If the rate of discount be $x\%$, then

$$\frac{250 \times x}{100} = 25$$

$$\Rightarrow x = \frac{25 \times 100}{250} = 10\%$$

Aliter : Using Rule 1,

Here, M.P. = Rs. 250,

S.P. = Rs. 225

$$\text{Discount \%} = \frac{\text{M.P.} - \text{S.P.}}{\text{M.P.}} \times 100\%$$

$$= \frac{250 - 225}{250} \times 100\%$$

$$= 10\%$$

52. (3) Let the C.P. of article be Rs. 100.

$$\therefore \text{Marked price} = \text{Rs. } 130$$

$$\text{S.P.} = \frac{130 \times 90}{100} = \text{Rs. } 117$$

$$\therefore \text{Profit\%} = 17\%$$

OR

Required profit percent

$$= \left(x + y + \frac{xy}{100} \right) \%$$

$$= \left(30 - 10 - \frac{30 \times 10}{100} \right) \% = 17\%$$

Aliter : Using Rule 8,

$$\text{Here, } r = 30\%$$

$$r_1 = 10\%$$

$$\text{Profit \%} =$$

$$\frac{r \times (100 - r_1)}{100} - r_1$$

$$= \frac{30 \times (100 - 10)}{100} - 10$$

$$= \frac{30 \times 90}{100} - 10 = 17\%$$

53. (3) Let the marked price of article be Rs. x .

According to the question,

$$x \times \frac{80}{100} = 740$$

$$\Rightarrow x = \text{Rs. } \left(\frac{740 \times 100}{80} \right)$$

$$= \text{Rs. } 925$$

54. (2) Let the marked price of the shirt be Rs. x .

According to the question,
(100 - 15)% of $x = 119$

$$\Rightarrow x \times \frac{85}{100} = 119$$

$$\Rightarrow x = \frac{119 \times 100}{85} = \text{Rs. } 140$$

55. (3) Discount on marked price

$$= \text{Rs. } \left(\frac{3600 \times 2.5}{100} \right) = \text{Rs. } 90$$

$$\therefore \text{S.P. of cycle}$$

$$= \text{Rs. } (3600 - 90)$$

$$= \text{Rs. } 3510$$

56. (3) Let the C.P. of article be Rs. 100.

\therefore Its marked price = Rs. 110
S.P. after a discount of 10%

$$= \text{Rs. } \left(\frac{110 \times 90}{100} \right)$$

$$= \text{Rs. } 99$$

$$\therefore \text{Loss} = \text{Rs. } (100 - 99)$$

$$= \text{Rs. } 1 \text{ i.e., } 1\%$$

57. (4) Marked price of shirt

$$= \text{Rs. } (576 + 109)$$

$$= \text{Rs. } 685$$

Let the rate of discount be $x\%$.

$$\therefore x\% \text{ of } 685 = 109$$

$$\Rightarrow \frac{685 \times x}{100} = 109$$

$$\Rightarrow x = \frac{109 \times 100}{685} = 16\%$$

58. (1) Let the C.P. of article be Rs. 100 and the marked price be Rs. x .

According to the question,

$$95\% \text{ of } x = \frac{100 \times 133}{100}$$

$$\Rightarrow \frac{x \times 95}{100} = 133$$

$$\Rightarrow x = \frac{133 \times 100}{95} = \text{Rs. } 140 \text{ i.e.,}$$

40% above than C.P.

59. (3) S.P. of ceiling fan

$$= (100 - 5)\% \text{ of Rs. } 1200$$

$$= \text{Rs. } \left(\frac{1200 \times 95}{100} \right)$$

$$= \text{Rs. } 1140$$

60. (2) Let the marked price of article be Rs. x .

According to the question,

$$x \times (100 - 86)\% = 42$$

$$\Rightarrow \frac{x \times 14}{100} = 42$$

$$\Rightarrow x = \frac{42 \times 100}{14} = \text{Rs. } 300$$

61. (3) Let the marked price of watch be Rs. x .

According to the question,

$$(7 - 5)\% \text{ of } x = 15$$

$$\Rightarrow \frac{x \times 2}{100} = 15$$

$$\Rightarrow x = \frac{15 \times 100}{2} = \text{Rs. } 750$$

62. (1) Let the marked price of article be Rs. x .

According to the question,

$$x \times \frac{80}{100} = \frac{200 \times 120}{100}$$

$$\Rightarrow x = \text{Rs. } \left(\frac{200 \times 120}{80} \right) = \text{Rs. } 300$$

63. (2) Let the marked price of article be Rs. x and the C.P. be Rs. 100.

According to the question,
(100 - 32)% of $x = 100$

$$\Rightarrow \frac{x \times 68}{100} = 100$$

$$\Rightarrow x \times 68 = 100 \times 100$$

$$\Rightarrow x = \frac{100 \times 100}{68} = \frac{2500}{17}$$

$$= \text{Rs. } 147.05$$

i.e., 47.05% above the cost price.

64. (3) Discount = Rs. (1200 - 960) = Rs. 240

If the rate of discount be $x\%$, then
 $x\%$ of 1200 = 240

$$\Rightarrow \frac{1200 \times x}{100} = 240$$

$$\Rightarrow 12x = 240$$

$$\Rightarrow x = \frac{240}{12} = 20\%$$

65. (2) Let the marked price of camera be Rs. x .

According to the question,

$$(100 - 10)\% \text{ of } x = 120\% \text{ of } 600$$

$$\Rightarrow x \times 90 = 600 \times 120$$

$$\Rightarrow x = \frac{600 \times 120}{90} = \text{Rs. } 800$$

66. (3) Discount

$$= \text{Rs. } (30000 - 28000)$$

$$= \text{Rs. } 2000$$

If the rate of discount be $x\%$, then

$$30000 \times \frac{x}{100} = 2000$$

$$\Rightarrow 300x = 2000$$

$$\Rightarrow x = \frac{2000}{300} = \frac{20}{3} = 6\frac{2}{3}\%$$

67. (4) Let the original price of item be Rs. 100.

$$\text{C.P. for Peter} = \text{Rs. } 80$$

$$\text{S.P. for Peter} = \text{Rs. } \left(\frac{80 \times 140}{100} \right)$$

$$= \text{Rs. } 112$$

\therefore Required per cent

$$= \frac{(112 - 100) \times 100}{100} = 12\%$$

TYPE-V

1. (4) Check through options

$$15\% \text{ of } 80 = \frac{80 \times 15}{100} = 12$$

$$\text{and } 20\% \text{ of } 60 = \frac{60 \times 20}{100} = ₹ 12$$

Therefore, 15% of 80 and 20% of 60 are same. Hence the cost prices should be ₹ 80 and ₹ 60.

2. (3) Let the salesman's total sales be ₹ (10000 + x)

According to the question,

$$10000 \times \frac{11}{2}\% + x \times 6\% = 1990$$

$$\Rightarrow 5000 \times 11\% + 6x\% = 1990$$

$$\Rightarrow 5000 \times 11 + 6x = 199000$$

$$\Rightarrow 6x = 199000 - 55000$$

$$\Rightarrow 6x = 144000$$

$$\Rightarrow x = \frac{144000}{6} = 24000$$

∴ The required sales

$$= 24000 + 10000 = ₹ 34,000$$

3. (2) The housewife spends ₹ 25 and saves ₹ 2.50.

i.e., She pays ₹ 25 for a dress of ₹ 27.50.

∴ % Saving

$$= \frac{2.50}{27.50} \times 100 \approx 9\% (\text{app.})$$

4. (1) Let the C.P. of total goods be ₹ 100.

∴ Marked price = ₹ 120

$$\text{S.P. of } \frac{1}{2} \text{ stock} = ₹ 60$$

$$\text{Gain} = ₹ 10$$

$$\text{S.P. of } \frac{1}{4} \text{ stock}$$

$$= (80\% \text{ of } 120) \times \frac{1}{4} = ₹ 24$$

$$\therefore \text{Loss} = ₹ (25 - 24) = ₹ 1$$

$$\text{S.P. of remaining } \frac{1}{4} \text{ stock}$$

$$= (60\% \text{ of } 120) \times \frac{1}{4} = ₹ 18$$

$$\therefore \text{Loss} = ₹ (25 - 18) = ₹ 7$$

$$\therefore \text{Gain} = 10 - 1 - 7$$

$$= ₹ 2 \text{ i.e., } 2\%$$

5. (1) After a discount of 20%,
-
- Listed price = 80% of ₹1500

$$= ₹ \left(1500 \times \frac{80}{100} \right) = ₹ 1200$$

Difference

$$= ₹ (1200 - 1104) = ₹ 96$$

$$\text{Let } x\% \text{ of } 1200 = 96$$

$$\Rightarrow x = \frac{96 \times 100}{1200} = 8$$

∴ Second discount = 8%

6. (4) Let the marked price of the radio be
- x
- .

According to the question,

$$x \times \frac{80}{100} \times \frac{88}{100} = 704$$

$$\therefore x = \frac{704 \times 100 \times 100}{80 \times 88} = ₹ 1000$$

7. (2) Using Rule 5,
-
- Equivalent discount

$$= \left(20 + 5 - \frac{20 \times 5}{100} \right) \% = 24\%$$

∴ CP of article

$$= ₹ \left(25000 \times \frac{76}{100} \right) = ₹ 19000$$

Repairs cost = ₹ 1000

$$\therefore \text{Actual CP} = 19000 + 1000$$

$$= ₹ 20000$$

$$\text{SP} = ₹ 25000$$

$$\text{Profit} = 25000 - 20000 = ₹ 5000$$

∴ Gain%

$$= \frac{5000}{20000} \times 100 = 25\%$$

8. (3) Let the marked price of shirt be
- x
- and that of trousers be
- $2x$
- . Let the discount on the trousers be
- $y\%$
- . Then,

$$x \times \frac{40}{100} + 2x \times \frac{y}{100} = 3x \times \frac{30}{100}$$

$$\Rightarrow 40x + 2xy = 90x$$

$$\Rightarrow 2y = 90 - 40$$

$$\Rightarrow y = \frac{50}{2} = 25\%$$

9. (3) Let the marked price of the grinder be ₹100

SP after a discount of 15%

$$= ₹ 85$$

$$\text{SP to gain } 15\% = \frac{85 \times 115}{100}$$

$$= ₹ 97.75$$

If ₹ 97.75 is the SP, the marked price = ₹ 100

∴ If ₹ 1955 is the SP, the marked

$$\text{price} = \frac{100}{97.75} \times 1955 = ₹ 2000$$

Amount of discount received by the retailer = 15% of 2000

$$= \frac{2000 \times 15}{100} = ₹ 300$$

10. (1) SP of 12 pairs of socks
-
- = 90% of 80

$$= \frac{80 \times 90}{100} = \text{Rs. } 72 = ₹ 72$$

∴ Number of pairs bought for ₹

$$24 = \frac{12 \times 24}{72} = 4$$

11. (3) Let the amount of the bill be
- x
- .

$$\frac{4x}{100} = 13$$

$$\Rightarrow x = \frac{1300}{4} = ₹ 325$$

12. (2) True discount

$$= \frac{\text{Amount} \times R \times T}{100 + (R \times T)}$$

$$\Rightarrow 15 = \frac{A \times 5 \times 2}{100 + 10}$$

$$\Rightarrow A = 11 \times 15 = ₹ 165$$

13. (3) Let the S.P. be
- x
- (without tax).

$$\therefore x + x \times \frac{10}{100} = 500$$

$$\Rightarrow \frac{11x}{10} = 500 \Rightarrow x = ₹ \frac{5000}{11}$$

$$\therefore \text{Discount} = 500 - \frac{5000}{11}$$

$$= \frac{500}{11}$$

Discount per cent

$$= \frac{500}{11 \times 500} \times 100$$

$$= \frac{100}{11} \% \text{ or } 9 \frac{1}{11} \%$$

14. (4) Using Rule 5,

Let the original S.P. of sugar be x per kg.

S.P. after discount

$$= ₹ \frac{95x}{100} \text{ per kg}$$

$$= ₹ \frac{19x}{20} \text{ per kg}$$

$$\therefore \frac{608}{\frac{19x}{20}} - \frac{608}{x} = 2$$

$$\Rightarrow 608 \left(\frac{20}{19x} - \frac{1}{x} \right) = 2$$

$$\Rightarrow \frac{608}{19x} = 2 \Rightarrow x = \frac{608}{19 \times 2} = ₹ 16$$

15. (3) Single equivalent discount

$$= \left(50 + 40 - \frac{50 \times 40}{100} \right) \%$$

$$= 70\%$$

\(\therefore\) Required price of shirt

$$= 30\% \text{ of } x$$

16. (4) Total actual C.P.

$$= ₹ (500 \times 10 + 2000) = ₹ 7000$$

Total S.P.

$$= ₹ (5 \times 750 + 5 \times 550)$$

$$= ₹ (3750 + 2750) = ₹ 6500$$

$$\text{Loss} = 7000 - 6500 = ₹ 500$$

Loss percent

$$= \frac{500}{7000} \times 100 = \frac{50}{7} = 7\frac{1}{7}\%$$

17. (3) Marked price of the fan

$$= ₹ 1400$$

SP after allowing a discount of

$$10\% = 90\% \text{ of } 1400$$

$$= \frac{1400 \times 90}{100} = ₹ 1260$$

Second discount

$$= ₹ (1260 - 1200) = ₹ 60$$

Let the second discount be $x\%$.

$$\therefore x\% \text{ of } 1260 = 60$$

$$\Rightarrow x = \frac{60 \times 100}{1260} = \frac{100}{21} = 4\frac{16}{21}\%$$

18. (4) True discount

$$= \frac{\text{Banker's discount} \times 100}{100 + \text{Rate} \times \text{Time}}$$

$$= \frac{216 \times 100}{100 + 16 \times \frac{6}{12}}$$

$$= \frac{216 \times 100}{108} = ₹ 200$$

19. (4) Marked price of tape recorder

$$= \frac{1500 \times 120}{100} = ₹ 1800$$

$$\text{Gain} = \frac{1500 \times 8}{100} = ₹ 120$$

$$\text{Discount} = 1800 - (1500 + 120)$$

$$= ₹ 180$$

Let Discount per cent = $x\%$, then

$$\frac{1800 \times x}{100} = 180 \Rightarrow x = 10\%$$

Method 2 :

Quicker Method

If the discount be $x\%$, then

$$20 - x - \frac{20x}{100} = 8$$

$$\Rightarrow 20 - \frac{6x}{5} = 8$$

$$\Rightarrow \frac{6x}{5} = 20 - 8 = 12$$

$$\Rightarrow x = \frac{12 \times 5}{6} = 10\%$$

20. (3) Required S.P.

$$= 250 \times \frac{90}{100} \times \frac{88}{100} = ₹ 198$$

21. (1) Sum

$$= \frac{\text{S.I.} \times \text{True discount}}{\text{S.I.} - \text{True discount}}$$

$$= \frac{22 \times 20}{22 - 20} = ₹ 220$$

22. (2) Price after discount of 10%

$$= \frac{1500 \times 90}{100} = ₹ 1350$$

Second discount

$$= 1350 - 1242 = ₹ 108$$

If the rate of second discount be

$x\%$ then,

$$\frac{1350 \times x}{100} = 108$$

$$\Rightarrow x = \frac{108 \times 100}{1350} = 8\%$$

23. (2) Let original price of rice

$$= x / \text{kg}$$

$$\text{New price} = \frac{4x}{5} \text{ per kg}$$

$$\therefore \frac{800}{\frac{4x}{5}} - \frac{800}{x} = 12.5$$

$$\Rightarrow 800 \left(\frac{5}{4x} - \frac{1}{x} \right) = 12.5$$

$$\Rightarrow 800 \left(\frac{5 - 4}{4x} \right) = 12.5$$

$$\Rightarrow \frac{800}{4x} = 12.5$$

$$\Rightarrow x = \frac{200}{12.5} = ₹ 16/\text{kg}$$

24. (2) Original price of article be x/kg .

$$\text{New price} = \frac{9x}{10} / \text{kg}$$

$$\therefore \frac{225}{\frac{9x}{10}} - \frac{225}{x} = 25$$

$$\Rightarrow \frac{225 \times 10}{9x} - \frac{225}{x} = 25$$

$$\Rightarrow \frac{250}{x} - \frac{225}{x} = 25$$

$$\Rightarrow \frac{25}{x} = 25 \Rightarrow x = ₹ 1/\text{kg}$$

25. (1) Let the marked price be x and cost price be ₹ 100, then

$$\frac{x \times 75}{100} = 125$$

$$\Rightarrow x = \frac{125 \times 100}{75} = ₹ \frac{500}{3}$$

S.P. after a discount of 10%

$$= \frac{500}{3} \times \frac{90}{100} = ₹ 150$$

\(\therefore\) Gain per cent = 50%

Aliter : Using Rule 6,

Here, $r = 25\%$, $D = 25\%$.

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + 25}{100 - 25}$$

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{125}{75} = \frac{5}{3}$$

Now, $D = 10\%$

Profit = ?

$$\frac{\text{M.P.}}{\text{C.P.}} = \frac{100 + r}{100 - D}$$

$$\frac{5}{3} = \frac{100 + r}{100 - 10}$$

$$100 + r = \frac{5}{3} \times 90$$

$$r = 150 - 100$$

$$r = 50\%$$

DISCOUNT

26. (1) Single equivalent discount for successive discounts of 8% and 8%

$$= \left(8 + 8 - \frac{8 \times 8}{100}\right)\%$$

$$= (16 - 0.64)\%$$

$$\therefore \text{Difference} = 0.64\%$$

$$\therefore \text{Loss} = 400 \times 0.64\%$$

Amount he will lose

$$= \frac{400 \times 64}{100 \times 100} = ₹ 2.56$$

27. (4) If the rate of discount be $x\%$, then

$$\frac{60 \times x}{100} = 60 - 45 = 15$$

$$\Rightarrow x = \frac{15 \times 100}{60} = 25\%$$

Aliter : Using Rule 1.

$$\text{M.P.} = ₹ 60$$

$$\text{S.P.} = ₹ 45$$

$$\text{Discount \%} = \frac{\text{M.P.} - \text{S.P.}}{\text{M.P.}} \times 100$$

$$\text{Discount \%} = \frac{60 - 45}{60} \times 100$$

$$= \frac{15}{60} \times 100 = 25\%$$

28. (1) Let the rate of second discount be $x\%$

After 15% discount,

$$\text{Price of pen} = \frac{85}{100} \times 12 = ₹ 10.20$$

$$\text{Now, } 10.20 - 8.16 = ₹ 2.04$$

It is second discount.

$$\therefore \frac{x}{100} \times 10.20 = 2.04$$

$$\Rightarrow 10.2x = 204$$

$$\Rightarrow x = \frac{204}{10.2} = 20\%$$

29. (3) $\therefore 20\% \equiv ₹ 25$

$$\therefore 80\% \equiv \frac{80}{20} \times 25 = ₹ 100$$

30. (*) If the rate = 5% p.a.; then Present worth

$$= \frac{\text{Amount} \times 100}{100 + (R \times T)}$$

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$$= \frac{600 \times 100}{100 + (5 \times 4)} = \frac{600 \times 100}{120}$$

$$= ₹ 500$$

$$\text{Discount} = 600 - 500 = ₹ 100$$

Note : No rate is mentioned in the question.

31. (3) Original number of visitors = 100

$$\text{Total revenue} = 100 \times 25$$

$$= 2500 \text{ paise}$$

$$= ₹ 25$$

Case II,

$$\text{Cost of each ticket} = \frac{25 \times 80}{100}$$

$$= 20 \text{ paise} = ₹ 0.2$$

$$\text{Total revenue} = \frac{25 \times 128}{100} = ₹ 32$$

If the number of visitors be x , then

$$x \times 0.2 = 32$$

$$\Rightarrow x = \frac{32}{0.2} = \frac{320}{2} = 160$$

$$\therefore \text{Required percentage} = 60$$

32. (1) Discount = 440 - 396 = ₹ 44

If the rate of discount be $x\%$, then

$$\frac{440 \times x}{100} = 44$$

$$\Rightarrow x = \frac{44 \times 100}{440} = 10\%$$

Aliter : Using Rule 1,

$$\text{Here, M.P.} = ₹ 440$$

$$\text{S.P.} = ₹ 396$$

$$\text{Discount \%} = \frac{\text{M.P.} - \text{S.P.}}{\text{M.P.}} \times 100\%$$

$$= \frac{440 - 396}{440} \times 100\%$$

$$= \frac{44}{440} \times 100\%$$

$$= 10\%$$

33. (1) C.P. of articles = ₹ 100 (let)

Marked price of articles

$$= \frac{100 \times 130}{100} = ₹ 130$$

S.P. of half of articles

$$= \frac{130}{2} = ₹ 65$$

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S.P. of one-fourth of articles at

$$15\% \text{ discount} = \frac{65}{2} \times \frac{85}{100}$$

$$= ₹ 27.625$$

S.P. of remaining articles

$$= \frac{65}{2} \times \frac{70}{100} = ₹ 22.75$$

Total S.P.

$$= ₹ (27.625 + 22.75)$$

$$= ₹ 115.375$$

$$\therefore \text{Profit \%} = 15.375\% = 15\frac{3}{8}\%$$

$$34. (2) \text{Sum} = \frac{\text{discount} \times 100}{\text{time} \times \text{rate}}$$

$$= \frac{78 \times 100}{\frac{9}{4} \times \frac{8}{3}} = \frac{78 \times 100}{6}$$

$$= ₹ 1300$$

35. (4) Marked price of article = ₹ x

$$\text{C.P. for X} = \frac{90x}{100} = ₹ \frac{9x}{10}$$

$$\text{C.P. for Y} = \frac{9x \times 110}{100} = ₹ \frac{99x}{100}$$

$$\therefore \text{Required ratio} = x : \frac{99x}{100}$$

$$= 100 : 99$$

36. (4) Let C.P. of article be = ₹ x

$$\therefore \text{S.P.} = ₹ \frac{85x}{100}$$

$$\therefore \text{Required ratio} = x : \frac{85x}{100}$$

$$= 100 : 85 = 20 : 17$$

37. (3) Required discount

$$= \left(50 - 20 - \frac{50 \times 20}{100}\right)\%$$

$$= 20\%$$

Detailed Method

C.P. of article = Rs. 100

Marked price = Rs. 150

$$\text{S.P.} = \frac{150 \times 80}{100} = \text{Rs. } 120$$

Gain per cent = 20%

DISCOUNT

38. (3) Marked price of sewing machine = Rs. x

C.P. for the retailer

$$= \frac{1955 \times 100}{115}$$

$$= \text{Rs. } 1700$$

$$\therefore x \times \frac{85}{100} = 1700$$

$$\Rightarrow x = \frac{1700 \times 100}{85} = \text{Rs. } 2000$$

$$\therefore \text{Discount} = 2000 - 1700 = \text{Rs. } 300$$

39. (3) Marked price = Rs. x and cost price = Rs. y (let)

According to question,

$$\frac{x \times 90}{100} = \frac{y \times 115}{100}$$

$$\Rightarrow \frac{x}{y} = \frac{115}{90} = \frac{23}{18} = 23 : 18$$

40. (2) Price of motor cycle = Rs. a (let)

For Mr. x

C.P. of motor cycle

$$= \text{Rs. } \left(\frac{90a}{100} \times \frac{108.5}{100} \right)$$

For Mr. y

C.P. of motor cycle

$$= \text{Rs. } \left(\frac{108.5a}{100} \times \frac{90}{100} \right)$$

41. (4) Percentage decrease

$$= \left(x + y + \frac{xy}{100} \right) \%$$

$$= \left(-20 - 10 + \frac{20 \times 10}{100} \right) \%$$

$$= -28\%$$

Aliter : Using Rule 5,

Here, $D_1 = 20\%$

$D_2 = 10\%$

Net reduction

$$= \left(D_1 + D_2 - \frac{D_1 D_2}{100} \right) \%$$

$$= \left(20 + 10 - \frac{20 \times 10}{100} \right) \%$$

$$= (30 - 2)\% = 28\%$$

42. (1) C.P. of 25 windows

$$= \frac{120000 \times 75}{100} = \text{Rs. } 90,000$$

After additional discount,

C.P. for builder

$$= \text{Rs. } (90000 - 7500)$$

$$= \text{Rs. } 82500$$

\therefore Cost of each window

$$= \frac{82500}{25} = \text{Rs. } 3300$$

43. (2) Total marked price of three books = Rs. 300

Their S.P. = Rs. 244.50

Discount = Rs. (300 - 274.50)

$$= \text{Rs. } 25.50$$

If the rate of discount be $x\%$, then

$$\frac{300 \times x}{100} = 25.50$$

$$\Rightarrow 300x = 25.50 \times 100$$

$$\Rightarrow x = \frac{25.50 \times 100}{300} = 8.5\%$$

Aliter : Using Rule 1,

M.P. = Rs. 300 (for three books)

S.P. = Rs. 274.50

Discount%

$$= \left(\frac{\text{M.P.} - \text{S.P.}}{\text{M.P.}} \right) \times 100\%$$

$$= \left(\frac{300 - 274.50}{300} \right) \times 100\%$$

$$= \frac{25.50}{300} \times 100$$

$$= 8.5\%$$

44. (3) Using Rule 5,

Single equivalent discount =

$$\left(10 + 20 - \frac{10 \times 20}{100} \right) \%$$

$$= (30 - 2)\% = 28\%$$

\therefore C.P. of article = 100 - 28

$$= \text{Rs. } 72$$

Actual cost price of article

$$= \frac{72 \times 110}{100} = \text{Rs. } 79.2$$

\therefore For a profit of 15%,

$$\text{Required S.P.} = \frac{79.2 \times 115}{100}$$

$$= \text{Rs. } 91.08$$

45. (1) Using Rule 5,

Required single discount

$$= \left(x + y - \frac{xy}{100} \right) \%$$

$$= \left(20 + 15 - \frac{20 \times 15}{100} \right) \%$$

$$= (35 - 3)\% = 32\%$$

46. (3) Let 5 kg of mixture be prepared.

\therefore C.P. of 5 kg of mixture

$$= \text{Rs. } (2 \times 35 + 3 \times 40)$$

$$= \text{Rs. } (70 + 120)$$

$$= \text{Rs. } 190$$

Total S.P. of this mixture

$$= \text{Rs. } (46 + 4 \times 55)$$

$$= \text{Rs. } (46 + 220) = \text{Rs. } 266$$

\therefore Profit per cent

$$= \left(\frac{266 - 190}{190} \right) \times 100$$

$$= \frac{7600}{190} = 40\% = 1$$

47. (2) Required time

$$= \frac{60 \times 100}{1800 \times 5} = \frac{2}{3} \text{ year}$$

$$= \left(\frac{2}{3} \times 12 \right) \text{ months}$$

$$= 8 \text{ months}$$

48. (3) Let the amount of actual bill be Rs. x .

According to the question,

$$\frac{x \times 15}{100} = 54$$

$$\Rightarrow x = \frac{54 \times 100}{15} = \text{Rs. } 360$$

49. (1) Let the marked price of building be Rs. z .

\therefore According to the question,

$$z \times (100 - x)\% = y$$

$$\Rightarrow z \times \frac{100 - x}{100} = y$$

$$\Rightarrow z = \text{Rs. } \frac{100y}{100 - x}$$

Aliter : Using Rule 2,

S.P. = Rs. y , $D = x\%$

$$\text{M.P.} = \frac{\text{SP} \times 100}{100 - D}$$

$$\text{M.P.} = \frac{y \times 100}{100 - x}$$

50. (2) Profit on outlay = Rs. 6000
According to the question,
25% of outlay = Rs. 6000

$$\therefore \text{Outlay} = \frac{6000 \times 100}{25}$$

$$= \text{Rs. } 24000$$

Again, if the advertised price be Rs. x , then

$$x \times \frac{80}{100} = \text{Rs. } (24000 + 6000)$$

$$\Rightarrow x = \frac{30000 \times 100}{80}$$

$$= \text{Rs. } 37500$$

51. (1) C.P. of article = Rs. x .

$$\therefore \text{Marked price} = \frac{130x}{100}$$

$$= \text{Rs. } \frac{13x}{10}$$

According to the question,

$$\frac{13x}{10} \times \frac{85}{100} = 910$$

$$\Rightarrow 13x \times 85 = 910 \times 1000$$

$$\Rightarrow x = \frac{910000}{13 \times 85} = \text{Rs. } 823.5$$

52. (4) Marked price of article

$$= 80 + 40 = \text{Rs. } 120$$

If the discount be $x\%$, then

$$x\% \text{ of } 120 = \text{Rs. } 40$$

$$\Rightarrow \frac{120 \times x}{100} = 40$$

$$\Rightarrow x = \frac{40 \times 100}{120} = \frac{100}{3} = \frac{100}{3}$$

$$= 33.33\%$$

53. (2) Price of T.V. set after discount
= 80% of Rs. 6000

$$= \text{Rs. } \left(\frac{6000 \times 80}{100} \right)$$

$$= \text{Rs. } 4800$$

S.P. of T.V. set with service con-

$$\text{tract} = \text{Rs. } \left(\frac{4800 \times 110}{100} \right)$$

$$= \text{Rs. } 5280$$

54. (4) Actual price charged by A

$$= \text{Rs. } \left(\frac{20000 \times 92}{100} + \frac{16000 \times 95}{100} \right)$$

$$= \text{Rs. } (18400 + 15200)$$

$$= \text{Rs. } 33600$$

Actual price charged by B

$$= \text{Rs. } \left(\frac{36000 \times 93}{100} \right)$$

$$= \text{Rs. } 33480$$

55. (2) Length of cloth bought

$$= x \text{ metre (let)}$$

$$\text{Its cost} = \text{Rs. } 32x$$

According to the question,

$$25\% \text{ of } 32x = 40$$

$$\Rightarrow 32x \times \frac{1}{4} = 40$$

$$\Rightarrow 8x = 40$$

$$\Rightarrow x = \frac{40}{8} = 5 \text{ metre}$$

56. (3) Discount given

$$= \text{Rs. } (540 - 496.80)$$

$$= \text{Rs. } 43.20$$

If the rate of discount be $x\%$, then

$$x\% \text{ of } 540 = 43.20$$

$$\Rightarrow \frac{540 \times x}{100} = 43.20$$

$$\Rightarrow x = \frac{43.20 \times 100}{540} = 8\%$$

57. (3) Cost of books = Rs. 1500

$$\text{Discount per cent} = 15\%$$

$$\therefore \text{Their S.P.} = 85\% \text{ of } 1500$$

$$= \text{Rs. } \left(\frac{1500 \times 85}{100} \right)$$

$$= \text{Rs. } 1275$$

58. (3) Single equivalent discount for
25% and 10%

$$= \left(25 + 10 - \frac{25 \times 10}{100} \right) \%$$

$$= (35 - 2.5)\% = 32.5\%$$

$$\therefore \text{S.P. of Television}$$

$$= (100 - 32.5)\% \text{ of Rs. } 2300$$

$$= \text{Rs. } \left(\frac{2300 \times 67.5}{100} \right)$$

$$= \text{Rs. } 1552.50$$

59. (3) Marked price of watch

$$= \text{Rs. } 230$$

$$\text{Discount} = 12\%$$

$$\therefore \text{S.P. of watch} = (100 - 12)\% \text{ of Rs. } 230$$

$$= \text{Rs. } \left(\frac{230 \times 88}{100} \right)$$

$$= \text{Rs. } 202.4$$

60. (2) Let the marked price of article be Rs. x .

According to the question,

$$(100 - 15)\% \text{ of } x = 318.75$$

$$\Rightarrow x \times \frac{85}{100} = 318.75$$

$$\Rightarrow x = \frac{318.75 \times 100}{85} = \text{Rs. } 375$$

61. (4) After a discount of 20%,

$$\text{Price of fan} = \text{Rs. } \left(\frac{150 \times 80}{100} \right)$$

$$= \text{Rs. } 120$$

Again, discount

$$= \text{Rs. } (120 - 108) = \text{Rs. } 12$$

$$\therefore x\% \text{ of } 120 = 12$$

$$\Rightarrow x \times \frac{120}{100} = 12$$

$$\Rightarrow x = \frac{1200}{120} = 10\%$$

62. (2) S.P. of washing machine

$$= (100 - 6)\% \text{ of Rs. } 7500$$

$$= \text{Rs. } \left(\frac{7500 \times 94}{100} \right)$$

$$= \text{Rs. } 7050$$

63. (4) Single equivalent discount for
two successive discounts of 7% each.

$$= \left(7 + 7 - \frac{7 \times 7}{100} \right) \%$$

$$= (14 - 0.49)\% = 13.51\%$$

Marked price of article

$$= \text{Rs. } 20000$$

\therefore Required S.P.

$$= (100 - 13.51)\% \text{ of Rs. } 20000$$

$$= \text{Rs. } \left(\frac{20000 \times 86.49}{100} \right)$$

$$= \text{Rs. } 17298$$

TEST YOURSELF

1. A merchant allows 5% discount on the marked price of an article to his customers. What price should he mark on an article the cost price of which is 712.50, so as to make a clear profit of

$33\frac{1}{3}\%$ on his outlay ?

- (1) ₹ 1000 (2) ₹ 1200
(3) ₹ 980 (4) ₹ 960

2. Sunder purchased an office bag with a price tag of ₹ 600 in a sale where 25% discount was being offered on the tag price. He was given a further discount of 10% on the amount arrived at after giving usual 25% discount. What was the final amount paid by Sunder ?

- (1) ₹ 210 (2) ₹ 540
(3) ₹ 405 (4) ₹ 450

3. A bicycle originally costs ₹ 100 and was discounted 10%. After three months, it was sold after being discounted 15%. How much was the bicycle sold for ?

- (1) ₹ 55.5 (2) ₹ 95.25
(3) ₹ 76.5 (4) None of these

4. A shopkeeper sold a TV set for ₹ 17940, with a discount of 8% and gained 19.6%. If no discount is allowed, then what will be his gain per cent ?

- (1) 25% (2) 26.4 %
(3) 24.8% (4) 30%

5. A cash payment that will settle a bill for 250 chairs at ₹ 50 per chair less 20% and 15% with a further discount of 5% on cash payment is :

- (1) ₹ 8075 (2) ₹ 7025
(3) ₹ 8500 (4) ₹ 7125

6. A shopkeeper marks the prices of his goods at 25% higher than the original price. After that, he allows a discount of 12% discount. What profit or loss did he get ?

- (1) 15% profit (2) 10% profit
(3) 10% loss (4) 15% loss

7. A shopkeepers announce the same price of ₹ 700 for a shirt. The first offers successive discounts of 30% and 6% while the second offers successive discounts of 20% and 16%. The shopkeeper that offers better discount is more of

- (1) ₹ 22.40 (2) ₹ 16.80
(3) ₹ 9.80 (4) ₹ 36.40

8. A tradesman gives 4% discount on the marked price and 1 article free with every 15 articles bought and still gains 35%. The marked price is more than the cost price by —

- (1) 40% (2) 39%
(3) 20% (4) 50%

9. What is the maximum percentage discount that a merchant can offer on her marked price so that she ends up selling at no profit or loss, if she had initially marked her goods up by 50% ?

- (1) 16.67% (2) 20%
(3) 50% (4) 33.33%

10. An article is listed at ₹ 65. A customer bought this article for ₹ 56.16 with two successive discounts of which one is 10%. The other discount of this discount scheme that was allowed by the shopkeeper is

- (1) 4% (2) 3%
(3) 6% (4) 2.5%

SHORT ANSWERS

1. (1)	2. (3)	3. (3)	4. (4)
5. (1)	6. (2)	7. (3)	8. (4)
9. (4)	10. (1)		

EXPLANATIONS

1. (1) Let the marked price be ₹ x .

$$\therefore \frac{95x}{100} = 712.50 \times \frac{400}{300}$$

$$\Rightarrow \frac{95x}{100} = \frac{712.5 \times 4}{3}$$

$$\Rightarrow x = \frac{712.5 \times 4 \times 100}{3 \times 95} = ₹ 1000$$

2. (3) Final amount after giving successive discounts of 25% and 10%

$$= 600 \times 0.75 \times 0.9 = ₹ 405$$

3. (3) According to question, SP of bicycle = $100 \times 0.9 \times 0.85 = ₹ 76.50$

4. (4) SP = 17940, Discount = 8%

$$\therefore MP = \frac{17940}{0.92} = ₹ 19500$$

$$\therefore \text{Gain} = 19.6\% \text{ (given)}$$

$$\therefore CP = \frac{17940}{1.196} = ₹ 15000$$

$$\text{New SP without discount} = ₹ 19500$$

$$\text{Gain} = (19500 - 15000) = ₹ 4500$$

$$\therefore \text{Gain per cent} = \frac{4500}{15000} \times 100 = 30\%$$

5. (1) By question, original price of 250 chairs

$$= 250 \times 50 = ₹ 12500$$

Price after discount

$$= 12500 \times \frac{80}{100} \times \frac{85}{100} \times \frac{95}{100} = ₹ 8075$$

6. (2) By question, Profit per cent or loss per cent.

$$= +25 - 12 - \frac{25 \times 12}{100} = +10\%$$

As the sign is +ve so, there is a profit of 10%.

7. (3) According to question, selling price of first shopkeeper.

$$= 700 \times \frac{70}{100} \times \frac{94}{100} = ₹ 460.60$$

Selling price of second shopkeeper

$$= 700 \times \frac{80}{100} \times \frac{84}{100} = ₹ 470.40$$

Required difference

$$= 470.40 - 460.60 = ₹ 9.80$$

8. (4) According to question, Discount on articles

$$\frac{1}{16} \times 100 = 6.25\%$$

Overall discount

$$= -4 - 6.25 + \frac{4 \times 6.25}{100} = -10\%$$

Let cost price = ₹ 100, then

selling price = ₹ 135

So, 90% of marked price = 135

$$\text{Marked price} = \frac{135 \times 100}{90} = ₹ 150$$

Marked price is increased by

$$= \frac{150 - 100}{90} \times 100 = 50\%$$

9. (4) Let cost price = ₹ 100

Marked price = ₹ 150

\therefore Discount per cent

$$= \frac{50}{150} \times 100 = 33.33\%$$

10. (1) Let the other discount be $x\%$.

$$65 \times \frac{90}{100} \times \frac{(100 - x)}{100} = 56.16$$

$$\Rightarrow 100 - x = \frac{56.16 \times 100 \times 100}{65 \times 90}$$

$$\Rightarrow 100 - x = 96$$

$$\Rightarrow x = 4\%$$



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