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# SSC CHSL

## Reasoning

### Instructions

For the following questions answer them individually

### Question 1

Select the related word/letters/number from the given alternatives.

Sachin Tendulkar : Cricket :: Roger Federer : ?

- A Lawn Tennis
- B Football
- C Basket Ball
- D Volley Ball

Answer: A

### Explanation:

Expression = Sachin Tendulkar : Cricket :: Roger Federer : ?

Sachin Tendulkar was a cricketer, similarly Roger Federer plays *lawn tennis*.

=> Ans - (A)

### Question 2

Select the related word/letters/number from the given alternatives.

TC : EV :: NS : ?

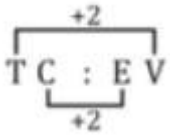
- A QT
- B LK
- C PU
- D UP

Answer: D

### Explanation:

Expression = TC : EV :: NS : ?

The pattern followed is :



Similarly, NS : **UP**

=> Ans - (D)

### Question 3

Select the related word/letters/number from the given alternatives.

**DR : KK :: LN : ?**

A QH

B SH

C SG

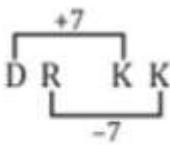
D GR

**Answer: C**

**Explanation:**

Expression = DR : KK :: LN : ?

The pattern followed is :



Similarly, LN : **SG**

=> Ans - (C)

### Question 4

Select the related word/letters/number from the given alternatives.

**5 : 100 :: 6 : ?**

A 180

B 150

C 160

D 170

**Answer: A**

**Explanation:**

Expression = 5 : 100 :: 6 : ?

The pattern followed is  $= x : x^2(x - 1)$

Eg :-  $5 : 5^2(5 - 1) = 5 : 25 \times 4 = 5 : 100$

Similarly,  $6^2 \times (6 - 1) = 36 \times 5 = 180$

=> Ans - (A)

### Question 5

Find out the odd word/letters/number/number pair from the given alternatives.

- A Dhanraj Pillay
- B Pankaj Advani
- C Dhyan Chand
- D Sardara Singh

Answer: B

#### Explanation:

Except Pankaj Advani other three are related to Hockey. Pankaj Advani played billiards and snooker, hence he is the odd one out.

=> Ans - (B)

### Question 6

Find out the odd word/letters/number/number pair from the given alternatives.

- A LJH
- B XUS
- C VTR
- D FDB

Answer: B

#### Explanation:

(A) : L (-2 letters) = J (-2 letters) = H

(B) : X (-3 letters) = U (-2 letters) = S

(C) : V (-2 letters) = T (-2 letters) = R

(D) : F (-2 letters) = D (-2 letters) = B

=> Ans - (B)

**Question 7**

Find out the odd word/letters/number/number pair from the given alternatives.

A 153

B 261

C 104

D 108

**Answer: C**

**Explanation:**

Sum of digits of all numbers is 9, but  $1 + 0 + 4 = 5$ , hence 104 is the odd one out.

=> Ans - (C)

**Question 8**

Find out the odd word/letters/number/number pair from the given alternatives.

A 243

B 687

C 978

D 456

**Answer: D**

**Explanation:**

The third digit is the average of the first two digits.

$$\frac{(2+4)}{2} = \frac{6}{2} = 3$$

$$\frac{(6+8)}{2} = \frac{14}{2} = 7$$

$$\frac{(9+7)}{2} = \frac{16}{2} = 8$$

$$\frac{(4+5)}{2} = \frac{9}{2} = 4.5 \neq 6$$

=> Ans - (D)

**Question 9**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

Matriculation, Intermediate, Graduate, ?

- A Post-graduate
- B Doctorate
- C Diploma
- D Philosophy

**Answer: A**

**Explanation:**

List of educational degrees are given.

= Matriculation -> Intermediate -> Graduate -> Post-graduate

=> Ans - (A)

**Question 10**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

AK, DQ, GV, JZ, ?

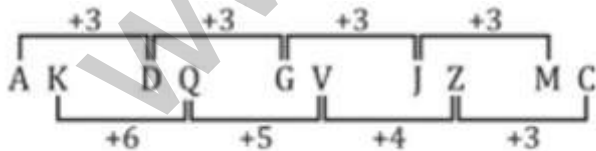
- A NY
- B MC
- C MY
- D NZ

**Answer: B**

**Explanation:**

Expression : AK, DQ, GV, JZ, ?

The pattern followed is :



Thus, missing term = MC

=> Ans - (B)

**Question 11**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

SQ, R, XV, W, IK, ?

A J

B L

C M

D O

**Answer:** A

**Explanation:**

Expression : SQ, R, XV, W, IK, ?

The pattern followed is that the second term is in the middle of the letters in the first term

Eg :- R is between Q and S, W is between V and X

Similarly, J comes between I and K.

=> Ans - (A)

**Question 12**

A series is given with one term missing. Choose the correct alternative from the given ones that will complete the series.

19, 29, 40, 44, ?

A 50

B 52

C 54

D 48

**Answer:** B

**Explanation:**

The sum of digits of the previous number is added to the next number.

$$1 + 9 = 10 \rightarrow 19 + 10 = 29$$

$$2 + 9 = 11 \rightarrow 29 + 11 = 40$$

$$4 + 0 = 4 \rightarrow 40 + 4 = 44$$

$$4 + 4 = 8 \rightarrow 44 + 8 = \mathbf{52}$$

=> Ans - (B)

**Question 13**

In the following question, two statements are given each followed by two conclusions I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

**Statement:**

- (I) Men are sinners.
- (II) Saints are men.

**Conclusions:**

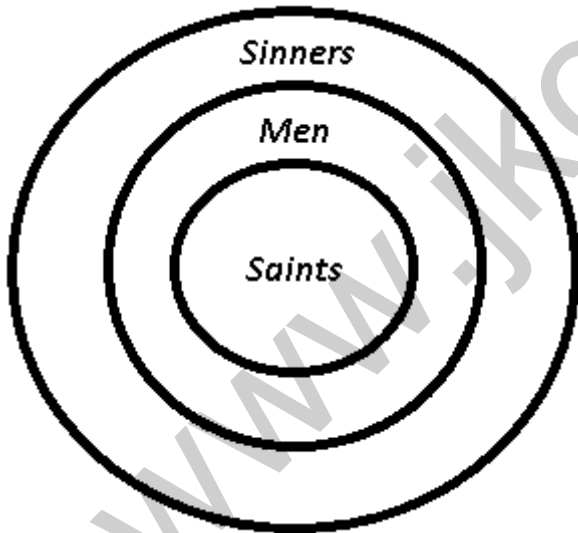
- (I) Saints are sinners.
- (II) Sinners are saints.

- A Conclusion I follows
- B Conclusion II follows
- C Neither I nor II follows
- D Both I and II follows

**Answer:** A

**Explanation:**

The venn diagram for above statements is :



**Conclusions:**

- (I) Saints are sinners = true
- (II) Sinners are saints = false

Thus, only conclusion I follows

=> Ans - (A)



**Question 14**

If 27th February 2011 was Sunday, then 1st March 2012 will be what day of the week?

- A Thursday
- B Friday
- C Sunday
- D Monday

**Answer: A**

**Explanation:**

According to the question, 27th February 2011 is Sunday

Number of days left in February =  $28 - 27 = 1$

Similarly, odd days from 27th February 2011 till 1st March 2012 =

$= (1 + 31 + 30 + 31 + 30 + 31 + 31 + 30 + 31 + 30 + 31 + 31 + 29 + 1) \% 7$  (February has 29 days in 2012)

$= 1 + 3 + 2 + 3 + 2 + 3 + 3 + 2 + 3 + 2 + 3 + 3 + 1 + 1 = 32$

Now, dividing 32 by 7, remainder = 4

Thus, day on 1st March 2012 = Sunday (+4) = Thursday

=> Ans - (A)

**Question 15**

Arrange the given words in the sequence in which they occur in the dictionary.

- i. Accuse
- ii. Accustom
- iii. Accumulation
- iv. Accompany

- A iii, iv, i, ii
- B iv, iii, i, ii
- C ii, iii, i, iv
- D iv, iii, ii, i

**Answer: B**

**Explanation:**

As per the order of dictionary :

= Accompany -> Accumulation -> Accuse -> Accustom

≡ iv, iii, i, ii

=> Ans - (B)

### Question 16

In a certain code language, "CERTAIN" is written as "DFSTBJO". How is "CRICKET" written in that code language?

A DSJBLFU

B DSJDLFU

C DSJCLFU

D DSJCLFV

**Answer: C**

### Explanation:

"CERTAIN" is written as "DFSTBJO"

The pattern followed is :

C	E	R	T	A	I	N
+1↓	+1↓	+1↓	↓	+1↓	+1↓	+1↓
D	F	S	T	B	J	O

Similarly, for CRICKET : DSJCLFU

=> Ans - (C)

### Question 17

Find the missing number as per given series in the table?

7	6	5
2	3	3
98	?	75

A 108

B 216

C 144

D 288

**Answer: A**

**Explanation:**

In each column, the number at the end is obtained by multiplying the square of first number to the second number.

$$\text{Eg :- } \Rightarrow (7^2) \times 2 = 98$$

$$(5^2) \times 3 = 75$$

$$\text{Similarly, } (6^2) \times 3 = 108$$

$\Rightarrow$  Ans - (A)

**Question 18**

If "\$" means "addition", "@" means "division", "#" means "multiplication" and "%" means "subtraction", then  $84 @ 12 \# 3 \$ 24 \% 35 = ?$

- A 9
- B 8
- C 10
- D 6

**Answer: C**

**Explanation:**

Expression :  $84 @ 12 \# 3 \$ 24 \% 35 = ?$

$$\equiv 84 \div 12 \times 3 + 24 - 35$$

$$= (7 \times 3) - 11$$

$$= 21 - 11 = 10$$

$\Rightarrow$  Ans - (C)

**Question 19**

Which set of letters when sequentially placed at the gaps in the given letter series shall complete it?

M\_P\_M\_R\_PM\_PM\_RR\_P

- A RMPPRMP
- B RRMPPMP
- C RMRPRMP
- D MRMPRMP

**Answer: C**

**Explanation:**

The pattern followed is that the terms 'MRP' and 'MMRRPP' are alternatively repeated.

= MRP MMRRPP MRP MMRRPP

=> Ans - (C)

### Question 20

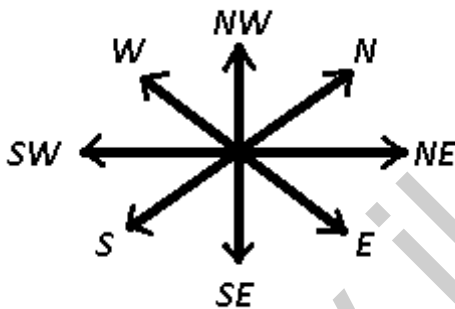
A compass is incorrectly aligned. For the direction of west, it is showing south-west. Which direction will it show for north?

- A East
- B North-west
- C North-east
- D South-east

Answer: B

#### Explanation:

For the direction of west, it is showing south-west,



Thus, it will show north-west for north.

=> Ans - (B)

### Question 21

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as shown in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, for example, 'F' can be represented by 32, 42 etc. and 'M' can be represented by 88, 68 etc. Similarly, you have to identify the set for the word 'MOVE'.

Matrix - I

	0	1	2	3	4
0	I	N	U	H	E
1	U	I	E	L	L
2	V	G	I	N	E
3	V	W	F	I	U
4	V	V	F	N	E

Matrix - II

	5	6	7	8	9
5	I	S	D	R	O
6	O	I	I	M	S
7	O	S	G	I	O
8	D	M	T	M	I
9	S	D	D	M	S

A 98, 59, 42, 44

B 86, 79, 40, 43

C 88, 65, 20, 24

D 68, 75, 30, 13

**Answer: C**

**Explanation:**

(A) : 98, 59, 42, 44 = MOFE

(B) : 86, 79, 40, 43 = MOVN

(C) : 88, 65, 20, 24 = **MOVE**

(D) : 68, 75, 30, 13 = MOVL

=> Ans - (C)

**Question 22**

Neha's is the only girl of her father and her father is the father-in-law of Pranav's brother. Pranav is Rajeev's nephew. How is Rajeev related to Neha?

A Father-in-law

B Daughter-in-law

C Uncle

D Brother

**Answer: A**

**Explanation:**

Neha's is the only girl of her father and her father is the father-in-law of Pranav's brother.

=> Neha is the wife of Pranav's brother .

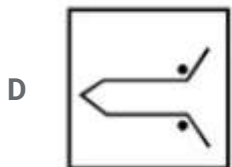
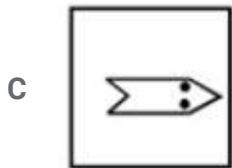
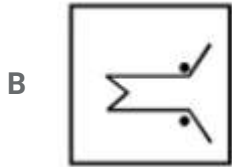
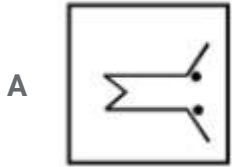
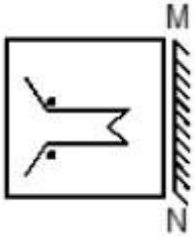
Pranav is Rajeev's nephew, => Rajeev is father of Neha's husband.

Thus, Rajeev is Neha's father-in-law

=> Ans - (A)

## Question 23

If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure ?

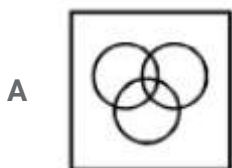


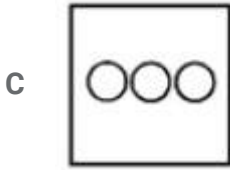
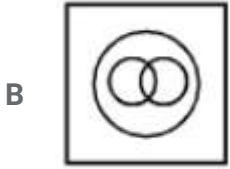
Answer: B

## Question 24

Identify the diagram that best represents the relationship among the given classes.

Cricketer, Footballer, Indian

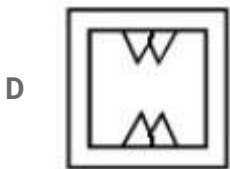
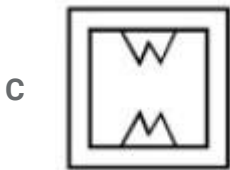
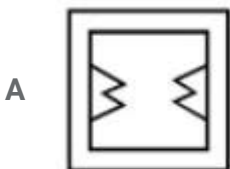
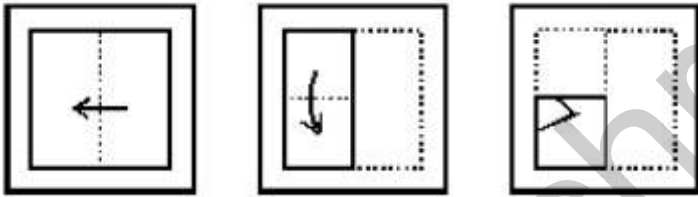




Answer: A

Question 25

A piece of paper is folded and punched as shown in the below question figures. From the given answer figures, indicates how it will appear when opened ?



**Answer: A**

## General Awareness

### Instructions

For the following questions answer them individually

### Question 26

**Processed data is known as**

- A Data
- B Information
- C Knowledge
- D Analysis

**Answer: B**

### Question 27

**Who invented logarithms?**

- A Eden Snowden
- B Larry Page
- C Thomas Edison
- D John Napier

**Answer: D**

### Question 28

**The largest gland of the human body is**

- A Pancreas
- B Thyroid
- C Large Intestine



**D** Liver

**Answer: D**

**Question 29**

**Photosynthesis in plants takes place in**

**A** Stem

**B** Leaves

**C** Roots

**D** Flower

**Answer: B**

**Question 30**

**Insects that transmit diseases are known as**

**A** Pathogens

**B** Vectors

**C** Drones

**D** Scalars

**Answer: B**

**Question 31**

**\_\_\_\_\_ gets converted to phosgene, when exposed to sunlight.**

**A** Chloroform

**B** Acetone

**C** Benzene

**D** Propylene

**Answer: A**

**Question 32****Who discovered benzene?**

- A Hal Anger
- B Michael Faraday
- C Bruce Ames
- D Nicolas Appert

**Answer: B****Question 33****Who built Gateway of India?**

- A Guru Ramdas
- B Maharaja Pratap Singh
- C Rabindra Nath Tagore
- D British Govt

**Answer: D****Question 34****Bhangra is a folk dance of**

- A Arunachal Pradesh
- B Punjab
- C Assam
- D Nagaland

**Answer: B****Question 35**

**If the break-even quantity for a factory whose variable cost of manufacturing a cell is Rs. 15 and selling price is Rs. 24 is 2,400 units, find the fixed cost of the factory?**

- A Rs. 21600
- B Rs. 36000
- C Rs. 57600
- D Rs. 14400

**Answer: A**

### Question 36

**At the equilibrium price**

- A quantity demanded is equal to quantity supplied
- B quantity demanded is greater than quantity supplied
- C elasticity of demand equals elasticity of supply
- D price elasticity of demand is unity

**Answer: A**

### Question 37

**Which of the following gases emitted from automobile exhaust is poisonous?**

- A Carbon monoxide
- B Carbon dioxide
- C Hydrocarbons
- D Sulphur dioxide

**Answer: A**

### Question 38

**Molybdenite is an ore/mineral of**

- A Molybdenum
- B Nickel
- C Silver

D Tin

**Answer: A**

### Question 39

**Which state has decided to recruit transgender people as jail wardens?**

A Uttarakhand

B Tamil Nadu

C Kerala

D Odisha

**Answer: D**

### Question 40

**What are Equinox days?**

A When day is smaller than night

B When day is the longest in the year

C When day is greater than night

D When day and night are equal

**Answer: D**

### Question 41

**Which is the largest Union Territory of India?**

A Goa

B Andaman and Nicobar Islands

C Puducherry

D Chandigarh

**Answer: B**

**Question 42**

**Mahatma Gandhi was born in which year?**

- A 1869
- B 1879
- C 1889
- D 1899

**Answer: A**

**Question 43**

**Jahangir was born in the year**

- A 1569
- B 1669
- C 1769
- D 1869

**Answer: A**

**Question 44**

**Who won the Bharat Ratna on his 100th birthday?**

- A Acharya Vinobha bhave
- B JRD Tata
- C D.K. Karve
- D Zakir Hussain

**Answer: C**

**Question 45**

**Physical quantities, which have \_\_\_\_\_ only and no \_\_\_\_\_ are called scalar quantities.**

- A direction, magnitude
- B magnitude, direction
- C speed, velocity
- D velocity, speed

**Answer: B**

**Question 46**

**Sudden fall in the barometric reading is an indication of \_\_\_\_.**

- A Storm
- B Scorching heat
- C Rain
- D Clear weather

**Answer: A**

**Question 47**

**The Rajya Sabha members are elected for a term of \_\_\_\_ years.**

- A 15
- B 12
- C 9
- D 6

**Answer: D**

**Question 48**

**The National Anthem was adopted by the Constituent Assembly in**

- A 24th May 1949
- B 24th November 1949
- C 24th January 1950

D 24th June 1950

**Answer: C**

#### Question 49

**Who won the National Snooker Championship 2016?**

A Manan Chandra

B Mahesh Yadav

C Aditya Mehta

D Pankaj Advani

**Answer: C**

#### Question 50

**Who is the author of 'Train to Pakistan'?**

A Jhumpa Lahiri

B Amish Tripathi

C Ravinder Singh

D Khushwant Singh

**Answer: D**

## English

#### Instructions

For the following questions answer them individually

#### Question 51

**Select the word with the correct spelling.**

A splintted

B goudiest

C gibbered

D gleening

**Answer: C**

**Question 52**

**Select the word with the correct spelling.**

- A toxicety
- B mamalia
- C collumned
- D notation

**Answer: D**

**Question 53**

**Select the antonym of abominable**

- A attractive
- B gross
- C grim
- D lousy

**Answer: A**

**Question 54**

**In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one, which best express the same sentence in Indirect/Direct speech.**

**I said to her, "I will do it now or never."**

- A I informed her that I would do it that moment or never.
- B I told her I would do it then or never.
- C I told her that I would not do it then or ever.
- D I told her that I would do it then or never.

**Answer: D**



**Question 55**

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.

**Smell a rat**

- A To sense that events will not be in one's favour
- B To begin to suspect trickery or deception
- C To be forewarned of danger to oneself
- D To prevent calamity by chance

**Answer: B**

**Question 56**

Rearrange the parts of the sentence in correct order.

**An engineer building a bridge**

**P-find easy to comprehend**

**Q-picks the best plan**

**R-and not the one that motorists**

- A RQP
- B RPQ
- C PRQ
- D QRP

**Answer: D**

**Question 57**

In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

You may try but she is too \_\_\_\_\_ to fall for your trick.

- A brilliant
- B intelligent
- C genius

D witty

Answer: B

#### Question 58

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

The tendency to recur at intervals.

A rotation

B wheel

C sequence

D periodicity

Answer: D

#### Question 59

In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

As the improvement in his situation was \_\_\_\_\_, the doctor did not discharge him.

A marginal

B tiny

C microscopic

D negated

Answer: A

#### Question 60

Select the synonym of aground

A stranded

B higher

C afloat

D buoyant

**Answer: A**

**Question 61**

**Select the antonym of flog**

- A whop
- B compliment
- C flay
- D flax

**Answer: B**

**Question 62**

**In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase**

**A dramatic entertainment, in which performers express through gestures**

- A mimicry
- B ham
- C pantomime
- D depiction

**Answer: C**

**Question 63**

**In the following question, a sentence has been given in Active/Passive voice. Out of four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.**

**My father is going to build a six bedroom bungalow.**

- A A six bedroom bungalow was going to be built by my father.
- B My father will have built a bungalow which will have six bedrooms.
- C A bungalow of six bedrooms will have been built by my father.
- D A six bedroom bungalow is going to be built by my father.

**Answer: D**

**Question 64**

Rearrange the parts of the sentence in correct order.

To begin with,

P-is not that they are 'unsmart'

Q-the problem with Indian cities

R-but that they are dysfunctional

A RPQ

B QRP

C QPR

D PRQ

Answer: C

**Question 65**

Improve the bracketed part of the sentence.

My patients (were waited) for me since morning.

A wait

B had been waited

C have been waiting

D no improvement

Answer: C

**Question 66**

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.

**Sixth sense**

A An intuitive power of perception

B A strong power of sense

C An ability to perceive when something will go wrong

D The false feeling that you know the truth

Answer: A

### Question 67

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

There is no question(A)/of me failing(B)/ in the examination.(C)/No error(D)

A A

B B

C C

D D

Answer: D

### Question 68

Select the synonym of decree

A certificate

B Law

C title

D award

Answer: B

### Question 69

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

One should respect(A)/religious beliefs of others,(B)/as much as his owns.(C)/No error(D)

A A

B B

C C

D D

**Answer: C**

### Question 70

**Improve the bracketed part of the sentence.**

**He is an atheist (yet) he goes to the church every Sunday.**

- A because
- B and
- C however
- D no improvement

**Answer: D**

### Instructions

In the following passage some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

\_\_\_\_(1)\_\_\_\_ nearly eight decades, the women's movement \_\_\_\_ (2) \_\_\_\_ and debated the desirability and feasibility of a Uniform Civil Code, and has ended up \_\_\_\_ (3) \_\_\_\_ a simple question – what is the value of uniformity? Is it for the "integrity of the nation" that uniformity in laws is required, as some judicial pronouncements \_\_\_\_ (4) \_\_\_\_? If so, who exactly is the beneficiary? Which sections of people benefit from "integrity of the nation", that abstract entity which is not exactly \_\_\_\_ (5) \_\_\_\_ the top of your mind as your husband throws you out on the street?

### Question 71

(1)

- A About
- B Of
- C With
- D For

**Answer: D**

### Question 72

(2)

- A discussed

- B has discussed
- C had discussed
- D had been discussing

**Answer: B**

**Question 73**

(3)

- A holding
- B positioning
- C posturing
- D posing

**Answer: D**

**Question 74**

(4)

- A have suggested
- B had been suggesting
- C suggests
- D suggested

**Answer: A**

**Question 75**

(5)

- A in
- B for
- C at
- D of

**Answer: C**

## Mathematics

### Instructions

For the following questions answer them individually

### Question 76

All sides are congruent in a \_\_\_\_.

- A Rectangle
- B Parallelogram
- C Rhombus
- D Kite

**Answer: C**

### Explanation:

Congruent sides means that all sides are equal in length, among the given options all sides are equal in a rhombus.

=> Ans - (C)

### Question 77

P and Q can complete a task in 50 and 20 days respectively. In how many days can they complete 70% of the task if they work together?

- A 20 days
- B 30 days
- C 40 days
- D 10 days

**Answer: D**

### Explanation:

Let total work to be done = 100 units

P can complete the work alone in 50 days



$$\Rightarrow P\text{'s efficiency} = \frac{100}{50} = 2 \text{ units/day}$$

Q can complete the work alone in 20 days

$$\Rightarrow Q\text{'s efficiency} = \frac{100}{20} = 5 \text{ units/day}$$

(P + Q)'s 1 day's work = 2 + 5 = 7 units/day

$$\Rightarrow 70\% \text{ of the work} = \frac{70}{100} \times 100 = 70 \text{ units}$$

$$\therefore \text{Time taken by them together to complete 70\% of the work} = \frac{70}{7} = 10 \text{ days}$$

$\Rightarrow$  Ans - (D)

### Question 78

A dishonest milkman buys milk at Rs 24 per litre and adds  $\frac{1}{3}$  of water to it and sells the mixture at Rs 32 per litre. What is his gain?

A 33.33 percent

B 50 Percent

C 77.78 percent

D 66.67 percent

Answer: C

### Explanation:

The milkman adds  $(\frac{1}{3})^{rd}$  of water, thus total mixture =  $1 + \frac{1}{3} = \frac{4}{3}$

Cost price per litre of the mixture =  $\frac{24}{\frac{4}{3}} = 24 \times \frac{3}{4} = Rs.18$

Selling price per litre = Rs. 32

$$\therefore \text{Profit \%} = \frac{32-18}{18} \times 100$$

$$= \frac{700}{9} \approx 77.78\%$$

$\Rightarrow$  Ans - (C)

### Question 79

A bank offers 15% compound interest per half year. A customer deposits Rs 7200 each on 1st January and 1st July of a year. At the end of the year, the amount he would have gained by means of interest is

A Rs 6803

B Rs 3402

C Rs 1701

D Rs 850

Answer: B

**Explanation:**

The interest earned on 7200 from Jan to July will be  $7200 \times 15 \times \frac{1}{100}$  (Since rate of interest is 15 % per 6 months)

$$= 72 \times 15 = 1080$$

Hence, 7200 will amount to 8280. He adds another 7200 to this. So the net amount becomes  $7200 + 8280 = 15480$ .

Now interest earned on this amount in a period of 6 months will be  $15480 \times 15 \times \frac{1}{100} = 2322$

So the final amount will be  $15480 + 2322 = 17802$

Total money he deposited =  $7200 + 7200 = 14400$

Hence, amount earned via interest =  $17802 - 14400 = \text{Rs. } 3402$

=> Ans - (B)

**Question 80**

What is the measure of the central angle of the sector whose area is 462 sq cm and radius of the circle is 21 cm?

A  $90^\circ$

B  $60^\circ$

C  $30^\circ$

D  $120^\circ$

Answer: D

**Explanation:**

Let central angle =  $\theta$  and radius = 21 cm

$$\text{Area of sector} = \frac{\theta}{360} \times \pi r^2$$

$$= \frac{\theta}{360} \times \frac{22}{7} \times (21)^2 = 462$$

$$= \frac{\theta}{360} \times 22 \times 63 = 462$$

$$= \frac{\theta}{20} \times 77 = 462$$

$$\Rightarrow \theta = \frac{462}{77} \times 20$$

$$\Rightarrow \theta = 6 \times 20 = 120^\circ$$

=> Ans - (D)

**Question 81**

$\sqrt{\left[\frac{(1-\sin A)}{(1+\sin A)}\right]}$  is equal to?

- A  $\sec A - \tan A$
- B  $\operatorname{cosec} A - \cot A$
- C  $\sec A + \tan A$
- D  $\operatorname{cosec} A + \cot A$

**Answer: A**

**Explanation:**

$$\text{Expression : } \sqrt{\left[\frac{(1-\sin A)}{(1+\sin A)}\right]}$$

Multiplying both numerator and denominator by  $(\sqrt{1 - \sin A})$

$$\begin{aligned} &= \sqrt{\left[\frac{(1-\sin A)}{(1+\sin A)}\right]} \times \sqrt{\frac{(1-\sin A)}{(1-\sin A)}} \\ &= \sqrt{\frac{(1-\sin A)^2}{1-\sin^2 A}} = \sqrt{\frac{(1-\sin A)^2}{\cos^2 A}} \\ &= \frac{1-\sin A}{\cos A} = \left(\frac{1}{\cos A}\right) - \left(\frac{\sin A}{\cos A}\right) \\ &= \sec A - \tan A \end{aligned}$$

=> Ans - (A)

**Question 82**

What is the value of  $\frac{(4a^2+8b+14c+2)}{2}$  ?

- A  $2a^2 + 4b + 7c + 1$
- B  $a^2 + 4b + 7c + 1$
- C  $2a^2 + 4b + 7c + 2$
- D  $a^2 + 4b + 7c + 2$

**Answer: A**

**Explanation:**

$$\begin{aligned} \text{Expression : } &\frac{(4a^2+8b+14c+2)}{2} \\ &= \frac{2(2a^2+4b+7c+1)}{2} \\ &= 2a^2 + 4b + 7c + 1 \\ &=> \text{Ans - (A)} \end{aligned}$$

**Question 83**

Coefficient of  $x^2$  in  $(x + 9)(6 - 4x)$  is

- A 54
- B -4
- C -30
- D 4

**Answer: B**

**Explanation:**

A coefficient is a numerical or constant quantity placed before and multiplying the variable in an algebraic expression. Eg : In  $ax^2$ , coefficient is  $a$

Expression :  $(x + 9)(6 - 4x)$

$$= 6x - 4x^2 + 54 - 36x$$

$$= -4x^2 - 30x + 54$$

$$\therefore \text{Coefficient of } x^2 = -4$$

=> Ans - (B)

**Question 84**

If the number 247\_679 is completely divisible by 9, then the smallest whole number in the place of the blank digit will be

- A 2
- B 7
- C 1
- D 5

**Answer: C**

**Explanation:**

For a number to be divisible by 9, sum of the digits of the number must be divisible by 9.

Let the number be =  $247x679$

$$\Rightarrow \text{Sum of digits} = 2 + 4 + 7 + x + 6 + 7 + 9 = 35 + x$$

The next multiple of 9 after 35 is 36

$$\Rightarrow 35 + x = 36$$

$$\Rightarrow x = 36 - 35 = 1$$

=> Ans - (C)

### Question 85

What are the 2 consecutive even natural numbers, sum of whose squares is 52?

A 2, 7

B 3, 5

C 4, 6

D 5, 6

Answer: C

### Explanation:

Let the consecutive even natural numbers be  $x$ ,  $(x + 2)$

$$\text{Sum of their squares} = (x)^2 + (x + 2)^2 = 52$$

$$\Rightarrow x^2 + (x^2 + 4x + 4) = 52$$

$$\Rightarrow 2x^2 + 4x + 4 - 52 = 0$$

$$\Rightarrow x^2 + 2x - 24 = 0$$

$$\Rightarrow x^2 + 6x - 4x - 24 = 0$$

$$\Rightarrow x(x + 6) - 4(x + 6) = 0$$

$$\Rightarrow (x - 4)(x + 6) = 0$$

$$\Rightarrow x = 4, -6$$

Since, the numbers are natural, thus  $x \neq -6$

$\therefore$  Numbers are = 4, 6

=> Ans - (C)

### Question 86

What is the value of  $\cot \frac{5\pi}{3}$  ?

A  $\frac{1}{\sqrt{3}}$

B  $\frac{-1}{\sqrt{3}}$

C  $\sqrt{3}$

D  $-\sqrt{3}$

**Answer: B**

**Explanation:**

$$\text{Expression : } \cot \frac{5\pi}{3}$$

$$= \cot\left(2\pi - \frac{\pi}{3}\right)$$

$$= -\cot\left(\frac{\pi}{3}\right)$$

$$= \frac{-1}{\sqrt{3}}$$

=> Ans - (B)

**Question 87**

**If  $\sin 3A = x$ , then value of x is**

**A**  $3\sin A + 4\sin^3 A$

**B**  $4\sin^3 A - 3\sin A$

**C**  $4\sin^3 A + \sin A$

**D**  $3\sin A - 4\sin^3 A$

**Answer: D**

**Explanation:**

$$\text{Expression : } \sin 3A = X$$

$$= \sin(2A + A)$$

$$= \sin(2A)\cos A + \cos(2A)\sin A$$

$$= (2\sin A \cos A)\cos A + (1 - 2\sin^2 A)\sin A$$

$$= 2\sin A(\cos^2 A) + \sin A - 2\sin^3 A$$

$$= 2\sin A(1 - \sin^2 A) + \sin A - 2\sin^3 A$$

$$= 2\sin A - 2\sin^3 A + \sin A - 2\sin^3 A$$

$$= 3\sin A - 4\sin^3 A$$

=> Ans - (D)

**Question 88**

**If  $7x + 6y = 5xy$  and  $10x - 4y = 4xy$ , then value of x and y is**

**A** 3, 2

**B** 2, 3

**C** 4, 2

D 5, 6

Answer: C

**Explanation:**

$$\text{Equation 1 : } 7x + 6y = 5xy$$

$$\text{Equation 2 : } 10x - 4y = 4xy$$

Dividing both equations by  $(xy)$

$$\Rightarrow \frac{7}{y} + \frac{6}{x} = 5$$

$$\text{and } \frac{10}{y} - \frac{4}{x} = 4$$

$$\text{Let } \frac{1}{y} = u \text{ and } \frac{1}{x} = v$$

$$\Rightarrow 7u + 6v = 5 \text{ -----(iii)}$$

$$\text{and } 10u - 4v = 4 \text{ -----(iv)}$$

Multiplying equation (iv) by 3 and equation (iii) by 2 and adding them, we get :

$$\Rightarrow (14u + 30u) = (10 + 12)$$

$$\Rightarrow u = \frac{22}{44} = \frac{1}{2}$$

$$\text{Substituting it in equation (iv), } \Rightarrow 4v = 5 - 4 = 1$$

$$\Rightarrow v = \frac{1}{4}$$

$$\therefore (x, y) = (4, 2)$$

$$\Rightarrow \text{Ans - (C)}$$

**Question 89**

If the selling price is Rs 728 after getting a discount of 9%, what was the marked price?

A Rs 793.52

B Rs 800

C Rs 662.48

D Rs 667

Answer: B

**Explanation:**

Let Marked Price = Rs.  $x$

Selling price = Rs. 728

$$\text{Discount \%} = \frac{(x-728)}{x} \times 100 = 9$$

$$\Rightarrow \frac{x-728}{x} = \frac{9}{100}$$

$$\Rightarrow 100x - 72800 = 9x$$

$$\Rightarrow 100x - 9x = 91x = 72800$$

$$\Rightarrow x = \frac{72800}{91} = Rs.800$$

$\Rightarrow$  Ans - (B)

### Question 90

The cross-section of a canal is in the shape of an isosceles trapezium which is 3 m wide at the bottom and 5 m wide at the top. If the depth of the canal is 2 m and it is 110 m long, what is the maximum capacity of this canal? (Take  $\pi = 22/7$ )

- A 1760 cubic metres
- B 1650 cubic metres
- C 1056 cubic metres.
- D 880 cubic metres

**Answer: D**

### Explanation:

The canal is 3 m wide at the bottom and 5 m at the top, thus the canal is in the shape of a trapezium whose volume will be equal to the product of area of trapezium and the width.

Length of canal = 110 m

Volume of canal =  $(\frac{1}{2} \times (\text{sum of parallel sides}) \times \text{height}) \times \text{length}$

$$\Rightarrow \text{Volume} = (\frac{1}{2} \times (5 + 3) \times 2) \times 110$$

$$= 8 \times 110 = 880 m^3$$

$\Rightarrow$  Ans - (D)

### Question 91

Two numbers are 30% and 37% lesser than a third number. By how much percent is the second number to be enhanced to make it equal to the first number?

- A 10 percent
- B 7 percent
- C 11.11 percent
- D 18.92 percent

**Answer: C**

### Explanation:



Let third number =  $100x$

First number is 30% less than  $100x$  and second number is 37% less than  $100x$

=> First number =  $70x$  and Second number =  $63x$

To make second number equal to first number, it should be enhanced by =  $70x - 63x = 7x$

=> Required % =  $\frac{7x}{63x} \times 100 = \frac{1}{9} \times 100 = 11.11\%$

=> Ans - (C)

### Question 92

Two cars travel from city A to city B at a speed of 24 and 32 km/hr respectively. If one car takes 2.5 hours lesser time than the other car for the journey, then the distance between City A and City B is

A 288 km

B 360 km

C 240 km.

D 192 km

Answer: C

### Explanation:

Let the distance between City A and City B =  $d$  km

Speed of first car = 24 km/hr and speed of second car = 32 km/hr

Let time taken by first car =  $t$  hrs and time taken by second car =  $(t - 2.5)$  hrs

Using, speed = distance/time for first car :

$$\Rightarrow \frac{d}{t} = 24$$

$$\Rightarrow d = 24t \text{ -----(i)}$$

$$\text{For second car, } \Rightarrow \frac{d}{t-2.5} = 32$$

Substituting value of  $d$  from equation (i), we get :

$$\Rightarrow 24t = 32t - 80$$

$$\Rightarrow 32t - 24t = 8t = 80$$

$$\Rightarrow t = \frac{80}{8} = 10 \text{ hrs}$$

From equation (i),  $\Rightarrow d = 24 \times 10 = 240$  km

=> Ans - (C)

**Question 93**

The ratio of present ages of Rangana and Sayed is 7:5. After 11 years the ratio of their ages will be 4:3. What is Rangana's present age?

- A 55
- B 77
- C 70
- D 96

**Answer: B**

**Explanation:**

Let Rangana's present age =  $7x$  years and Sayed's present age =  $5x$  years

According to ques,  $\Rightarrow \frac{7x+11}{5x+11} = \frac{4}{3}$

$$\Rightarrow 21x + 33 = 20x + 44$$

$$\Rightarrow 21x - 20x = 44 - 33$$

$$\Rightarrow x = 11$$

$\therefore$  Rangana's age =  $7 \times 11 = 77$  years

$\Rightarrow$  Ans - (B)

**Question 94**

A factory buys 10 machines. 2 Machine-A, 3 Machine-B and rest Machine-C. Prices of the machines are Rs 95000, Rs 60000 and Rs 50000 respectively. What is the average cost of these machines?

- A 62000
- B 68333
- C 74666
- D 60500

**Answer: A**

**Explanation:**

Cost of machines A, B and C respectively are : Rs. 95000 , 60000 and 50000

Number of machines A, B and C respectively are : 2 , 3 , 5

$$\Rightarrow \text{Total cost} = (2 \times 95000) + (3 \times 60000) + (5 \times 50000)$$

$$= 190,000 + 180,000 + 250,000 = \text{Rs. } 620,000$$

$$\therefore \text{Average cost} = \frac{6,20,000}{10} = \text{Rs. } 62,000$$

=> Ans - (A)

### Question 95

A line cuts the x-axis at the point (-3,0) and the y-axis at the point (0,6). What is the equation of the line?

A  $x = 2y + 6$

B  $y = 2x - 6$

C  $x = 2y - 6$

D  $y = 2x + 6$

Answer: D

#### Explanation:

A line which intercept x-axis at  $(-3, 0)$  and y-axis at  $(0, 6)$

$$\Rightarrow \text{Slope, } m = \frac{6-0}{0+3} = \frac{6}{3} = 2$$

Equation of line passing through points  $(x_1, y_1)$  and slope  $m = (y - y_1) = m(x - x_1)$

$$\Rightarrow \text{Equation of line} = (y - 0) = 2(x + 3)$$

$$\Rightarrow y = 2x + 6$$

=> Ans - (D)

### Question 96

The point Q(a,b) is first reflected in y-axis to Q1 and Q1 is reflected in x-axis to (-6,2). The co-ordinates of point Q are

A  $(-6,-2)$

B  $(2,-6)$

C  $(6,-2)$

D  $(-2,6)$

Answer: C

#### Explanation:

Q(a,b) after reflection in the y-axis =  $(-a,b)$

Reflection of point  $(-a,b)$  in the x-axis is  $(-a,-b)$

According to ques,

$$\Rightarrow (-a, -b) = (-6, 2)$$

$$\Rightarrow -a = -6 \text{ and } -b = 2$$

$\therefore$  Coordinates of Point Q = (6,-2)

$\Rightarrow$  Ans - (C)

### Question 97

Refer the below data table and answer the following Question.

Division / Standard	Boys	Girls
Division A / Standard 5	25	40
Division B / Standard 5	30	40
Division C / Standard 5	30	20
Division A / Standard 6	20	30
Division B / Standard 6	40	20
Division C / Standard 6	30	20

What is the ratio of boys to girls?

A 35 : 34

B 34 : 35

C 37 : 36

D 36 : 37

Answer: A

#### Explanation:

Total number of boys =  $25 + 30 + 30 + 20 + 40 + 30 = 175$

Total number of girls =  $40 + 40 + 20 + 30 + 20 + 20 = 170$

$$\Rightarrow \text{Required ratio} = \frac{175}{170}$$

$$= 35 : 34$$

$\Rightarrow$  Ans - (A)

**Question 98**

Refer the below data table and answer the following Question.

Marks	Number of Students
40 and above	30
30 and above	43
30 and above	60
10 and above	70
0 and above	85

How many students have scored marks 20 or more but less than 40?

- A 43
- B 60
- C 30
- D 103

Answer: C

**Explanation:**

Number of students who scored :

$$40 \text{ and above} = 30$$

$$30 \text{ and above} = 43 - 30 = 13$$

$$20 \text{ and above} = 60 - 43 = 17$$

$$10 \text{ and above} = 70 - 60 = 10$$

$$0 \text{ and above} = 85 - 70 = 15$$

$$\Rightarrow \text{Students who have scored marks 20 or more but less than 40} = 17 + 13 = 30$$

$$\Rightarrow \text{Ans - (C)}$$

**Question 99**

Refer the below data table and answer the following Question.

Year	GDP growth rate for the year (in %)
2011	-6
2012	-6
2013	6
2014	8
2015	4

If the GDP of the country was \$3 trillion at the end of 2011, what was it at the beginning of 2013?

- A \$3.18 trillion

- B** \$4.60 trillion
- C** \$3 trillion
- D** \$2.82 trillion

**Answer: D**

**Explanation:**

GDP at the beginning of 2013 is equal to the GDP at the end of 2012

=> GDP growth rate in 2012 = -6%

GDP at the end of 2011 = GDP at the beginning of 2012 = \$3 trillion

∴ GDP at the beginning of 2013 =  $\frac{100-6}{100} \times 3$  trillion

=  $\frac{282}{100}$  = \$2.82 trillion

=> Ans - (D)

**Question 100**

Refer the below data table and answer the following Question.

Subjects	Marks Scored
English	45
Hindi	65
Math	30
Science	45
Arts	35

Five points are to be deducted from the students average of marks scored because of poor attendance. What will be the students net average marks scored?

- A** 39
- B** 34
- C** 29
- D** 44

**Answer: A**

**Explanation:**

Total marks scored by the student = 45 + 65 + 30 + 45 + 35 = 220

=> Average marks =  $\frac{220}{5}$  = 44

But due to poor attendance, 5 marks are deducted

∴ Net average = 44 - 5 = 39

=> Ans - (A)



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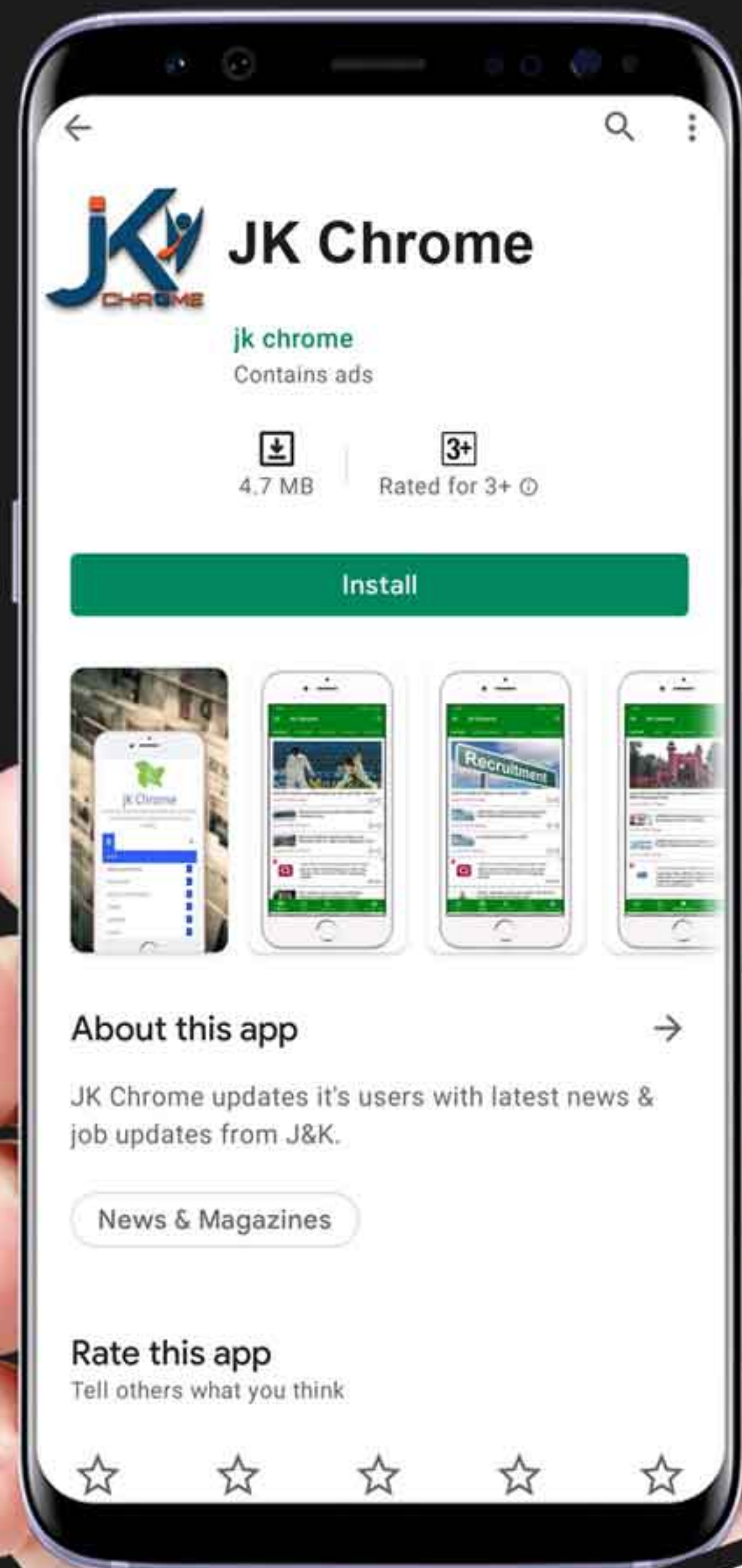
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