SSC CGL
General Awareness

Instructions

For the following questions answer them individually

Question 1

What does indifference curve represent?

A   Levels of Income and Capital

B   Satisfaction derived from two goods

C   Income from two businesses

D   Relationship between expenditure and savings

Answer: B

Question 2

Match the following	
Battle	Year
1. Battle of Buxar	a.1576
2. Battle of Plassey	b.1764
3. Battle of Haldighati	c.1757

A   1-c, 2-b, 3-a

B   1-b, 2-c, 3-a

C   1-a, 2-b, 3-c

D   1-a, 2-c, 3-b

Answer: B

Question 3

India has taken the concept of 'Judicial Review' from which country's constitution?

A United States

B United Kingdom

C Canada

D Ireland

Answer: A

Question 4

How many times a person can be elected as the President of India?

A One time

B Two times

C Three times

D No bar

Answer: D

Question 5

Who shot dead John Saunders on 17th December 1927?

A Bhagat Singh

B Mangal Panday

C Sukhdev

D Bipin Chandra Pal Singh

Answer: A

Question 6

Sardar Vallabhbai Patel was the leader of _____.

A Bhoodan Movement

B   Rowlatt Satyagraha

C   Bardoli Satyagraha

D   Swadeshi Movement

   Answer: C

Question 7

Which type of forests majorly comprises of lichens and mosses?

A   Taiga forests

B   Tundra forests

C   Temperate mixed forests

D   Tropical ever green forests

   Answer: B

Question 8

Which of the following has maximum diurnal temperature difference?

A   Desert

B   Mountains

C   Plateau

D   Ocean

   Answer: A

Question 9

Night Blindness is caused by deficiency of which of the following Vitamin?

A   Vitamin B

B   Vitamin C

C   Vitamin K

D   Vitamin A

Answer: D

Question 10

The right portion of human heart receives _____ blood.

A pure

B impure

C mixed

D None of these

   Answer: B

Question 11

Which of the following is the largest gland in human body?

A Thyroid

B Liver

C Kidney

D Pancreas

   Answer: B

Question 12

On which principle does the hydraulic lift works?

A Newton's law

B Pascal's law

C Archimedes's law

D Joule's law

   Answer: B

Question 13

At what temperature (in degree celsius), the numerical values on Celsius and Fahrenheit scales become equal?

A   -40

B   40

C   273

D   -273

   Answer: A

Question 14

In MICR, what does 'I' stands for?

A   Interactive

B   Information

C   Ink

D   Instruction

   Answer: C

Question 15

What is the process of conversion of solid state directly to gaseous state called?

A   Evaporation

B   Condensation

C   Sublimation

D   Distillation

   Answer: C

Question 16

What are the main components of Bronze Alloy?

A   Copper and Zinc

B   Copper and Tin

C   Zinc and Nickel

D   Aluminium and Nickel

Answer: B

Question 17

Which of the following causes fly ash?

A   Hydroelectric Power Station

B   Coal Combustion Power Plant

C   Nuclear Power Plant

D   Tidal Power Plant

Answer: B

Question 18

"Dulari Kanya", a scheme to bring down infant mortality in the state is launched by which Indian State?

A   Arunachal Pradesh

B   Rajasthan

C   Uttar Pradesh

D   Madhya Pradesh

Answer: A

Question 19

Who developed the theory of relativity?

A   Issac Newton

B   Charles Darwin

C   Marie Curie

D   Albert Einstein

Answer: D

Question 20

'Queensbury rules' is code of rules that directly influences which of the following sport?

A   Tennis

B   Boxing

C   Polo

D   Billiards

   Answer: B

Question 21

Who amidst the following is a distinguished painter?

A   Uday Shankar

B   Sonal Mansingh

C   Amrita Shergill

D   Yamini Kirshnamurthy

   Answer: C

Question 22

Who among the following was awarded with Padma Shri 2017 in the field of 'Sports - Hockey'?

A   Sardar Singh

B   P. R. Shreejesh

C   Ramandeep Singh

D   Yuvraj Walmiki

   Answer: B

Question 23

"Hema Malini : Beyond the Dream Girl" is authored by which author?

A   Meena Iyer

B   Hema Malini

C   Ram Kamal Mukherjee

D   Vijay Kumar

   Answer: C

Question 24

A 7500 mile direct rail link was launched on 10 April 2017 between China and _____.

A   Pakistan

B   Kazakhstan

C   Great Britain

D   France

   Answer: C

Question 25

19th SAARC Summit was planned to be held in November 2016 but it got postponed. Which country was its host?

A   Nepal

B   Bhutan

C   India

D   Pakistan

   Answer: D

English

Instructions
For the following questions answer them individually

Question 26

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'.

I am vexed at him (a:/ for what all he has (b:/ done for him till date. (c:/ No Error (d:

A   1

B   2

C   3

D   4

   Answer: A

Question 27

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'.

The Manager warned his team members (a:/ that if they persist in their (b:/ obstructionist attitude they would be punished. (c:/ No Error (d:

A   1

B   2

C   3

D   4

   Answer: B

Question 28

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.

Both taciturn and _____ , Daniel seldom spoke and never spent money.

A   wary

B   cheap

C   discreet

D   miserly

Answer: D

Question 29

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.

He was too _____ to make a statement before the Boss.

A   shy

B   tired

C   timid

D   coward

   Answer: C

Question 30

In the following question, out of the four alternatives, select the word similar in meaning to the word given.

Reiterate

A   Abuse

B   Pretend

C   Detest

D   Repeat

   Answer: D

Question 31

In the following question, out of the four alternatives, select the word similar in meaning to the word given.

Nincompoop

A   Wise

B   Fool

C   Lover

D   Companion

Answer: B

Question 32

In the following question, out of the four alternatives, select the word opposite in meaning to the word given.

Pellucid

A Torpid

B Explicit

C Murky

D Limpid

    Answer: C

Question 33

In the following question, out of the four alternatives, select the word opposite in meaning to the word given.

Adamant

A Rigid

B Flexible

C Fixed

D Unshakable

    Answer: B

Question 34

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

To wrangle over an ass's shadow

A To waste money over trifles

B To punish a person severely for his arrogance

C To quarrel over trifles

D To keep away from extreme poverty

   Answer: C

Question 35

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

Make one's flesh creep

A To confuse someone

B To flatter someone

C To abuse someone

D To frighten someone

   Answer: D

Question 36

Improve the bracketed part of the sentence.

Father (would have been appreciated) your efforts if you had informed him.

A would be appreciated

B would have appreciated

C should have been appreciated

D No improvement

   Answer: B

Question 37

Improve the bracketed part of the sentence.

Neha was (surprised by) her result.

A surprised to

B surprised from

C surprised at

D   No improvement

Answer: C

Question 38

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

Study of tumors

A   Oenology

B   Oncology

C   Phrenology

D   Upology

Answer: B

Question 39

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

The highest point

A   Tempest

B   Outpost

C   Archive

D   Zenith

Answer: D

Question 40

In the following question, four words are given out of which one word is incorrectly spelt. Find the incorrectly spelt word.

A   Literary

B   Leakeage

C   Laudable

D   Loafer

    Answer: B

Question 41

In the following question, four words are given out of which one word is incorrectly spelt. Find the incorrectly spelt word.

A   Anasthetic

B   Obliterate

C   Concurrence

D   Blithesome

    Answer: A

Question 42

The question below consists of a set of labelled sentences. Out of the four options given, select the most logical order of the sentences to form a coherent paragraph.

P: Yet making loans to poor people is hardly a Poverty cure.
Q: Segmenting the industry, might be worth while if it allows more of the poor to get access to credit.
R: Multinational corporations could take the top microfinance institutions to the next level, and the remainder could take the responsibility of development groups and regional banks.
S: Property rights and the role of law matter too.

A   PRQS

B   QRPS

C   SPQR

D   RSPQ

    Answer: B

Question 43

The question below consists of a set of labelled sentences. Out of the four options given, select the most logical order of the sentences to form a coherent paragraph.

P: But the scenario has quite changed now-a-days by allocating a special budget of funds for security.
Q: In the last ten years, budget towards the development of military forces is higher when compared to others.
R: India earlier days gave more importance to the development of industry and less importance to other departments.
S: This is because of the frightening increase in terrorism all around the world especially emerging after the 9/11 terror attack in U.S.

A   PRQS

B   SPQR

C   QSPR

D   RPSQ

    Answer: D

Question 44

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.

One should keep one's word.

A   A word should be kept.

B   A word should be keeping.

C   One's word has to be kept.

D   One's word should be kept by us.

    Answer: A

Question 45

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

The old man said, "Thanks I shall never forget this kindness, Ankit."

A   The old man applauded Ankit for his kindness and he shall never forget Ankit.

B   The old man thanked Ankit and assured him that he would never forget his kindness.

C   Ankit was being thanked by the old man for his kindness towards an old man.

D   The old man said thank you to Ankit for his kindness.

Answer: B

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.

National integration means ___(1)__ all the people of the nation into a single whole. It is a __(2)___ that bends together all people in one __(3)___ bond no matter what their religion, caste, language or history may be. It is a __(4)___ cementing force whereby all kinds of people live __(5)___ peacefully and can identify themselves as a part and parcel of a nation.

Question 46

(1)

A   segregating

B   combining

C   residing

D   complying

Answer: B

Question 47

(2)

A   sentiment

B   resources

C   essentials

D   finances

Answer: A

Question 48

(3)

A real

B common

C nominal

D similar

   Answer: B

Question 49

(4)

A weakening

B natural

C strong

D settled

   Answer: C

Question 50

(5)

A separately

B jointly

C happily

D together

   Answer: D

Mathematics

Instructions
For the following questions answer them individually

Question 51

Product of three consecutive odd numbers is 1287. What is the largest of the three numbers?

A   9

B   11

C   13

D   17

  Answer: C

Explanation:

Let the three consecutive odd numbers be $(x-2), (x), (x+2)$

=> Product = $(x-2)(x)(x+2) = 1287$

=> $x(x^2 - 4) = 11 \times 117$

=> $x = 11$ and $x^2 - 4 = 117$

$\therefore$ Largest of the three numbers = $11 + 2 = 13$

=> Ans - (C)

Question 52

45 men or 60 boys can do a piece of work in 20 days. How many days will 15 men and 20 boys take to complete the work?

A   23

B   45

C   30

D   25

  Answer: C

Explanation:

Let work done by 1 man in 1 day = m and work done by 1 boy in 1 day = b

=> Work done by 45 men in 1 day = $\frac{1}{20}$

=> $45m = \frac{1}{20}$

=> $m = \frac{1}{900}$

Similarly, work done by 60 boys = $60b = \frac{1}{20}$

=> $b = \frac{1}{1200}$

Thus, work done by 15 men and 20 boys in 1 day = $15m + 20b$

$= 15\left(\frac{1}{900}\right) + 20\left(\frac{1}{1200}\right)$

$= \frac{1}{60} + \frac{1}{60} = \frac{2}{60} = \frac{1}{30}$

∴ Time taken by 15 men and 20 boys to complete the work = 30 days

=> Ans - (C)

Question 53

How many spherical balls of radius 1 cm can be made by melting a hemisphere of radius 6 cm?

A   112

B   108

C   116

D   104

   Answer: B

Explanation:

Let n balls can be made

=> Volume of hemisphere = $n \times$ Volume of sphere

=> $n \times \frac{4}{3}\pi(r)^3 = \frac{2}{3}\pi(R)^3$

=> $2n \times (1)^3 = (6)^3$

=> $n = \frac{216}{2} = 108$

=> Ans - (B)

Question 54

The marked price of a shirt is Rs 1280. If the shirt is being sold for Rs 900, then what is the discount percentage?

A   31.31

B   25.57

C   29.68

D   34.36

   Answer: C

Explanation:

Marked price = Rs. 1280

Selling price = Rs. 900

=> Discount % = $\frac{1280-900}{1280} \times 100$

= $\frac{380}{12.8} = 29.68\%$

=> Ans - (C)

Question 55

The ratio of number of cans of orange, pineapple and mixed fruit juices kept in a store is 8 : 9 : 15. If the store sells 25%, 33.33% and 20% of orange, pineapple and mixed fruit juices cans respectively, then what is the ratio of number of cans of these juices in the remaining stock?

A   1 : 1 : 2

B   6 : 6 : 13

C   12 : 15 : 19

D   4 : 9 : 13

   Answer: A

Explanation:

Let number of cans of orange, pineapple and mixed fruit juices be 8,9 and 15 respectively.

The store sells 25% orange, => Orange sold = $\frac{25}{100} \times 8 = 2$

=> Orange left = $8 - 2 = 6$

Similarly, pineapple left = $9 - \frac{1}{3} \times 9 = 6$

and mixed fruit left = $15 - \frac{20}{100} \times 15 = 12$

∴ Required ratio = 6:6:12 = 1:1:2

=> Ans - (A)

Question 56

The ratio of number of boys and girls in a class is 2 : 3. The average weight of boys and girls in the class is 18 kg and 21 kg respectively. What is the average weight (in kgs) of all the boys and girls together

A   99/5

B   101/5

C   109/6

D   96/5

   Answer: A

Explanation:

Let the number of boys in class = 2 and number of girls = 3

Average weight of boys = 18 kg

=> Total weight of boys = $18 \times 2 = 36$ kg

Similarly, total weight of girls = $21 \times 3 = 63$ kg

$\therefore$ Average weight (in kgs) of all the boys and girls together = $\frac{36+63}{(2+3)}$

= $\frac{99}{5}$

=> Ans - (A)

Question 57

A milk merchant buys 50 litres of milk at the rate of Rs 40 per litre and mixes 5 litres of water in it. If he sells this mixture at the rate of Rs 42 per litre, then what is the profit percentage for the dealer?

A 17.2

B 14.4

C 16.6

D 15.5

 Answer: D

Explanation:

Cost price of 1 litres of milk = Rs. 40

=> Cost price of 50 litres of milk = $40 \times 50 = Rs.\ 2000$

After adding 5 litres of water, => Selling price of 55 litres of milk mixture = $42 \times 55 = Rs.\ 2310$

$\therefore$ Profit % = $\frac{(2310-2000)}{2000} \times 100$

= $\frac{310}{20} = 15.5\%$

=> Ans - (D)

Question 58

If A is 6 times more than B, then by what percentage is B is less than A?

A 64.82

B 83.33

C 28.56

D 85.71

 Answer: D

Explanation:

A is 6 times more than B, => $A = B + 6B$

=> $\frac{A}{B} = \frac{7}{1}$

Let $A = 7$ and $B = 1$

$\therefore$ Required % = $\frac{(A-B)}{A} \times 100$

= $\frac{(7-1)}{7} \times 100$

= $\frac{600}{7} = 85.71\%$

=> Ans - (B)

Question 59

A runner starts running from a point at 6:00 am with a speed of 8 km/hr. Another racer starts from the same point at 8:30 am in the same direction with a speed of 10 km/hr. At what time of the day (in p.m.) will the second racer will overtake the other runner?

A 8:00

B 4:00

C 6:30

D 5:30

   Answer: C

Explanation:

Speed of first runner = 8 km/hr starting at 6:00 am

Speed of second runner = 10 km/hr starting at 8:30 am

=> Distance covered by the first runner till 8:30 am (2.5 hours) = $8 \times 2.5 = 20$ km

Now, at 8:30 am, the first runner is 20 km ahead of second runner who just started running and since they are running in same direction, => relative speed = 10 - 8 = 2 km/hr

Time taken to overtake the first runner = distance/speed

= $\frac{20}{2} = 10$ hours

$\therefore$ Time of the day when the second racer will overtake the other runner = 8:30 am + 10 hours = 6:30 pm

=> Ans - (C)

Question 60

A sum amounts to Rs 7727.104 at the rate of 12% per annum compounded annually after three years. What is the value of principal (in Rs)?

A 5000

B   5200

C   5350

D   5500

   Answer: D

Explanation:

Let principal value = Rs. P

Rate of interest = 12% and time period = 3 years

=> Amount under compound interest = $P(1 + \frac{R}{100})^T$

=> $P(1 + \frac{12}{100})^3 = 7727.104$

=> $P(\frac{28}{25})^3 = 7727.104$

=> $P = 7727.104 \times \frac{15625}{21952}$

=> $P = 15625 \times 0.352 = Rs.\ 5500$

=> Ans - (D)

Question 61

When [x + (1/x)] = 5, then what is the value of [x - (1/x)]?

A   11

B   ± √22

C   21

D   ± √21

   Answer: D

Explanation:

Given : $x + \frac{1}{x} = 5$

Squaring both sides, we get :

=> $(x + \frac{1}{x})^2 = (5)^2$

=> $x^2 + \frac{1}{x^2} + 2(x)(\frac{1}{x}) = 25$

=> $x^2 + \frac{1}{x^2} = 25 - 2 = 23$ --------------(i)

We know that, $(x - \frac{1}{x})^2 = x^2 + \frac{1}{x^2} - 2(x)(\frac{1}{x})$

Substituting value from equation (i),

=> $(x - \frac{1}{x})^2 = 23 - 2 = 21$

=> $x - \frac{1}{x} = \pm\sqrt{21}$

=> Ans - (D)

Question 62

If x = (√2 + 1)/(√2 - 1), then what is the value of $(x^5 + x^4 + x^2 + x)/x^3$?

A   40

B   37.5

C   38

D   20√2

Answer: A

Explanation:

Given : $x = \frac{\sqrt{2}+1}{\sqrt{2}-1}$

=> $x = \frac{\sqrt{2}+1}{\sqrt{2}-1} \times \frac{(\sqrt{2}+1)}{(\sqrt{2}+1)}$

=> $x = \frac{(\sqrt{2}+1)^2}{2-1}$

=> $x = 3 + 2\sqrt{2}$ ----------(i)

Squaring both sides, we get :

=> $x^2 = (3 + 2\sqrt{2})^2$

=> $x^2 = 17 + 12\sqrt{2}$ ----------(ii)

To find : $\frac{x^5+x^4+x^2+x}{x^3}$

= $\frac{x^4+x^3+x+1}{x^2}$

= $\frac{x^2(x^2+x)+(x+1)}{x^2}$

Substituting values from equations (i) and (ii)

= $\frac{(17+12\sqrt{2})(17+12\sqrt{2}+3+2\sqrt{2})+(3+2\sqrt{2}+1)}{17+12\sqrt{2}}$

= $\frac{(17+12\sqrt{2})(20+14\sqrt{2})+(4+2\sqrt{2})}{17+12\sqrt{2}}$

= $\frac{(340+238\sqrt{2}+240\sqrt{2}+336)+(4+2\sqrt{2})}{17+12\sqrt{2}}$

= $\frac{680+480\sqrt{2}}{17+12\sqrt{2}}$

= $\frac{40(17+12\sqrt{2})}{17+12\sqrt{2}} = 40$

=> Ans - (A)

Question 63

If x = 5 - 2√6, then what is the value of √x +(1/√x)?

A 5

B 2

C 2√3

D 2√2

Answer: C

Explanation:

Given : x = 5 - 2√6

=> $x = 3 + 2 - 2\sqrt{(3)(2)}$

=> $x = (\sqrt{3})^2 + (\sqrt{2})^2 - 2(\sqrt{3})(\sqrt{2})$

=> $x = (\sqrt{3} - \sqrt{2})^2$

=> $\sqrt{x} = \sqrt{3} - \sqrt{2}$ --------(i)

=> $\frac{1}{\sqrt{x}} = \frac{1}{\sqrt{3}-\sqrt{2}}$

=> $\frac{1}{\sqrt{x}} = \frac{1}{\sqrt{3}-\sqrt{2}} \times \frac{(\sqrt{3}+\sqrt{2})}{(\sqrt{3}+\sqrt{2})}$

=> $\frac{1}{\sqrt{x}} = \frac{\sqrt{3}+\sqrt{2}}{3-2} = \sqrt{3} + \sqrt{2}$ ----------(ii)

To find : $\sqrt{x} + \frac{1}{\sqrt{x}}$

Using equations (i) and (ii), we get :

= $(\sqrt{3} - \sqrt{2}) + (\sqrt{3} + \sqrt{2})$

= $2\sqrt{3}$

=> Ans - (C)

Question 64

If 27x + 27[x-(1/3)] = 99, then what is the value of x?

A 2

B 3

C 4

D 5

Answer: A

Explanation:

Expression : 27x + 27[x-(1/3)] = 99

=> $27x + 27(\frac{3x-1}{3}) = 99$

=> $27x + 9(3x - 1) = 99$

=> $27x + 27x - 9 = 99$

=> $54x = 99 + 9 = 108$

=> $x = \frac{108}{54} = 2$

=> Ans - (A)

Question 65

The inradius of a equilateral triangle is 10 cm. What is the circum-radius (in cm) of the same triangle?

A   5

B   10√3

C   20

D   20√3

 Answer: C

Explanation:

For an equilateral triangle, ratio of circum radius and inradius = 2 : 1

=> $\frac{R}{r} = \frac{2}{1}$

Here, inradius = $r = 10$ cm

=> $\frac{R}{10} = \frac{2}{1}$

=> $r = 10 \times 2 = 20$ cm

=> Ans - (C)

Question 66

The point of intersection of all the angle bisector of a triangle is _____ of the triangle.

A   Incenter

B   Circumcenter

C   Centroid

D   Orthocenter

 Answer: A

Explanation:

The point of intersection of all the angle bisector of a triangle is **incenter** of the triangle.

=> Ans - (A)

Question 67

ABC is an equilateral triangle and P is the orthocenter of the triangle, then what is the value (in degrees) of ∠BPC?

A   90

B   120

C   135

D   145

   Answer: B

Explanation:
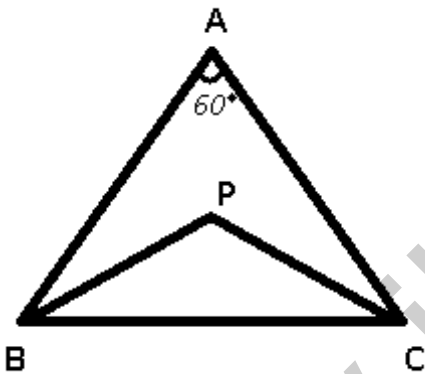
Given : ABC is an equilateral triangle and P is the orthocenter

To find : $\angle BPC =$?

Solution : ABC is an equilateral triangle and thus $\angle A = 60^\circ$

Also, $\angle BPC = 90^\circ + \frac{\angle A}{2}$

= $90 + \frac{60}{2}$

= $90 + 30 = 120^\circ$

=> Ans - (B)

Question 68

In a triangle ABC, AD is angle bisector of ∠A and AB : AC = 3 : 4. If the area of triangle ABC is 350 cm2, then what is the area (in cm2: of triangle ABD?

A   150

B   200

C   210

D   240

   Answer: A

Explanation:

In $\triangle$ ABC, since AD is the angle bisector and AB : AC = 3 : 4

=> $\frac{ar(\triangle ABD)}{ar(\triangle ADC)} = \frac{3}{4}$

Also, $ar(\triangle ABC) = 350\ cm^2$

$\therefore ar(\triangle ABD) = \frac{3}{(3+4)} \times 350$

= $3 \times 50 = 150\ cm^2$

=> Ans - (A)

Question 69

A boat is sailing towards a lighthouse of height 20√3 m at a certain speed. The angle of elevation of the top of the lighthouse changes from 30° to 60° in 10 seconds. What is the time taken (in seconds) by the boat to reach the lighthouse from its initial position?

A   10

B   15

C   20

D   60

   Answer: B

Explanation:
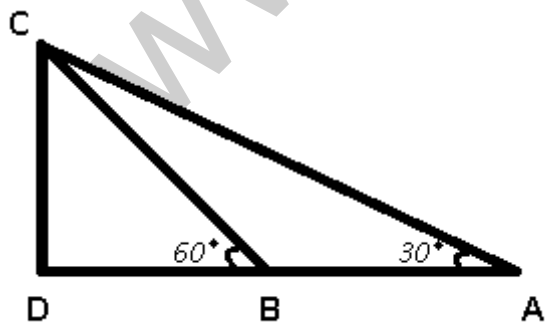
Given : CD = $20\sqrt{3}$ m and time taken to reach B from A = 10 seconds

To find : Time taken to reach D from A

Solution : In $\triangle$ BCD,

=> $tan(60°) = \frac{CD}{BD}$

$=> \sqrt{3} = \frac{20\sqrt{3}}{BD}$

$=> BD = 20$ m

Similarly, in $\triangle$ ACD,

$=> tan(30°) = \frac{CD}{AD}$

$=> \frac{1}{\sqrt{3}} = \frac{20\sqrt{3}}{20+AB}$

$=> AB + 20 = 60$

$=> AB = 60 - 20 = 40$ m

=> Speed of boat (while travelling from A to B) = distance/time

= $\frac{40}{10} = 4$ m/s

=> AD = BD + AB = 20 + 40 = 60 m

$\therefore$ Time taken to reach D from A = $\frac{60}{4} = 15$ seconds

=> Ans - (B)

Question 70

What is the value of [sec θ/(sec θ - 1)] + [sec θ/(sec θ + 1)] ?

A $2sin^2\theta$

B $2(1 + tan^2\theta)$

C $2cosec^2\theta$

D $sin^2\theta$

Answer: C

Explanation:

Expression : $\frac{sec\theta}{sec\theta-1} + \frac{sec\theta}{sec\theta+1}$

= $\frac{sec\theta(sec\theta+1)+sec\theta(sec\theta-1)}{(sec\theta-1)(sec\theta+1)}$

= $\frac{(sec^2\theta+sec\theta)+(sec^2\theta-sec\theta)}{sec^2\theta-1}$

Using, $(sec^2\theta - tan^2\theta = 1)$

= $\frac{2sec^2\theta}{tan^2\theta} = 2sec^2\theta cot^2\theta$

= $\frac{2}{cos^2\theta} \times \frac{cos^2\theta}{sin^2\theta}$

= $\frac{2}{sin^2\theta} = 2cosec^2\theta$

=> Ans - (C)

Question 71

If $\cosec \theta = \dfrac{1}{4x} + x$ **,then what is the value of** $\cosec \theta + \cot \theta.$

A   3x

B   x

C   4x

D   2x or 1/(2x)

   Answer: D

Instructions

The pie chart given below shows the runs scored by Pujara against team of different countries.
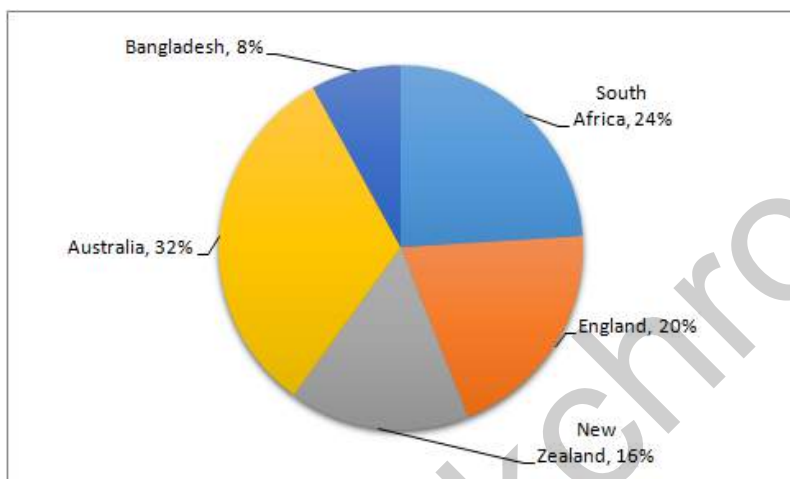
Question 72

The runs scored by Pujara against South Africa is more than runs scored against Bangladesh by what percentage?

A   100

B   150

C   200

D   250

   Answer: C

Explanation:

% runs scored by Pujara against South Africa = 24%

% runs scored by Pujara against Bangladesh = 8%

=> Required % = $\dfrac{(24-8)}{8} \times 100$

$= 2 \times 100 = 200\%$

=> Ans - (C)

Question 73

If Pujara has scored 1875 runs in total, then what is the difference in runs scored by Pujara against South Africa and New Zealand?

A   150

B   175

C   200

D   250

    Answer: A

Explanation:

Difference in runs scored by Pujara against South Africa and New Zealand (in %) = 24 - 16 = 8%

Total runs = 1875

=> Required runs = $\frac{8}{100} \times 1875$

$= 2 \times 75 = 150$

=> Ans - (A)

Question 74

What is the sectorial angle (in degrees) made by the runs scored against Australia in the given pie chart?

A   106.8

B   109.6

C   112.4

D   115.2

    Answer: D

Explanation:

% runs scored against Australia = 32%

=> Central angle = $\frac{32}{100} \times 360°$

$= 32 \times 3.6 = 115.2°$

=> Ans - (D)

Question 75

What should be the least number of runs that Pujara must have scored in total (runs can only be integers)?

A 25

B 225

C 375

D 625

   Answer: A

Explanation:

Let the least runs scored = $100x$

Now, H.C.F. of all the % runs = H.C.F.(24,20,16,32,8) = 4

Thus, least runs scored can be = $\frac{100x}{4} = 25x$

Now, to get the least runs scored, we should take $x = 1$

=> Least runs = 25

=> Ans - (A)

Reasoning

Instructions

For the following questions answer them individually

Question 76

In the following question, select the related word from the given alternatives.

Sheep : Lamb : : Cow : ?

A Kitten

B Cub

C Calf

D Caterpillar

   Answer: C

Explanation:

The young ones of sheep are called lamb, similarly calf are the young ones of cow.

=> Ans - (C)

Question 77

In the following question, select the related letters from the given alternatives.

PRAG : QTDK : : STOP : ?

A LMNP

B BDFE

C TVRT

D QSTG

Answer: C

Explanation:

Expression : PRAG : QTDK

The pattern followed is :

P	R	A	G
(+1)	(+2)	(+3)	(+4)
Q	T	D	K

Similarly, for STOP :

S	T	O	P
(+1)	(+2)	(+3)	(+4)
T	V	R	T

=> Ans - (C)

Question 78

In the following question, select the related number from the given alternatives.

562 : 30 : : 663 : ?

A 44

B 49

C 54

D 58

Answer: C

Explanation:

Expression = 562 : 30 : : 663 : ?

The pattern followed is that all the digits are multiplied and then divided by 2.

Eg = $\frac{5 \times 6 \times 2}{2} = 5 \times 6 = 30$

Similarly, $\frac{6 \times 6 \times 3}{2} = 3 \times 18 = 54$

=> Ans - (C)

Question 79

In the following question, select the odd word from the given alternatives.

A   Cricket

B   Carrom

C   Table Tennis

D   Chess

   Answer: A

Explanation:

All except Cricket are indoor games, hence it is the odd one out.

=> Ans - (A0

Question 80

In the following question, select the odd letters from the given alternatives.

A   IMX

B   DHS

C   GWK

D   KOZ

   Answer: C

Explanation:

(A) : I (+4 letters) = M (+11 letters) = X

(B) : D (+4 letters) = H (+11 letters) = S

(C) : G (**-10** letters) = W (**-12** letters) = K

(D) : K (+4 letters) = O (+11 letters) = Z

=> Ans - (C)

Question 81

In the following question, select the odd number pair from the given alternatives.

A   122 - 1331

B   173 - 2197

C   197 - 2744

D   290 - 4913

   Answer: B

Explanation:

(A) : $122 - 1 = 121 = 11^2$; $11^3 = 1331$

(B) : $173 - 1 = 172$ not a perfect square

(C) : $197 - 1 = 196 = 14^2$; $14^3 = 2744$

(D) : $290 - 1 = 289 = 17^2$; $17^3 = 4913$

=> Ans - (B)

Question 82

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

1. Xenons
2. Xylyls
3. Xanthic
4. Xenians
5. Xyst

A   34125

B   34521

C   43251

D   51342

   Answer: A

Explanation:

As per the dictionary, words are :

= Xanthic -> Xenians -> Xenons -> Xylyls -> Xyst

$\equiv$ 34125

=> Ans - (A)

Question 83

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

LOQ, SVX, ZCE, ?

A   GJL

B   GLJ

C   GTL

D   JLG

     Answer: A

Explanation:

Expression : LOQ, SVX, ZCE, ?

The pattern followed is that there is a difference of 7 letters in each letter of the terms.

1st letter : L , S , Z , G

2nd letter : O , V , C , J

3rd letter : Q , X , E , L

Thus, missing term = **GJL**

=> Ans - (A)

Question 84

In the following question, select the missing number from the given series.

13, 27, 56, 115, ?

A   224

B   231

C   233

D   234

     Answer: D

Explanation:

The pattern followed is :

$13 \times 2 + 1 = 27$

$27 \times 2 + 2$ = 56

$56 \times 2 + 3$ = 115

$115 \times 2 + 4$ = **234**

=> Ans - (D)

Question 85

Sumitra remembers that her mother's birthday is after 13th February but before 16th February but her brother remembers that his mother's birthday is after 14th February but before 17th February. On which date Sumitra's mother's birthday will be celebrated?

A   13th February

B   14th February

C   15th February

D   17th February

   Answer: C

Explanation:

Sumitra remembers that her mother's birthday is after 13th February but before 16th February,

=> Possible dates = 14 , 15

Her brother remembers that his mother's birthday is after 14th February but before 17th February,

=> Possible dates = 15 , 16

Thus, common dates in both equations = 15

∴ Sumitra's mother's birthday will be celebrated on 15th February.

=> Ans - (C)

Question 86

There are five energy drinks - Red, Moto, Energy, Lion and Bull containing different range of sugar content. Moto having sugar content more than all other drinks. Energy having the sugar content only more than the Lion. Bull is not having sugar content more than the Red. Which of the following drink having the second most sugar content?

A   Bull

B   Energy

C   Red

D   Moto

Answer: C

Explanation:

Let the sugar content in the five drinks Red, Moto, Energy, Lion and Bull respectively be R, M, E, L, B.

M has the highest sugar content.

Energy having the sugar content only more than the Lion, thus L is the least and E the second least.

Also, R has more sugar than B

∴ **M > R > B > E > L**

Thus, Red has the second most sugar content.

=> Ans - (C)

Question 87

In the following question, from the given alternative words, select the word which cannot be formed using the letters of the given word.

CALCULATING

A   GAIN

B   TANING

C   TAIL

D   CULT

   Answer: B

Explanation:

The word CALCULATING does not contain 2 N's, and thus the word 'Taning' cannot be formed.

=> Ans - (B)

Question 88

In a certain code language, "WILDHORN" is written as "1133" and "RAPTURE" is written as "1089". How is "PORTLOUIS" written in that code language?

A   1395

B   1485

C   1584

D   1595

   Answer: D

Explanation:

The numerical position of the alphabets are added and the result is multiplied by 11.

WILDHORN = $(23 + 9 + 12 + 4 + 8 + 15 + 18 + 14) \times 11 = 103 \times 11 = 1133$

RAPTURE = $(18 + 1 + 16 + 20 + 21 + 18 + 5) \times 11 = 99 \times 11 = 1089$

PORTLOUIS = $(16 + 15 + 18 + 20 + 12 + 15 + 21 + 9 + 19) \times 11 = 145 \times 11 = 1595$

=> Ans - (D)

Question 89

If "A" denotes "subtracted from", "B" denotes "added to", "C" denotes "divided by", "D" denotes "multiplied by", then which of the following statement is correct?

A   3 A 12 B 16 D 17 C 1 = 163

B   5 C 7 A 9 D 8 B 2 = 294

C   13 C 13 A 13 B 13 D 13 = 157

D   18 C 16 D 49 A 27 B 9 = 200

   Answer: C

Explanation:
 "A" denotes "$-$", "B" denotes "$+$", "C" denotes "$\div$", "D" denotes "$\times$"

(A) : 3 A 12 B 16 D 17 C 1 = 163

$\equiv 3 - 12 + 16 \times 17 \div 1 = 163$

L.H.S. = $-9 + 272 = 263 \neq$ R.H.S.

(B) : 5 C 7 A 9 D 8 B 2 = 294

$\equiv 5 \div 7 - 9 \times 8 + 2 = 294$

L.H.S. = $0.7 - 72 + 2 = -69.3 \neq$ R.H.S.

(C) : 13 C 13 A 13 B 13 D 13 = 157

$\equiv 13 \div 13 - 13 + 13 \times 13 = 157$

L.H.S. = $1 - 13 + 169 = 157 =$ R.H.S.

=> Ans - (C)

Question 90

If 9 * 2 * 5 = 23 and 1 * 4 * 8 = 29, then

1 * 6 * 3 = ?

A   19

B   21

C   31

D   39

    Answer: A

Explanation:

9 * 2 * 5

5 * 2 * 9 = 529 and $\sqrt{529}$ = 23.

1 * 4 * 8

8* 4 * 1 = 841 and $\sqrt{841}$ = 29.

Therefore similarly, 1 * 6 * 3 = 3 * 6 *1 = 361 and $\sqrt{361}$ = 19.

Question 91

In the following question. select the number which can be placed at the sign of question mark (?) from the given alternatives.
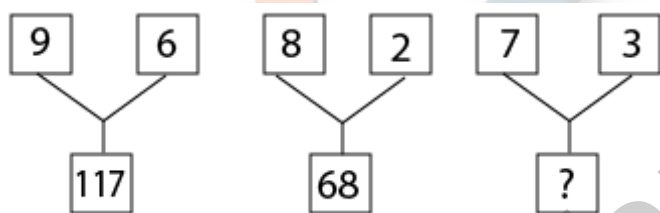
A   48

B   52

C   55

D   58

    Answer: D

Explanation:

The number at the bottom is obtained by adding the square of other two numbers.

Eg : $9^2 + 6^2 = 81 + 36 = 117$

and $8^2 + 2^2 = 64 + 4 = 68$

Similarly, $7^2 + 3^2 = 49 + 9 = 58$

=> Ans - (D)

Question 92

How many triangles are there in the given figure
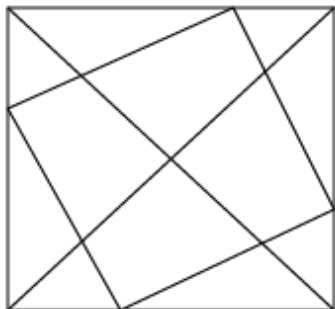
A   20

B   23

C   24

D   26

    Answer: A

Question 93

In the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.

Statements:

I. All LED are bulb.
II. Some bulbs are not tube light.

Conclusions:

I. Some tube lights are LED.
II. All LED are tube lights.

A   Only conclusion (I) follows.

B   Only conclusion (II) follows.

C   Neither conclusion (I) nor conclusion (II) follows.

D   Both conclusions follow.

    Answer: C

Explanation:
The venn diagram for above statements is :
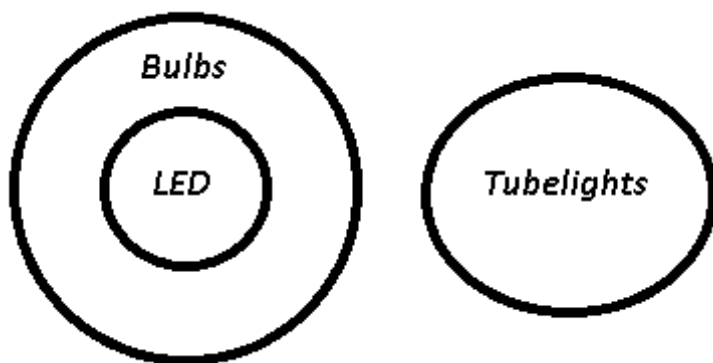
Conclusions:

I. Some tube lights are LED = false

II. All LED are tube lights = false

Thus, neither conclusion (I) nor conclusion (II) follows.

=> Ans - (C)

Question 94

Three positions of a cube are shown below. What will come opposite to face containing 'α'?

A β

B δ

C η

D θ
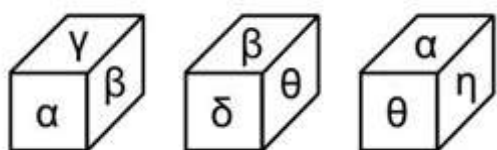
   Answer: B

Explanation:
From the first and third figures $\gamma, \beta, \theta, \eta$ are all adjacent to α

Thus, from the second figure, symbol which will be opposite to α is = δ

=> Ans - (B)

Question 95

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

Pet animals, Dog, Cat

A

B

C

D
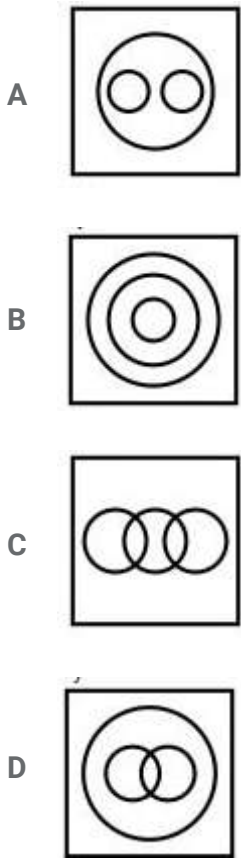
Answer: A

Explanation:

All dogs are pet animals, similarly all cats are pet animals, but dogs are different from cats.

Thus, the first figure best represents above relationship.

=> Ans - (A)

Question 96

Which answer figure will complete the pattern in the question figure

A

B

C

D
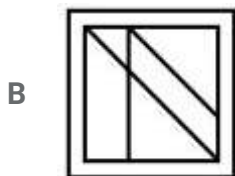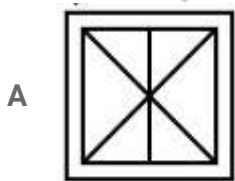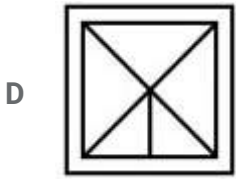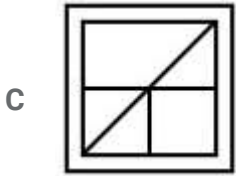
Answer: B

Explanation:

When we complete the question figure, we get :

Now, the missing figure in blue colour is identical to figure given in second option.

=> Ans - (B)

Question 97

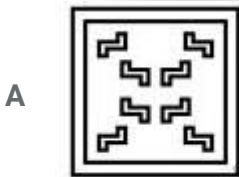**From the given answer select in one in which the question figure is hidden / embedded**

A

B

C

D
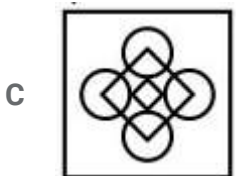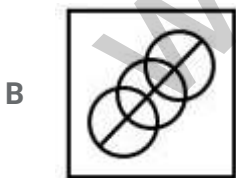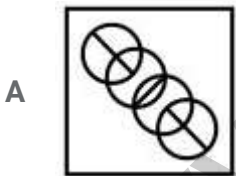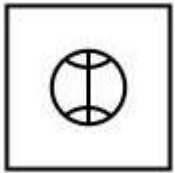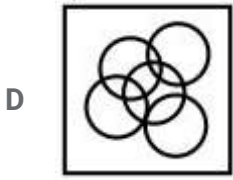
   Answer: B

Explanation:

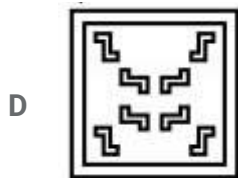The question figure is embedded in the following figure in blue colour.

=> Ans - (B)

Question 98

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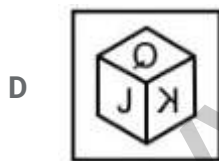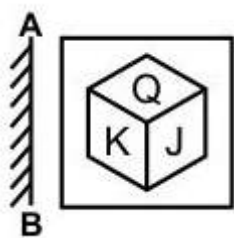

A

B

C

D
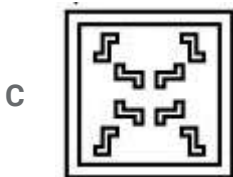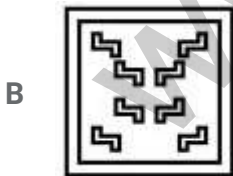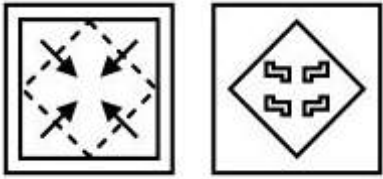
    Answer: D

Question 99

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

A

B

C

D

    Answer: B

Explanation:

A vertical mirror is placed, so the objects on the left will appear at right and vice-versa, hence K will appear at the right hand side and J on the left, thus third option is eliminated.

Also, all the three letters will be reversed, and thus the first and last options are not possible.

=> Ans - (B)

Question 100

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, 'Z' can be represented by 87, 99, etc., and 'T' can be represented by 69, 95, etc Similarly, you have to identify the set for the word "MAZE".

Matrix - I

	0	1	2	3	4
0	M	O	G	A	C
1	A	C	M	O	G
2	O	G	A	C	M
3	C	M	O	G	A
4	G	A	C	M	O

Matrix - II

	5	6	7	8	9
5	J	Z	T	E	U
6	E	U	J	Z	T
7	Z	T	E	U	J
8	U	J	Z	T	E
9	T	E	U	J	Z

A 00, 41, 99, 96

B 12, 04, 56, 58

C 24, 22, 88, 65

D 43, 10, 69, 77

  Answer: A

Explanation:

(A) : 00, 41, 99, 96 = **MAZE**

(B) : 12, 04, 56, 58 = MCZE

(C) : 24, 22, 88, 65 = MATE

(D) : 43, 10, 69, 77 = MATE

=> Ans - (A)