

2017 SSC CGL 18 Aug Shift-2

Reasoning

Instructions

For the following questions answer them individually

Question 1

Select the related word from the given alternatives.

Hope : Despair :: Lunatic : ?

- A Honest
- B Hardworking
- C Sane
- D Stylish

Answer: C

Explanation:

Hope and despair are opposite in meaning, so the antonym of lunatic is **sane**.

=> Ans - (C)

Question 2

Select the related letters from the given alternatives.

MOQ : NLJ :: SUW : ?

- A IGE
- B CEG
- C KJI
- D HFD

Answer: D

Explanation:

Expression = MOQ : NLJ

The pattern followed is that there are as many alphabets to the left of the first letter as there are to the right of the leftmost letter in right hand side.

M is 13th from left end and N is 13th from right end. O is 15th from left end and L is 15th from right end. Finally, Q is 17th from left end and J is 17th from right end in English alphabetical series.

Similarly, for SUW :

Now, S is 19th from left end, thus first letter will be 19th from right end = H

U is 21th from left end, second letter will be 21th from right end = F

W is 23th from left end, third letter will be 23th from right end = D

Thus, missing term = **HFD**

=> Ans - (D)

Question 3

Select the related number from the given alternatives.

111 : 37 :: 123 : ?

- A 41
- B 31
- C 21
- D 71

Answer: A

Explanation:

Expression = $111 : 37 :: 123 : ?$

The pattern followed is = $n : \frac{n}{3}$

Eg = $111 : \frac{111}{3} = 111 : 37$

Similarly, $\frac{123}{3} = 41$

=> Ans - (A)

Question 4

Select the odd word from the given alternatives.

- A Wall clock
- B Painting
- C Photo frame
- D Carpet

Answer: D

Explanation:

Wall clock, painting and photo frame are all hanged on the walls while a carpet is laid on the floor, hence it is the odd one out.

=> Ans - (D)

Question 5

Select the odd letters from the given alternatives.

- A LMN
- B PPQ
- C RST
- D VWX

Answer: B

Explanation:

'LMN', 'RST' and 'VWX' are all successive letters of English alphabets, hence 'PPQ' is the odd one out.

=> Ans - (B)

Question 6

Select the odd number from the given alternatives.

- A 80
- B 17
- C 13
- D 31

Answer: A

Explanation:

17, 13 and 31 are prime numbers, hence 80 is the odd one out.

=> Ans - (A)

Question 7

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

yes, rain, alive, subtle, ?

- A airport
- B smoke
- C inch
- D fabulous

Answer: A

Explanation:

Expression : yes, rain, alive, subtle, ?

The pattern is that in each word, number of letters are increasing = 3,4,5,6

Now, the next word must contain 7 letters. Among the option, the word with seven letters is **Airport**.

=> Ans - (A)

Question 8

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

Abcd, ghIj, Mnop, stUV, Yzab, ?

- A efGH
- B Efgh
- C cdEF
- D efCD

Answer: A

Explanation:

Expression : Abcd, ghIj, Mnop, stUV, Yzab, ?

The pattern followed is that in groups of 4, English alphabetical series is written. Also, 2 letters are missing after each term. And, in each alternate term, the last three and first two letters are in small letters, rest are capital.

Thus, after 'b', next set of omitted letters = 'c' and 'd'

Also, the first two letters should be in small and last two should be capital.

Thus, missing term = **efGH**

=> Ans - (A)

Question 9

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

1, 0.25, 1/9, ? , 0.04, 1/36

A 0.0625

B 0.025

C 1/8

D 1/6

Answer: A

Explanation:

Numbers of the form $\frac{1}{n^2}$ are written.

$$\frac{1}{1^2} = 1$$

$$\frac{1}{2^2} = \frac{1}{4} = 0.25$$

$$\frac{1}{3^2} = \frac{1}{9}$$

$$\frac{1}{4^2} = \frac{1}{16} = \mathbf{0.0625}$$

$$\frac{1}{5^2} = \frac{1}{25} = 0.04$$

$$\frac{1}{6^2} = \frac{1}{36}$$

=> Ans - (A)

Question 10

Eshan's birthday is on Friday 10th March. On what day of the week will be Shlok's Birthday in the same year if Shlok was born on 25th September?

A Monday

B Wednesday

C Friday

D Thursday

Answer: A

Explanation:

According to the question, 10th March is Friday

Number of days left in March = $31 - 10 = 21$

Similarly, odd days from 10th March till 25th September = $(21 + 30 + 31 + 30 + 31 + 31 + 25) \% 7$

= $0 + 2 + 3 + 2 + 3 + 3 + 4 = 17$

Now, dividing 17 by 7, remainder = 3

Thus, day on 25th September = Friday (+3) = Monday

=> Ans - (A)

Question 11

The weights of 4 boxes are 70, 50, 30 and 90 kilograms. Which of the following cannot be the total weight, in kilograms, of any combination of these boxes and in a combination a box can be used only once

- A 220
- B 240
- C 210
- D 170

Answer: A

Explanation:

Weights of 4 boxes = 70, 50, 30 and 90 kilograms

(A) : 220 = not possible

(B) : 240 = 30 + 50 + 70 + 90

(C) : 210 = 50 + 70 + 90

(D) : 170 = 30 + 50 + 90

=> Ans - (A)

Question 12

From the given words, select the word which cannot be formed using the letters of the given word.

SHORTING

- A THORN
- B NITRO
- C NOISE
- D STING

Answer: C

Explanation:

The word SHORTING does not contain any 'E' and thus the word 'Noise' cannot be formed.

=> Ans - (C)

Question 13

If BAPTISM is coded as DCRVKUO, then how will TIN be coded as?

- A VKP
- B EBC
- C FDF
- D CLS

Answer: A

Explanation:

BAPTISM is coded as DCRVKUO

The pattern followed is :

| | | | | | | |
|------|------|------|------|------|------|------|
| B | A | P | T | I | S | M |
| (+2) | (+2) | (+2) | (+2) | (+2) | (+2) | (+2) |
| D | C | R | V | K | U | O |

Similarly, for TIN :

| | | |
|------|------|------|
| T | I | N |
| (+2) | (+2) | (+2) |
| V | K | P |

=> Ans - (A)

Question 14

In a certain code language, '+' represents 'x', '-' represents '+', 'x' represents '÷' and '÷' represents '-'. What is the answer to the following question? $45 \times 5 - 24 + 3 \div 80 = ?$

- A 100
- B 52
- C 1
- D 82

Answer: C

Explanation:

Expression = $45 \times 5 - 24 + 3 \div 80 = ?$

$$\equiv 45 \div 5 + 24 \times 3 - 80$$

$$= 9 + 72 - 80 = 1$$

=> Ans - (C)

Question 15

If $5\$125 = 25$, $12\$48 = 4$ then what is the value of $4\$24 = ?$

- A 34
- B 35
- C 6
- D 5

Answer: C

Explanation:

The pattern followed is that for $a \$ b = \frac{b}{a}$

$$\text{Eg} = 5\$125 = \frac{125}{5} = 25$$

$$\text{and } 12\$48 = \frac{48}{12} = 4$$

$$\text{Similarly, } 4\$24 = \frac{24}{4} = 6$$

=> Ans - (C)

Question 16

Select the missing number from the given responses

| | | |
|-----|----|-----|
| 13 | 7 | 17 |
| 17 | 23 | 19 |
| 221 | ? | 323 |

- A 30
- B 102
- C 29
- D 161

Answer: D

Explanation:

In each column, the last number is obtained by multiplying the other two.

Eg : $13 \times 17 = 221$

and $17 \times 19 = 323$

Similarly, $7 \times 23 = 161$

=> Ans - (D)

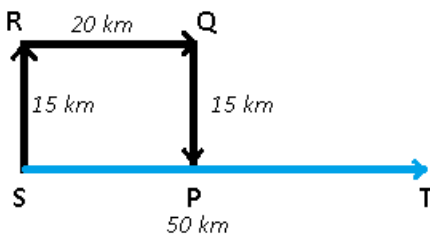
Question 17

Two planes start from the same airport. A flies 50 km East. B flies 15 km North, then turns East and flies 20 km, then turns to its right and flies 15 km. Where is B with respect to A now?

- A 30 km East
- B 70 km East
- C 30 km West
- D 70 km West

Answer: C

Explanation:



Let both the planes start from point S. The path of plane A is represented by blue and B's path by black.

Plane A travels 50 km to east and reaches T.

Similarly, plane B travels north for 15 km and reaches R, then flies 20 km towards east and finally stops at P.

Thus, $PT = 50 - 20 = 30$ km

∴ B is 30 km to the west of A.

=> Ans - (C)

Question 18

In the question a statement is given, followed by two arguments, I and II. You have to consider the statement to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given arguments, if any, is a strong argument.

Statement : Should zoos be closed down?

Argument I : Yes, imprisoning animals is a crime.

Argument II : No, it is fine if some animals are kept in captivity for sake of entertainment.

- A if only argument I is strong.
- B if only argument II is strong.
- C if both I and II are strong.
- D if neither I nor II is strong.

Answer: A

Explanation:

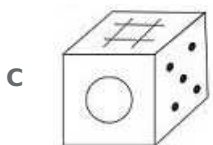
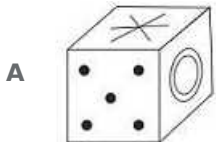
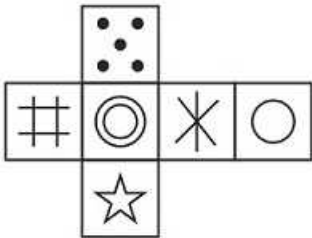
The first argument indicates that imprisoning animals is a crime, hence it has a strong impact on the given statement about ceasing the zoos, thus it is a strong argument. But, the second argument does not provide a strong idea as to why or why not the zoos should be closed down.

Thus, only argument I is strong.

=> Ans - (A)

Question 19

Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure?

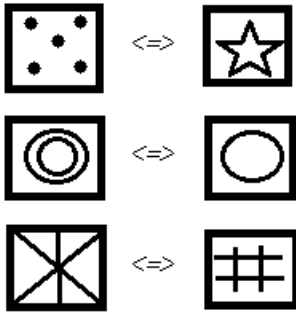


- D None of these

Answer: D

Explanation:

When we fold the given figure, the circle with a '2 circles' sign will become the base of the cube and the side with '1 circle' sign will become top, and thus they will face each other. Similarly, the sides which will face each other will be :

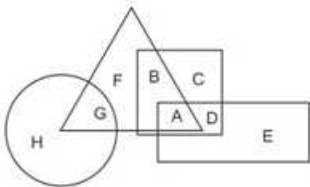


Since, the opposite sides cannot be adjacent in the cube, thus all the cubes in the options are possible.

=> Ans - (D)

Question 20

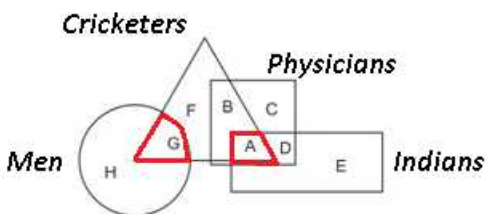
In the following figure, square represents Physicians, triangle represents cricket players, circle represents men and rectangle represents Indians. Which set of letters represents cricket players who are either Indians or men?



- A H,F,D
- B A,B,E
- C D,F,C
- D A,G

Answer: D

Explanation:

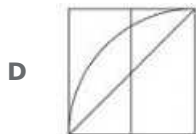
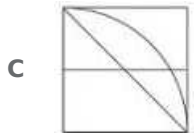
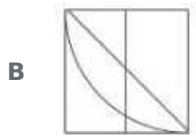
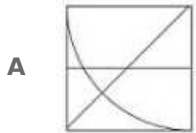
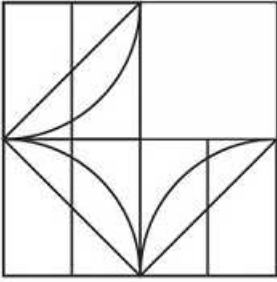


Cricket players who are either Indians or men are represented by red region = A + G

=> Ans - (D)

Question 21

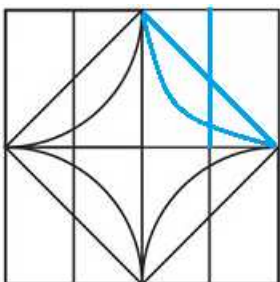
Which answer figure will complete the pattern in the question figure



Answer: B

Explanation:

When we complete the above figure, we get :

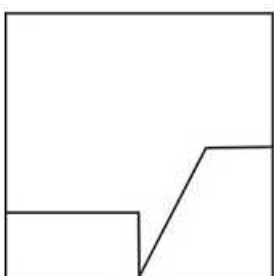


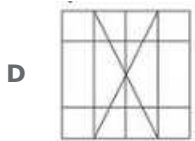
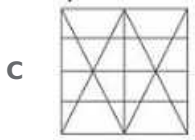
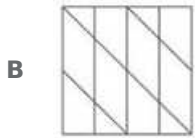
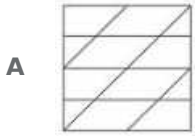
Now, the second figure resembles the above figure in blue colour.

=> Ans - (B)

Question 22

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

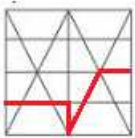




Answer: C

Explanation:

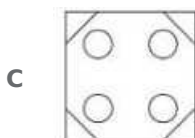
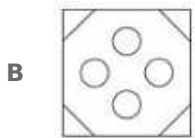
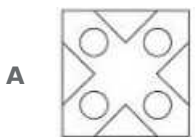
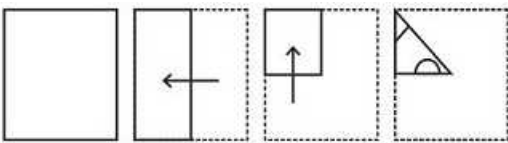
The question figure is embedded in the following figure in red colour.



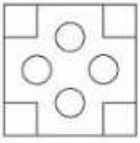
=> Ans - (C)

Question 23

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.



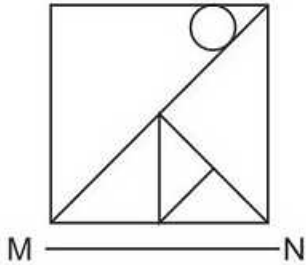
D



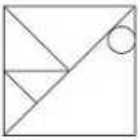
Answer: B

Question 24

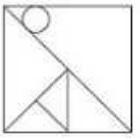
If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



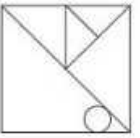
A



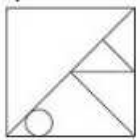
B



C



D



Answer: C

Explanation:

A horizontal mirror is placed, so the objects will turn upside down in the mirror image (eg - an object at top right will appear at bottom right). So, the right diagonal in the question figure will appear as left diagonal in the mirror image, and thus the first and last options are eliminated.

Also, the small circle at top right will appear at bottom right in the mirror, so the second options is also not possible.

=> Ans - (C)

Question 25

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 'K' can be represented by 42, 34 etc and 'Z' can be represented by 75, 86 etc. Similarly, you have to identify the set for the word 'RUBY'.

Matrix - I

| | 0 | 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|
| 0 | J | M | D | C | E |
| 1 | C | H | K | M | I |
| 2 | A | D | F | H | L |
| 3 | E | G | A | E | K |
| 4 | B | C | K | C | G |

Matrix - II

| | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|
| 5 | W | U | N | P | S |
| 6 | W | S | R | Z | W |
| 7 | Z | S | O | S | Y |
| 8 | X | Z | S | Y | R |
| 9 | O | U | S | U | U |

- A 42,31,76,68
- B 00,20,57,88
- C 30,12,66,67
- D 67,56,40,88

Answer: D

Explanation:

(A) : 42,31,76,68 = KGSZ

(B) : 00,20,57,88 = JANY

(C) : 30,12,66,67 = EKSR

(D) : 67,56,40,88 = **RUBY**

=> Ans - (D)

General Awareness

Instructions

For the following questions answer them individually

Question 26

From which of the following, is the GDP of a country not derived from?

- A Agricultural sector
- B Industrial sector
- C International sector
- D Service sector

Answer: C

Question 27

_____ is the set of all possible combinations of the two inputs that yield the same maximum possible level of output.

- A The Short Run
- B The Long Run
- C Isoquant
- D Average product

Answer: C

Question 28

_____ means that the President of India can refer any matter that is of public importance or that which involves interpretation of Constitution to Supreme Court for advice.

- A Original Jurisdiction
- B Writ Jurisdiction
- C Appellate Jurisdiction
- D Advisory Jurisdiction

Answer: D

Question 29

There are total _____ parliamentary seats (Rajya Sabha constituency) in Sikkim.

- A 11
- B 19
- C 10
- D 1

Answer: D

Question 30

Dara Shikoh was killed in conflict with his brother _____.

- A Jahangir
- B Aurangzeb
- C Babur
- D Shah Jahan

Answer: B

Question 31

The Arabic work of al-Biruni that gave an account of the subcontinent is called _____.

- A Kitab - Al Hind
- B Kitab - Al Bharat
- C Pustak - Al Hind
- D Pustak - Al Bharat

Answer: A

Question 32

How many union territories does India have as of June 2017?

- A 7
- B 6
- C 5
- D 4

Answer: A

Question 33

The northern plain of India is formed of _____.

- A metamorphic soil
- B igneous rocks
- C alluvial soil
- D old crystalline rocks

Answer: C

Question 34

Lion, Leopard and Tiger are all species of which genus?

- A Solanum
- B Panthera
- C Felis
- D Tigris

Answer: B

Question 35

_____ are made up of sclerenchymatous cells. These are generally absent in the primary phloem but are found in the secondary phloem.

- A Xylem fibres
- B Xylem parenchyma
- C Phloem parenchyma
- D Phloem fibres

Answer: D

Question 36

What type of a body plan does coelenterates, ctenophores and echinoderms have?

- A Annelida
- B Radial
- C Bilateral
- D Platyhelminthes

Answer: B

Question 37

If the speed of an object moving along a straight line is constant, its motion is said to be _____.

- A Uniform
- B Periodic
- C Circular
- D Non-uniform

Answer: A

Question 38

The strength of a force is usually expressed by its _____.

- A Motion
- B Direction
- C Interaction
- D Magnitude

Answer: D

Question 39

_____ is not a storage device.

- A iPod
- B Pen drives
- C Linux
- D Flash Disks

Answer: C

Question 40

Magnesium (Mg) + Oxygen (O₂) = ?

- A Mg₂O
- B MgO₄
- C O₂Mg
- D MgO

Answer: D

Question 41

What is the reaction between an acid and a base called?

- A Desalination
- B Crystallisation
- C Neutralisation
- D Sublimation

Answer: C

Question 42

According to an estimate, almost ___ percent forests have been lost in the tropics, compared to only 1 percent in the temperate region.

- A 20
- B 40
- C 60
- D 80

Answer: B

Question 43

_____ scheme launched by the Central Government is a new crop insurance scheme to boost farming sector in the country.

- A Soil Health Card

- B** Shyama Prasad Mukherji R-urban Mission
- C** Pradhan Mantri Fasal Bima Yojana
- D** National R-URBAN Mission

Answer: C

Question 44

Who discovered Proton?

- A** Ernest Rutherford
- B** Friedrich Miescher
- C** Henri Becquerel
- D** Henry Cavendish

Answer: A

Question 45

Who is the winner of 2017 Indian Premier League (Cricket)?

- A** Mumbai Indians
- B** Rising Pune Supergiant
- C** Delhi Daredevils
- D** Sunrisers Hyderabad

Answer: A

Question 46

In which city of India is Dhamek Stupa located?

- A** Pune
- B** Delhi
- C** Varanasi
- D** Hyderabad

Answer: C

Question 47

Which of the following was the winner of the Grammy Awards 2016 "Song of the Year"?

- A** Alright
- B** Blank Space
- C** Girl Crush

D Thinking Out Loud

Answer: D

Question 48

Which of the statements given below are correct?

- 1. The author of the novel 'Dodgers' is Don Winslow.**
- 2. The author of the novel 'Forty Thieves' is Bill Beverly.**
- 3. The author of the novel 'The Corrections' is Thomas Perry.**

A 1 and 2

B 2 and 3

C 1 and 3

D 1, 2 and 3

Answer: D

Question 49

What was Australia's rank in 2016 Human Development Index published by the United Nations Development Programme?

A 2

B 20

C 100

D 200

Answer: A

Question 50

The Samjhauta Express runs between Delhi to which city in Pakistan?

A Karachi

B Islamabad

C Quetta

D Lahore

Answer: D

English

Instructions

For the following questions answer them individually

Question 51

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'.

They did nothing (a:/ that was down the (b:/ dignity of princes. (c:/No Error (d:

- A 1
- B 2
- C 3
- D 4

Answer: B

Question 52

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'.

What are (a:/ you doing (b:/ by here? (c:/No Error (d:

- A 1
- B 2
- C 3
- D 4

Answer: C

Question 53

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.

Do you _____ own a copy of Shakespeare's Hamlet?

- A chance
- B chances
- C perchance
- D by chances

Answer: C

Question 54

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.

A police detective often finds himself in the position of having to _____ between a lie and a truth.

- A extinguish

- B** distinguish
- C** finish
- D** languish

Answer: B

Question 55

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

Commemorate

- A** Opprobrium
- B** Reproach
- C** Disrepute
- D** Celebrate

Answer: D

Question 56

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

Plebiscite

- A** Referendum
- B** Tyranny
- C** Despotism
- D** Monarchy

Answer: A

Question 57

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

Rampage

- A** Binge
- B** Frenzy
- C** Harmony
- D** Turmoil

Answer: C

Question 58

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

Blasphemous

- A Pious
- B Profane
- C Sacrilegious
- D Irreligious

Answer: A

Question 59

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

To have something on the brain

- A To be obsessed with something
- B To be ready with an immediate smart witty reply
- C To unable to solve a particularly difficult philosophical problem
- D To think wistfully about past life

Answer: A

Question 60

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

Not one's cup of tea

- A To stop having breakfast
- B To accept defeat even before attempting to take up the challenge
- C To be satisfied with less
- D Not one's choice or preference

Answer: D

Question 61

In the following question, out of the four alternatives, select the alternative which will improve the bracketed part of the sentence. In case no improvement is needed, select "no improvement".

The battle (to rage) for some time.

- A is raging
- B has been raged

- C had been raging
- D no improvement

Answer: C

Question 62

In the following question, out of the four alternatives, select the alternative which will improve the bracketed part of the sentence. In case no improvement is needed, select "no improvement".

She glanced back to make sure she (wasn't to be) observed.

- A wasn'tbe
- B weren't being
- C wasn'tbeing
- D no improvement

Answer: C

Question 63

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

The crime of betraying one's country

- A Treason
- B Frankness
- C Fidelity
- D Allegiance

Answer: A

Question 64

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

Fanatical and uncompromising pursuit of ideals

- A Nonpartisan
- B Zealotry
- C Neutral
- D Aloof

Answer: B

Question 65

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

- A Composure
- B Cumposure
- C Composore
- D Cumposore

Answer: A

Question 66

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

- A Alliviate
- B Aleviate
- C Alleviate
- D Aliviate

Answer: C

Question 67

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.

"Phew," said I, grabbing

X-cheerfully round my head

Y-at the halo of flies

Z-which buzzed

- A YZX
- B YXZ
- C XZY
- D XYZ

Answer: A

Question 68

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.

The investigations of the

X-peculiar place in the economy of the body

Y-physiologist and the psychologist

Z-have revealed that the brain holds a

- A YXZ
- B XZY

C XYZ

D YZX

Answer: D

Question 69

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

The choir really enjoys that piece.

A That piece are really enjoyed by the choir.

B That piece is really enjoyed by the choir.

C Enjoyment of that piece is done by the choir.

D Enjoying of that piece is done by the choir.

Answer: B

Question 70

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.

Akash said, "Mahesh has gone home."

A Akash said that Mahesh has gone home.

B Akash said then Mahesh had gone home.

C Akash said then Mahesh has gone home.

D Akash said that Mahesh had gone home.

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.

Most _____(1)_____ of all to the rambler on avian lore intent is the fact that there are many species and genera that are peculiar to the West, and _____(2)_____ new to him, keeping him constantly on the 'qui vive'.

_____(3)_____ Colorado you will look in vain for the common blue jay, so abundant in all parts of the East; but you will be more _____(4)_____ compensated by the presence of seven other species _____(5)_____ the jay household.

Question 71

(1)

A interesting

B interest

C interested

D interests

Answer: A

Question 72

(2)

A therefore

B because

C if

D for

Answer: A

Question 73

(3)

A On

B In

C Into

D Onto

Answer: B

Question 74

(4)

A then

B that

C than

D this

Answer: C

Question 75

(5)

A for

B to

C of

D off

Answer: C

Mathematics

Instructions

For the following questions answer them individually

Question 76

What is the largest 4 digit number that is exactly divisible by 93?

- A 9961
- B 9971
- C 9981
- D 9951

Answer: D

Explanation:

Largest 4 digit number = 9999

$$9999/93 = 107.52$$

$$\text{So largest 4 digit multiple of 93} = 107 \times 93 = 9951$$

So the answer is option D.

Question 77

A, B and C can finish a job working alone in 20, 30 and 60 days respectively. They all work together for 1 day, then A and B quit. How many days C working alone will take to finish the remaining part of the job?

- A 60
- B 54
- C 6
- D 27

Answer: B

Explanation:

Let total work = LCM of 20, 30 & 60 = 60 units

$$\text{Efficiency of A} = 60/20 = 3$$

$$\text{Efficiency of B} = 60/30 = 2$$

$$\text{Efficiency of C} = 60/60 = 1$$

In 1 day they can complete $(3+2+1)=6$ units of work

$$\text{Remaining work} = 60 - 6 = 54$$

$$\text{C alone can complete the work in } 54/1 = 54 \text{ days}$$

So the answer is option B.

Question 78

What is the area (in sq cm) of a rectangle of perimeter 90 cm and breadth 20 cm?

- A 500
- B 400
- C 250
- D 450

Answer: A

Explanation:

Let length of rectangle = l cm and breadth = $b = 20$ cm

Perimeter of rectangle = $2(l + b) = 90$

$$\Rightarrow l + 20 = \frac{90}{2} = 45$$

$$\Rightarrow l = 45 - 20 = 25 \text{ cm}$$

\therefore Area of rectangle = lb

$$= 25 \times 20 = 500 \text{ cm}^2$$

\Rightarrow Ans - (A)

Question 79

If the selling price of an item is Rs 9750 after getting a discount of 25%, then what was its marked price (in Rs)?

- A 13000
- B 12187
- C 14000
- D 13187

Answer: A

Explanation:

Let the marked price = Rs. $100x$

Discount % = 25%

$$\Rightarrow \text{Selling price} = \frac{75}{100} \times 100x = 9750$$

$$\Rightarrow 75x = 9750$$

$$\Rightarrow x = \frac{9750}{75} = 130$$

\therefore Marked price = $100 \times 130 = \text{Rs. } 13000$

\Rightarrow Ans - (A)

Question 80

If $3A = 2B = 4C$; then what is $A : B : C$?

- A 3 : 2 : 4
- B 6 : 4 : 3
- C 4 : 6 : 3

D 2 : 3 : 4

Answer: C

Explanation:

$$\text{Let } 3A = 2B = 4C = k$$

$$\Rightarrow A = \frac{k}{3}, B = \frac{k}{2}, C = \frac{k}{4}$$

$$\Rightarrow \text{Ratio of } A : B : C = \frac{k}{3} : \frac{k}{2} : \frac{k}{4}$$

$$= \frac{1}{3} : \frac{1}{2} : \frac{1}{4}$$

L.C.M. of 3,2 and 4 = 12, thus multiplying by 12, we get :

$$= \frac{12}{3} : \frac{12}{2} : \frac{12}{4}$$

$$= 4 : 6 : 3$$

\Rightarrow Ans - (C)

Question 81

The average cost of 5 items in a shopping list is Rs 650. If one more item whose cost is Rs 1400 is added to the list what will be the new average (in Rs)?

A 775

B 875

C 725

D 825

Answer: A

Explanation:

Average cost of 5 items = Rs. 650

$$\Rightarrow \text{Total cost of 5 items} = 650 \times 5 = \text{Rs. } 3250$$

$$\text{New cost when an item with cost Rs. 1400 is added} = 3250 + 1400 = \text{Rs. } 4650$$

$$\therefore \text{New average} = \frac{4650}{6} = \text{Rs. } 775$$

\Rightarrow Ans - (A)

Question 82

If a vendor sells apples at Rs 170 per kg he suffers 15% loss. If he sells at Rs 230 per kg, then what is his profit percentage?

A 15

B 10

C 5

D 20

Answer: A

Explanation:

Let cost price of 1 kg of apples = Rs. $100x$

Loss % = 15%

$$\Rightarrow \text{Selling price} = \frac{85}{100} \times 100x = 170$$

$$\Rightarrow 85x = 170$$

$$\Rightarrow x = \frac{170}{85} = 2$$

Thus, cost price = $100 \times 2 = \text{Rs. } 200$

If selling price = Rs. 230

$$\Rightarrow \text{Profit \%} = \frac{230-200}{200} \times 100$$

$$= \frac{30}{200} \times 100 = 15\%$$

\Rightarrow Ans - (A)

Question 83

If 40 is 0.05% of x, then what is the value of x?

A 80000

B 8000

C 800

D 80

Answer: A

Explanation:

Expression : 0.05% of $x = 40$

$$\Rightarrow \frac{0.05}{100} \times x = 40$$

$$\Rightarrow x = \frac{4000}{0.05}$$

$$\Rightarrow x = 80,000$$

\Rightarrow Ans - (A)

Question 84

A taxi going at 90 km/hr takes 35 minutes to travel a certain distance. By how much should it increase its speed (in km/hr) to travel the same distance in 21 minutes?

A 60

B 150

C 120

D 90

Answer: A

Explanation:

Speed of car = 90 km/hr

Time taken by car = 35 minutes = $\frac{35}{60}$ hr

\Rightarrow Distance travelled = speed \times time

$$= 90 \times \frac{35}{60} = 52.5 \text{ km}$$

Thus, speed required to travel the same distance in 21 minutes ($\frac{21}{60}$ hr) = $\frac{52.5 \times 60}{21}$

$$= 150 \text{ km/hr}$$

$$\therefore \text{Increase in speed} = 150 - 90 = 60 \text{ km/hr}$$

=> Ans - (A)

Question 85

If compound interest received on a certain amount in the 2nd year is Rs 1200, what will be the compound interest (in Rs) for the 4th year on the same amount at 10% rate of interest?

A 1452

B 1320

C 1552

D 1420

Answer: A

Explanation:

Let the sum = P = Rs. $100x$

Rate of interest = 10%

Compound interest in the 2nd year = (Amount received at the end of 2 years) - (Amount received after 1st year)

$$\Rightarrow P\left(1 + \frac{r}{100}\right)^2 - P\left(1 + \frac{r}{100}\right)^1 = 1200$$

$$\Rightarrow [100x\left(1 + \frac{10}{100}\right)^2] - [100x\left(1 + \frac{10}{100}\right)] = 1200$$

$$\Rightarrow [100x\left(\frac{11}{10}\right)^2] - [100x\left(\frac{11}{10}\right)] = 1200$$

$$\Rightarrow 121x - 110x = 1200$$

$$\Rightarrow x = \frac{1200}{11}$$

\therefore Compound interest for the 4th year

$$= P\left(1 + \frac{r}{100}\right)^4 - P\left(1 + \frac{r}{100}\right)^3$$

$$= [100x\left(1 + \frac{10}{100}\right)^4] - [100x\left(1 + \frac{10}{100}\right)^3]$$

$$= [100x\left(\frac{11}{10}\right)^4] - [100x\left(\frac{11}{10}\right)^3]$$

$$= (100x \times \frac{11^3}{10^3})\left(\frac{11}{10} - 1\right)$$

$$= (100x \times \frac{11^3}{10^3})\left(\frac{1}{10}\right)$$

$$= [(100 \times \frac{1200}{11})\left(\frac{11^3}{10000}\right)]$$

$$= 12 \times 121 = \text{Rs. } 1452$$

=> Ans - (A)

Question 86

If $17/3 + [3(2x - 5/3)]/2 = 1/6$, then what is the value of x?

A 1

B 3

C -3

D -1

Answer: D

Explanation:

$$\text{Expression : } \frac{17}{3} + \left[\frac{3}{2}(2x - 3) \right] = \frac{1}{6}$$

$$= \frac{17}{3} + \left[2 \left(\frac{6x-5}{3} \right) \right] = \frac{1}{6}$$

$$= \frac{34}{6} + \left(\frac{18x-15}{6} \right) = \frac{1}{6}$$

$$= 34 + 18x - 15 = 1$$

$$= 18x = 1 + 15 - 34 = -18$$

$$= x = \frac{-18}{18} = -1$$

=> Ans - (D)

Question 87

If $a + b = 5$ and $ab = 6$, then what is the value of $a^3 + b^3$?

A 32

B 38

C 35

D 34

Answer: C

Explanation:

Given : $ab = 6$ -----(i)

Also, $a + b = 5$ -----(ii)

Cubing both sides, we get :

$$\Rightarrow (a + b)^3 = (5)^3$$

$$\Rightarrow a^3 + b^3 + 3ab(a + b) = 125$$

Substituting values from equation (i) and (ii)

$$\Rightarrow a^3 + b^3 + 3(6)(5) = 125$$

$$\Rightarrow a^3 + b^3 = 125 - 90 = 35$$

=> Ans - (C)

Question 88

The sum of a fraction and 3 times its reciprocal is 37/10. What is the fraction?

A 5/2

B 2/5

C 5/4

D 4/5

Answer: A

Explanation:

Let the fraction be x

According to ques,

$$\Rightarrow x + \frac{3}{x} = \frac{37}{10}$$

$$\Rightarrow \frac{x^2+3}{x} = \frac{37}{10}$$

$$\Rightarrow 10x^2 + 30 = 37x$$

$$\Rightarrow 10x^2 - 37x + 30 = 0$$

$$\Rightarrow 10x^2 - 25x - 12x + 30 = 0$$

$$\Rightarrow 5x(2x - 5) - 6(2x - 5) = 0$$

$$\Rightarrow (2x - 5)(5x - 6) = 0$$

$$\Rightarrow x = \frac{5}{2}, \frac{6}{5}$$

\Rightarrow Ans - (A)

Question 89

The 4th and 7th term of an arithmetic progression are 11 and -4 respectively. What is the 15th term?

A -49

B -44

C -39

D -34

Answer: B

Explanation:

Let the first term of an AP = a and the common difference = d

$$4\text{th term of AP} = A_4 = a + 3d = 11 \text{ -----(i)}$$

$$7\text{th term} = A_7 = a + 6d = -4 \text{ -----(ii)}$$

Subtracting equation (i) from (ii), we get :

$$\Rightarrow 6d - 3d = -4 - 11$$

$$\Rightarrow 3d = -15$$

$$\Rightarrow d = \frac{-15}{3} = -5$$

$$\text{Substituting it in equation (i), } \Rightarrow a = 11 - 3(-5) = 11 + 15 = 26$$

$$\therefore 15\text{th term} = A_{15} = a + 14d$$

$$= 26 + 14(-5) = 26 - 70 = -44$$

\Rightarrow Ans - (B)

Question 90

What is the reflection of the point (5 , -1) in the line $y = 2$?

A (5, -5)

B (-5, -5)

C (5, 5)

D (-5, 5)

Answer: C

Explanation:

Reflection of point (x,y) in line y=a is (x,-y+2a)

Now, Reflection of point (5,-1) in line y=2

$$= [5, 1+2(2)] = (5, 5)$$

=> Ans - (C)

Question 91

In what ratio is the segment joining points (2, 3) and (-2, 1) divided by the Y-axis?

A 1 : 2

B 1 : 1

C 3 : 1

D 2 : 3

Answer: B

Explanation:

Using section formula, the coordinates of point that divides line joining A = (x₁, y₁) and B = (x₂, y₂) in the ratio a : b

$$= \left(\frac{ax_2 + bx_1}{a+b}, \frac{ay_2 + by_1}{a+b} \right)$$

Let the ratio in which the segment joining (2,3) and (-2,1) divided by the y-axis = k : 1

Since, the line segment is divided by y-axis, thus x coordinate of the point will be zero, let the point of intersection = (0, y)

Now, point P (0,y) divides (2,3) and (-2,1) in ratio = k : 1

$$\Rightarrow 0 = \frac{(-2 \times k) + (2 \times 1)}{k+1}$$

$$\Rightarrow -2k + 2 = 0$$

$$\Rightarrow k = \frac{2}{2} = 1$$

∴ Required ratio = 1 : 1

=> Ans - (B)

Question 92

What is the slope of the line 2x - 5y = 12?

A 2/5

B 5/2

C -2/5

D -5/2

Answer: A

Explanation:

Slope of line $ax + by = c$ is = $-\frac{a}{b}$

$$\Rightarrow \text{Slope of } 2x - 5y = 12 \text{ is } = \frac{-2}{-5}$$

$$= \frac{2}{5}$$

\Rightarrow Ans - (A)

Question 93

Triangle ΔXYZ is similar to ΔPQR . If $XY:PQ=5:1$. If Area of ΔPQR is 5 sq cm, what is the area (in sq cm) of ΔXYZ ?

A 125

B 120

C 100

D 64

Answer: A

Explanation:

Given : $\Delta XYZ \sim \Delta PQR$ and $XY:PQ=5:1$

To find : $\text{ar}(\Delta XYZ) = x = ?$

Solution : Ratio of areas of two similar triangles is equal to the ratio of square of the corresponding sides.

$$\Rightarrow \frac{\text{ar}(\Delta XYZ)}{\text{ar}(\Delta PQR)} = \left(\frac{XY}{PQ}\right)^2$$

$$\Rightarrow \frac{x}{5} = \left(\frac{5}{1}\right)^2$$

$$\Rightarrow \frac{x}{5} = \frac{25}{1}$$

$$\Rightarrow x = 25 \times 5 = 125 \text{ cm}^2$$

\Rightarrow Ans - (A)

Question 94

What is the value of $\text{Cot } 60^\circ - \text{Sec } 30^\circ$?

A $-1/3$

B $-1/\sqrt{3}$

C $1/\sqrt{3}$

D $1/3$

Answer: B

Explanation:

Expression : $\text{Cot } 60^\circ - \text{Sec } 30^\circ$

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

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

\Rightarrow Ans - (B)

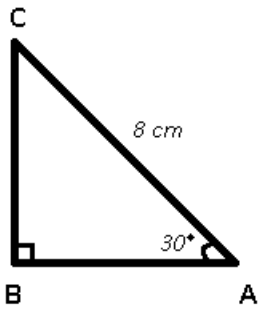
Question 95

ΔABC is right angled at B. If $m\angle A = 30^\circ$. What is the length (in cm) of AB, if $AC = 8$ cm?

- A $2\sqrt{3}$
- B $4\sqrt{3}$
- C $4/\sqrt{3}$
- D $2/\sqrt{3}$

Answer: B

Explanation:



Given : $AC = 8 \text{ cm}$ and $\angle A = 30^\circ$

To find : $AB = ?$

Solution : In $\triangle ABC$,

$$\Rightarrow \cos(30^\circ) = \frac{AB}{AC}$$

$$\Rightarrow \frac{\sqrt{3}}{2} = \frac{AB}{8}$$

$$\Rightarrow AB = \frac{8\sqrt{3}}{2} = 4\sqrt{3} \text{ cm}$$

\Rightarrow Ans - (B)

Question 96

If $\cot \theta = 24/7$, then what is the value of $\sec \theta$?

- A $7/25$
- B $25/24$
- C $8/25$
- D $9/25$

Answer: B

Explanation:

$$\text{Given : } \cot \theta = \frac{24}{7}$$

$$\Rightarrow \tan \theta = \frac{7}{24}$$

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

$$\Rightarrow \sec^2 \theta = 1 + \left(\frac{7}{24}\right)^2$$

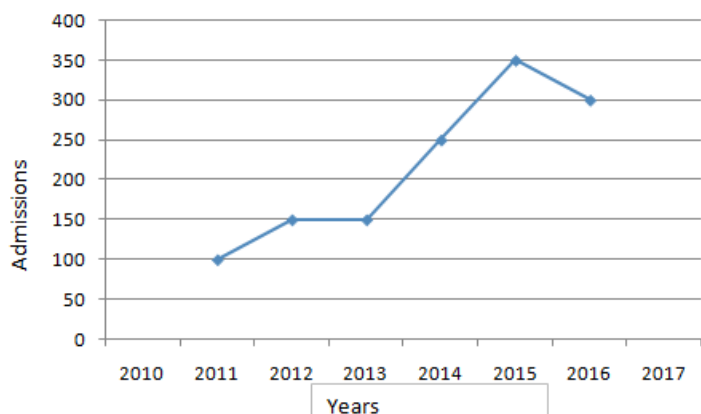
$$\Rightarrow \sec^2 \theta = 1 + \frac{49}{576} = \frac{625}{576}$$

$$\Rightarrow \sec \theta = \sqrt{\frac{625}{576}} = \frac{25}{24}$$

\Rightarrow Ans - (B)

Instructions

The line graph shows the record of number of admissions to a certain coaching center from 2011 to 2016. Study the diagram and answer the following questions.



Question 97

In how many years was the number of admissions greater than that of the previous year?

- A 2
- B 3
- C 1
- D 4

Answer: B

Explanation:

Clearly, in 2012, 2014 and 2015, i.e. for 3 years, the number of admissions were greater than that of the previous year.

=> Ans - (B)

Question 98

Ignoring year 2016 how many students took admission in the coaching centre since its inception in the year 2011?

- A 1300
- B 1200
- C 900
- D 1000

Answer: D

Explanation:

Total admissions in the coaching centre from 2011 to 2015

$$= 100 + 150 + 150 + 250 + 350$$

$$= 1000$$

=> Ans - (D)

Question 99

Admissions in the year 2014 grew by _____ percent as compared to the previous year.

- A 50
- B 100
- C 40
- D 66.67

Answer: D

Explanation:

Admissions in 2013 = 150

Admissions in 2014 = 250

$$\Rightarrow \text{Required \% increase} = \frac{250-150}{150} \times 100$$

$$= \frac{2}{3} \times 100 = 66.67\%$$

\Rightarrow Ans - (D)

Question 100

If fees charged by the coaching centre was Rs 10000 for the first 3 years and Rs 12000 for the next three years then what is the total fees (in Rs. Crores) collected by the coaching centre in the last six years?

- A 1.48
- B 1.38
- C 1.28
- D 1.18

Answer: A

Explanation:

Total admissions in first 3 years = 100 + 150 + 150 = 400

$$\Rightarrow \text{Fees collected in the first 3 years} = 10,000 \times 400 = \text{Rs. } 40,00,000$$

Total admissions in next 3 years = 250 + 350 + 300 = 900

$$\Rightarrow \text{Fees collected in the next 3 years} = 12,000 \times 900 = \text{Rs. } 1,08,00,000$$

\therefore Total fees collected by the coaching centre in the last six years = Rs. (40,00,000 + 1,08,00,000)

$$= \text{Rs. } 1,48,00,000 = \text{Rs. } 1.48 \text{ crores}$$

\Rightarrow Ans - (A)

