

## **2017 SSC CGL 20 Aug Shift-1**

# Reasoning

## Instructions

For the following questions answer them individually

### Question 1

Select the related word from the given alternatives.

Spring : Spiral :: Bangle : ?

- A Glass
- B Circle
- C Ornament
- D Gold

**Answer:** B

### Explanation:

A spring is of a spiral shape, while the shape of a bangle is circular.

=> Ans - (B)

### Question 2

Select the related letters from the given alternatives.

WUV : TRS :: QOP : ?

- A XYZ
- B CBA
- C ABZ
- D NLM

**Answer:** D

### Explanation:

WUV : TRS

The pattern is =

W	U	V
(-3)	(-3)	(-3)
T	R	S

Similarly, for QOP :

Q	O	P
(-3)	(-3)	(-3)
N	L	M

=> Ans - (D)

### Question 3

Select the related number from the given alternatives.

7.25 : 7.75 :: 9 : ?

- A 9.5

- B** 7
- C** 10
- D** 8.5

**Answer:** A

**Explanation:**

Expression =  $7.25 : 7.75 :: 9 : ?$

The pattern followed is =  $n : n + 0.5$

Eg =  $7.25 : 7.25 + 0.5 = 7.25 : 7.75$

Similarly,  $9 + 0.5 = 9.5$

=> Ans - (A)

**Question 4**

**Select the odd word from the given alternatives.**

- A** Sparrow
- B** Pigeon
- C** Crow
- D** Housefly

**Answer:** D

**Explanation:**

Sparrow, Pigeon and crow are birds while housefly is an insect and thus it is the odd one out.

=> Ans - (D)

**Question 5**

**Select the odd letters from the given alternatives.**

- A** RQS
- B** XWV
- C** MLN
- D** FEG

**Answer:** B

**Explanation:**

(A) : R (-1 letters) = Q (+2 letters) = S

(B) : X (-1 letters) = W (-1 letters) = V

(C) : M (-1 letters) = L (+2 letters) = N

(D) : F (-1 letters) = R (+2 letters) = G

=> Ans - (B)

**Question 6**

**Select the odd number from the given alternatives.**

- A 700
- B 250
- C 350
- D 640

**Answer:** D

**Explanation:**

All the numbers except 640 are divisible by 50, hence it is the odd one.

=> Ans - (D)

**Question 7**

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

**Oxygen, Toil, Arouse, Arson, Tenuous, ?**

- A Onion
- B Lustrous
- C Lion
- D Onto

**Answer:** B

**Explanation:**

Expression : Oxygen, Toil, Arouse, Arson, Tenuous, ?

The position of the letter 'o' in each term is shifted one place to the right.

Eg : **O**xxygen (1st place) , **T**oil (2nd place) , **A**rouse (3rd place) , **A**rson (4th place) , **Tenu**ous (5th place)

Thus, in the next term, 'o' will be at 6th position, and among the options, next word = Lustr **o**us

=> Ans - (B)

**Question 8**

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

**ZYX, VUT, QPO, MLK, HGF, ?**

- A DCB
- B CBA
- C BCD
- D EDC

**Answer:** A

**Explanation:**

Expression : ZYX, VUT, QPO, MLK, HGF, ?

The pattern followed is that English alphabets are written in reverse order in groups of 3. Also, after 1st term one letter is missing, after 2nd term 2 letters are missing, then again after 3rd term one letter is missing and so on.

Thus, after 5 terms, missing letter is = E

Thus, missing term = **DCB**

=> 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.**

**400, -200, 100, ? , 25, -12.5**

**A** -50

**B** 50

**C** 75

**D** -75

**Answer:** A

### Explanation:

The pattern is that each number is divided by -2

$$400 \div -2 = -200$$

$$-200 \div -2 = 100$$

$$100 \div -2 = \mathbf{-50}$$

$$-50 \div -2 = 25$$

$$25 \div -2 = -12.5$$

=> Ans - (A)

### Question 10

**Bhavin's birthday is on Monday 29th May. On what day of the week will be Rachit's Birthday in the same year if Rachit was born on 17th November?**

**A** Saturday

**B** Wednesday

**C** Sunday

**D** Friday

**Answer:** D

### Explanation:

According to the question, 29th May is Monday

$$\text{Number of days left in May} = 31 - 29 = 2$$

$$\text{Similarly, odd days from 29th May till 17th November} = (2 + 30 + 31 + 31 + 30 + 31 + 17) \% 7$$

$$= 2 + 2 + 3 + 3 + 2 + 3 + 3 = 18$$

Now, dividing 18 by 7, remainder = 4

Thus, day on 17th November = Monday (+4) = Friday

=> Ans - (D)

**Question 11**

The weights of 4 boxes are 30, 70, 60 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 250
- B 200
- C 190
- D 220

**Answer:** B

**Explanation:**

Weights of 4 boxes = 30, 70, 60 and 90 kilograms

(A) :  $250 = 30 + 60 + 70 + 90$

(B) :  $200 =$  not possible

(C) :  $190 = 30 + 70 + 90$

(D) :  $220 = 60 + 70 + 90$

=> Ans - (B)

**Question 12**

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

- A EMITS
- B TEAMS
- C SUITE
- D QUIET

**Answer:** B

**Explanation:**

The word MYSTIQUE does not contain any 'A', and thus the word 'Teams' cannot be formed.

=> Ans - (B)

**Question 13**

If **IMPLORE** is coded as **GKNJMPC**, then how will **HUB** be coded as?

- A AWN
- B WAO
- C FSZ
- D TEY

**Answer:** C

**Explanation:**

IMPLORE is coded as GKNJMPC

The pattern followed is :

I	M	P	L	O	R	E
(-2)	(-2)	(-2)	(-2)	(-2)	(-2)	(-2)
G	K	N	J	M	P	C

Similarly, for HUB :

H	U	B
(-2)	(-2)	(-2)
F	S	Z

=> Ans - (C)

#### Question 14

In a certain code language, '+' represents 'x', '-' represents '+', 'x' represents '÷' and '÷' represents '-'. What is the answer to the following question?

$$72 \times 9 - 14 + 2 = ?$$

- A 20
- B 86
- C 30
- D 36

**Answer:** D

#### Explanation:

$$\text{Expression} = 72 \times 9 - 14 + 2 = ?$$

$$\equiv 72 \div 9 + 14 \times 2$$

$$= 8 + 28 = 36$$

=> Ans - (D)

#### Question 15

If  $52 \% 32 = 40$ ,  $22 \% 20 = 4$  then what is the value of  $15 \% 11 = ?$

- A 39
- B 11
- C 31
- D 8

**Answer:** D

#### Explanation:

The pattern followed is that the positive difference of the number is multiplied by 2.

$$\text{Eg : } 52 \% 32 = (52 - 32) \times 2 = 20 \times 2 = 40$$

$$\text{and } 22 \% 20 = (22 - 20) \times 2 = 2 \times 2 = 4$$

$$\text{Similarly, } 15 \% 11 = (15 - 11) \times 2 = 4 \times 2 = 8$$

=> Ans - (D)

**Question 16**

Select the missing number from the give responses ?

216	16	49
3	4	?
6	2	7

- A 42
- B 56
- C 2
- D 5

**Answer:** C

**Explanation:**

The pattern is that :  $6^3 = 216$

and  $2^4 = 16$

Similarly,  $7^x = 49$

$\Rightarrow 7^x = 7^2$

$\Rightarrow x = 2$

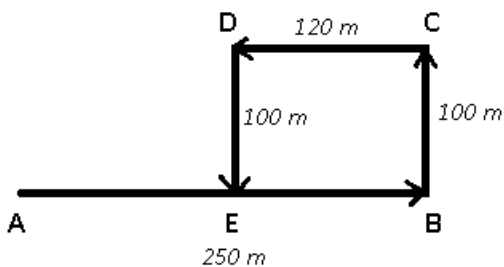
$\Rightarrow$  Ans - (C)

**Question 17**

A woman in a shopping complex walks 250 m East, then she turns North and walks 100 m, then she turns West and walks 120 m, then she turns to her left and walks 100 m. Where is she now with reference to her starting position?

- A 130 m East
- B 130 m West
- C 370 m East
- D 370 m West

**Answer:** A

**Explanation:**

Let the woman starts from point A. She walks 250 m east and reaches B, then she turns north and walks for 100 m and reaches point C.

Then, she turns left and walks for 120 m and finally stops at point E.

Thus,  $AE = 250 - 120 = 130$  m



∴ The woman is 130 m to the east of her starting point.

=> Ans - (A)

### Question 18

In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems 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 1 : All drinks are food.**

**Statement 2 : No eatables are drinks.**

**Conclusion I : Some food are eatables.**

**Conclusion II : Some eatables are food.**

**A** Only conclusion I follows

**B** Only conclusion II follows

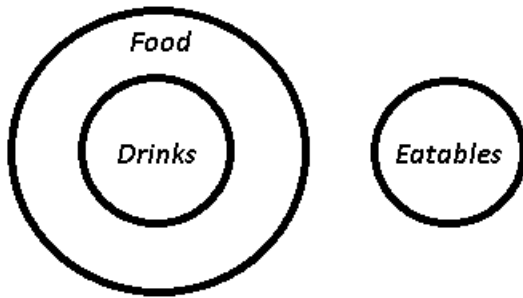
**C** Both I and II follow

**D** Neither I nor II follows

**Answer: D**

### Explanation:

The venn diagram for above statements is :



Conclusion I : Some food are eatables = false

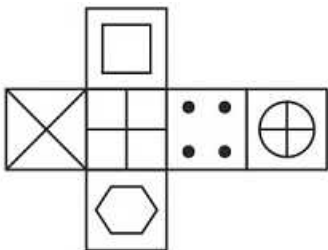
Conclusion II : Some eatables are food = false

Thus, neither I nor II follows

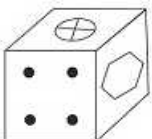
=> Ans - (D)

### Question 19

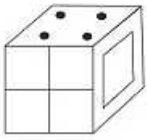
Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure?



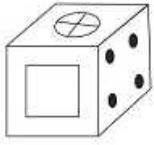
**A**



B



C



D None of these

**Answer:** D

**Explanation:**

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

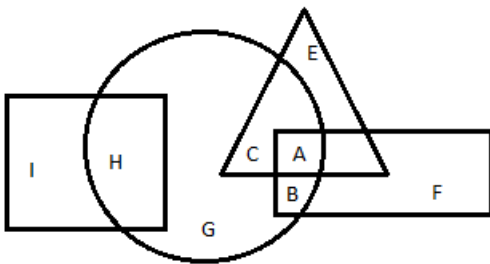


Since, the opposite sides cannot be adjacent in the cube, thus all the cubes are possible.

=> Ans - (D)

**Question 20**

In the following figure, square represents Dentists, triangle represents Collectors, circle represents Indians and rectangle represents Women. Which set of letters represents Indians who are either collectors or women?



A A,B,C

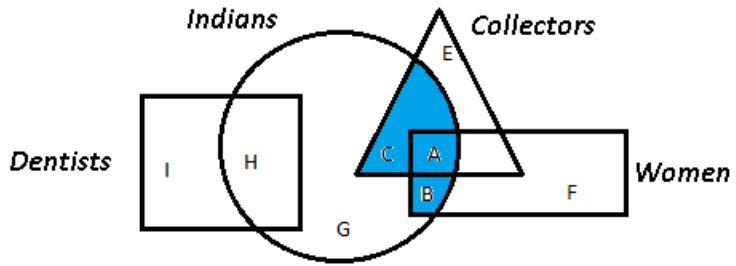
B D,B,E

C C,G,H

D E,F,I

**Answer:** A

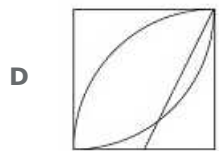
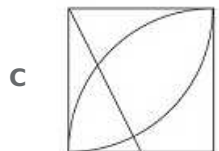
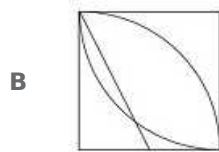
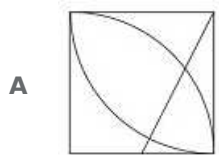
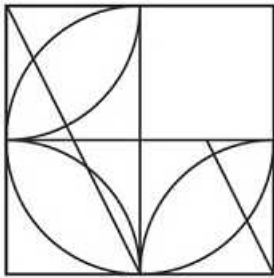
**Explanation:**



Indians who are either collectors or women are represented by blue region =  $A + B + C$

$\Rightarrow$  Ans - (A)

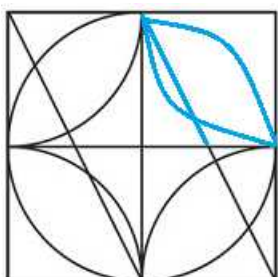
**Question 21**



**Answer: B**

**Explanation:**

When we complete the above figure, we get :

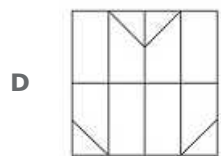
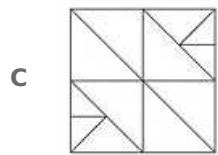
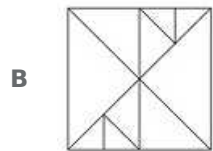
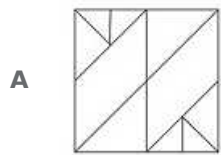
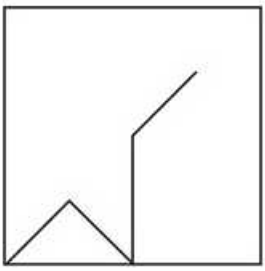


Now, the second figure resembles the above missing part in blue colour.

=> Ans - (B)

### Question 22

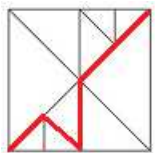
From the given answer select in one in which the question figure is hidden / embedded



**Answer:** B

### Explanation:

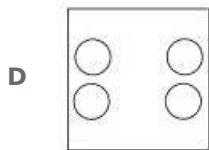
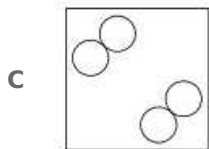
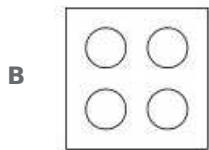
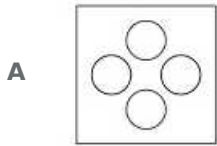
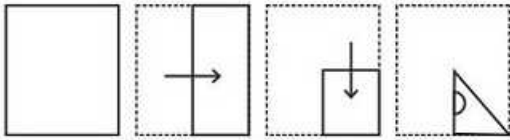
The question figure is embedded in the following figure :



=> Ans - (B)

**Question 23**

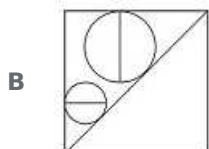
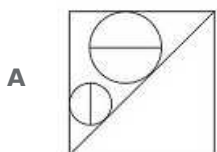
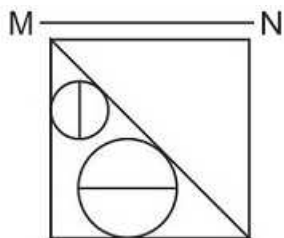
A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.

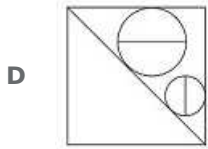
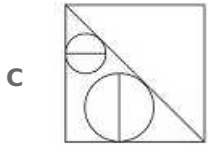


**Answer: A**

**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?





**Answer: A**

**Explanation:**

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

Also, the bigger circle will have horizontal diagonal and smaller one will have vertical, so the second option is also not possible.

=> Ans - (A)

**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 13, 34 etc and 'Z' can be represented by 85, 79 etc. Similarly, you have to identify the set for the word 'PLOT'.

**Matrix - I**

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

**Matrix - II**

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

**A** 58,14,57,87

**B** 44,04,76,86

**C** 03,23,86,69

**D** 23,04,99,99

**Answer: A**

**Explanation:**

(A) : 58,14,57,87 = **PLOT**

(B) : 44,04,76,86 = MAWN

(C) : 03,23,86,69 = IGNY

(D) : 23,04,99,99 = GAXX

=> Ans - (A)

**General Awareness**

### Instructions

For the following questions answer them individually

#### Question 26

The demand for a normal good increases with \_\_\_\_\_ in the consumer's income.

- A increase
- B decrease
- C constant
- D double

**Answer:** A

#### Question 27

Short run marginal cost curve cuts the average variable cost curve from \_\_\_\_\_ at the minimum point of average variable cost.

- A top
- B below
- C right
- D left

**Answer:** B

#### Question 28

"Forests" is listed in the \_\_\_\_\_ list given in the Seventh Schedule in the Constitution of India.

- A Union
- B State
- C Global
- D Concurrent

**Answer:** D

#### Question 29

Which Fundamental Right in the Indian Constitution states that all persons shall be equally protected by the laws of the country?

- A Right to Equality
- B Right to Freedom
- C Right against Exploitation
- D Right to Freedom of Religion

**Answer:** A

**Question 30**

**Which Mughal emperor was imprisoned for the rest of his life by Aurangzeb.**

- A** Akbar
- B** Shah Jahan
- C** Jahangir
- D** Babur

**Answer: B**

**Question 31**

**Name the Commission that came to India in 1928 to reform India's constitutional system.**

- A** Rowlatt Act
- B** Pitt's India Act
- C** Partition of Bengal
- D** Simon Commission

**Answer: D**

**Question 32**

**\_\_\_\_\_ is an example of intrusive igneous rock.**

- A** Conglomerate
- B** Shale
- C** Sandstone
- D** Granite

**Answer: D**

**Question 33**

**The longitudinal valley lying between lesser Himalaya and the \_\_\_\_\_ are known as Duns.**

- A** Himadri
- B** Himachal
- C** Shiwaliks
- D** Tibet

**Answer: C**



**Question 34**

**A multicellular organism grows by \_\_\_\_\_.**

- A** Cell addition
- B** Cell explosion
- C** Cell implosion
- D** Cell division

**Answer: D**

**Question 35**

**The male sex organs in a flower is the \_\_\_\_\_.**

- A** Zoospores
- B** stamen
- C** pistil
- D** Chlorophyceae

**Answer: B**

**Question 36**

**In animals like Annelids, Molluscs, organs have associated to form functional systems, each system concerned with a specific physiological function. This pattern is called which system level of organization ?**

- A** organ
- B** open
- C** closed
- D** coelom

**Answer: A**

**Question 37**

**Contact force is another name for \_\_\_\_\_.**

- A** Friction
- B** Magnetic force
- C** Electrostatic force
- D** Muscular force

**Answer: D**

**Question 38**

**The force of friction between two surfaces will increase if:**

- A** a layer of lubricant is kept between the two surfaces
- B** the two surfaces are pressed harder
- C** air gap is created between the two surfaces
- D** irregularities on both the surfaces are removed

**Answer: B**

**Question 39**

**An absolute \_\_\_\_\_ contains the complete address of a file on the Internet.**

- A** JavaScript
- B** URL
- C** SQL
- D** String

**Answer: B**

**Question 40**

**A change in which no new substances are formed is called \_\_\_\_\_.**

- A** Physical Change
- B** Chemical Change
- C** Rusting
- D** Galvanisation

**Answer: A**

**Question 41**

**The property of metal by which it can be drawn into wires is called \_\_\_\_\_.**

- A** maleability
- B** viscosity
- C** ductility
- D** tensile strength

**Answer: C**

**Question 42**

\_\_\_\_\_ is the number of deaths in the population during a given period.

- A Natality
- B Mortality
- C Immigration
- D Emigration

**Answer:** B

**Question 43**

\_\_\_\_\_ scheme by the Central Government aims at setting up an organized rural Panchayat in order to make the villages more self-sustained.

- A Gram Uday Se Bharat Uday Abhiyan
- B Pradhan Mantri Ujjwala Yojana
- C Pradhan Mantri Surakshit Matritva Yojana
- D Vidyanjali Yojana

**Answer:** A

**Question 44**

**Who discovered Circulatory System?**

- A Thomas Edison
- B William Harvey
- C Robert Hooke
- D Robert Boyles

**Answer:** B

**Question 45**

**Which country did India lose to in the semi finals of the Men's Cricket World Cup 2015?**

- A Sri Lanka
- B New Zealand
- C Pakistan
- D Australia

**Answer:** D

**Question 46**

**Buland Darwaza is located in?**

- A West Bengal
- B Gujarat
- C Uttar Pradesh
- D Tamil Nadu

**Answer:** C

**Question 47**

**Which of the following award is given for distinguished service in any field including service rendered by the Government servants?**

- A Ashok Chakra
- B Dada Saheb Phalke Awards
- C Arjuna Award
- D Padma Shri

**Answer:** D

**Question 48**

**Which of the statements given below are correct?**

1. The author of 'The Great Indian Novel' is A.P.J. Abdul Kalam.
2. The author of 'A Foreign Policy For India' is I.K Gujral.
3. 'Wings of Fire' is an Autobiography of A.P.J. Abdul Kalam.

- A 1 and 2
- B 2 and 3
- C 1 and 3
- D 1, 2 and 3

**Answer:** B

**Question 49**

**In April 2017, diplomatic ties were re-established after 37 years between Cuba and \_\_\_\_\_.**

- A India
- B Morocco
- C Sri Lanka
- D USA

**Answer:** B

**Question 50**

**Nepal shares a border with which other country besides India?**

- A China
- B Bhutan
- C Bangladesh
- D Afghanistan

**Answer:** A

## 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'.**

**The phone that (a:/my father bought is different (b:/than your.(c:/No Error (d:**

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

**Answer:** C

### 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'.**

**As soon as (a:/I reach my office (b:/I will mail you the files.(c:/No Error (d:**

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

**Answer:** D

### 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.**

**Because she had a \_\_\_\_\_ demeanour, she was a desirable friend.**

- A pleasant

- B** severe
- C** mean
- D** nasty

**Answer:** A

**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.**

**If your child has not met the \_\_\_\_\_ vaccination requirements, he or she will not be allowed to attend public school.**

- A** optional
- B** referral
- C** compulsory
- D** guideline

**Answer:** C

**Question 55**

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

**Stymie**

- A** Explicate
- B** Abet
- C** Impede
- D** Aid

**Answer:** C

**Question 56**

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

**Suffix**

- A** Addition
- B** Basic
- C** Root
- D** Focal

**Answer:** A

**Question 57**

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

**Sultry**

- A** Frigid
- B** Muggy
- C** Sticky
- D** Soggy

**Answer: A**

**Question 58**

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

**Supple**

- A** Flexible
- B** Brittle
- C** Pliable
- D** Bending

**Answer: B**

**Question 59**

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

**Barking up the wrong tree**

- A** Scolding the one who is innocent.
- B** Expecting a favour from a heartless person.
- C** Looking in the wrong place.
- D** Requesting but in an arrogant manner.

**Answer: C**

**Question 60**

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

**Call it a day**

- A** To start a job wishing for success.
- B** To take a break or a holiday.
- C** Assign different days to different tasks.

**D** To declare the end of a task.

**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".**

**Would you mind (to carrying) this bag for me.**

**A** to carry

**B** carrying

**C** carry

**D** no improvement

**Answer:** B

#### 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".**

**The child (would have jumped) with delight on seeing the joker at the circus.**

**A** jumping

**B** jumped

**C** to jump

**D** no improvement

**Answer:** B

#### Question 63

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

**The quality or state of being exposed to the possibility of being attacked or harmed**

**A** Vigour

**B** Vulnerability

**C** Fortitude

**D** Clout

**Answer:** B

#### Question 64

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

**A solemn promise or undertaking**



- A Pledge
- B Deceit
- C Myth
- D Perjury

**Answer:** A

#### **Question 65**

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

- A consenssus
- B concensus
- C concenssus
- D consensus

**Answer:** D

#### **Question 66**

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

- A presedents
- B pricedents
- C precedents
- D prisedents

**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.**

**They had been thrown**

**X-upon their own exertions at an**

**Y-battle to fight with poverty and ignorance**

**Z-early age, and had a hard**

- A XZY
- B YXZ
- C ZYX
- 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 unstated assumption is

X-conceding spatial autonomy

Y-that the grant of a different time

Z-zone is only the first temporal step towards

A ZXY

B XZY

C YXZ

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.

My friends are going to watch a movie tonight.

A A movie is going to be watched by my friends tonight.

B My friends will have watch a movie by tonight.

C A movie was going to be watched by my friends tonight.

D My friends will have to watch a movie by tonight.

Answer: A

### 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.

"What time does the flight arrive?" she asked the receptionist.

A She asked the receptionist what time the flight arrived.

B She asked the receptionist what time the flight arrive.

C She asked the receptionist when does the flight arrive.

D She asked the receptionist what was going to be the time for the flights arrival.

Answer: A

### Instructions

A passage is given with 5 questions following it. Read the passage carefully and choose the best answer to each question out of the four alternatives.

Due to poor rainfall over the past few months, the vadu mangai season is expected to be short this year. There are two distinct varieties available in the vicinity of Coimbatore. The closest to Coimbatore, and the one that appears in the markets first, is the Thadagam variety. The second and more popular variety is the one from the Thirumoorthy Hills, near Udumalpet. Representatives from commercial pickle brands whisk these mangais away in big lots directly from the wholesalers. Only a small portion of the year's harvest trickles down to the local markets.

Small vendors bring sacks full of these tiny tender mangoes to one particular street corner in Ram Nagar during the season. The corner of Rajaji Road and Sathyamurthy Road plays host to these vendors from as early as 7.00 am every day. Depending on the quantity they have, the mangais are available until around 11.00 am. If the vendors have a good day and their produce is sold quickly, they pack up and leave even as early as 9.00 am.

**Question 71**

**What do you think 'Thadagam' is from the passage?**

- A A Festival celebrated in Coimbatore.
- B A variety of vadu mangai mangoes.
- C A word for 'monsoon' in the local language.
- D A variety of mango pickle.

**Answer: B**

**Question 72**

**Why do local markets get only a small portion of the mango produce?**

- A Commercial pickle companies buy the mangoes in huge quantities.
- B The mangoes get sold as quickly as 9.00 am.
- C There are only three vendors in the local market.
- D The sellers of the local market are just small vendors.

**Answer: A**

**Question 73**

**What may happen if there is adequate rainfall?**

- A Local vendors will get fewer mangoes.
- B The vadu mangai season will be longer that year.
- C Commercial pickle companies will buy in smaller quantities.
- D Vendors will be able to sell quickly.

**Answer: B**

**Question 74**

**The more popular vadu mangai mangoes are from:**

- A Udumalpet
- B Coimbatore
- C Thirumoorthy Hills
- D Ram Nagar

**Answer: C**

**Question 75**

Which of the following best describes the vadu mangai mangoes?

- A Big and juicy
- B Orange but raw
- C Tiny and tender
- D Sour and sweet

**Answer:** C

## Mathematics

**Instructions**

For the following questions answer them individually

**Question 76**

What least number must be added to 213, so that the sum is completely divisible by 9?

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

**Answer:** A

**Explanation:**

$213/9 = 23\overset{6}{9}$  so 3 must be added to 213

So the answer is option A.

**Question 77**

A can do a work in 12 days and B in 24 days. If they work on it together for 4 days, then what fraction of work is left?

- A  $1/3$
- B  $1/2$
- C  $1/4$
- D  $1/5$

**Answer:** B

**Explanation:**

Let the total work = LCM of 12 & 24 = 24 units

A's efficiency =  $24/12 = 2$

B's efficiency =  $24/24 = 1$

In 1 day they can complete 3 units of work  
In 4 days they can complete 12 units of work  
work left =  $24 - 12 = 12$  units  
fraction of work left =  $12/24 = 1/2$   
So the answer is option B.

**Question 78**

**What is the area (in sq cm) of an equilateral triangle of side 6 cm?**

- A  $36\sqrt{3}$
- B 9
- C 36
- D  $9\sqrt{3}$

**Answer:** D

**Explanation:**

Area of equilateral triangle =  $\sqrt{3}a^2/4 = \sqrt{3}(6)^2/4 = 9\sqrt{3}$

So the answer is option D.

**Question 79**

**What is the effective discount on two successive discounts of 20% and 25%?**

- A 45%
- B 40%
- C 50%
- D 60%

**Answer:** B

**Explanation:**

Effective discount =  $100 - \left(\frac{100-25}{100}\right)\left(\frac{100-20}{100}\right) = 100 - \left(\frac{75}{100}\right)\left(\frac{80}{100}\right) = 100 - 60 = 40$

So the answer is option B.

**Question 80**

**Profit of Rs 12,400 has to be divided between three partners A, B and C in the ratio 5:7:8. How much does B get (in Rs)?**

- A 4340
- B 3440
- C 3340
- D 4430

**Answer:** A

**Explanation:**

$$B's \text{ share} = \frac{7}{5+7+8} \times 12400 = \frac{7}{20} \times 12400 = 7 \times 620 = 4340$$

So the answer is option A.

**Question 81**

The average weight of P, Q and R is 47 kg. If the average weight of P and Q be 32.5 kg and that of Q and R be 48.5 kg, then what is the weight of Q (in kgs)?

- A 25
- B 21
- C 29
- D 33

**Answer: B**

**Explanation:**

$$\frac{P+Q+R}{3} = 47 \rightarrow P + Q + R = 47 \times 3 = 141 \text{ -----(1)}$$

$$\frac{P+Q}{2} = 32.5 \rightarrow P + Q = 32.5 \times 2 = 65 \text{ -----(2)}$$

$$\frac{Q+R}{2} = 48.5 \rightarrow Q + R = 48.5 \times 2 = 97 \text{ -----(3)}$$

$$(2)+(3)-(1) \Rightarrow P + Q + Q + R - P - Q - R = 65 + 97 - 141 = 21$$

$$\Rightarrow Q = 21$$

So the answer is option B.

**Question 82**

A shopkeeper by selling 5 items, earns a profit equal to the selling price of 1 item. What is his profit percentage?

- A 20%
- B 25%
- C 16%
- D 22.5%

**Answer: B**

**Explanation:**

Let SP of 1 item = 10/-

SP of 5 items = 50/-

profit = SP of 1 item = 10/-

CP = SP-profit = 50-10 = 40/-

$$\text{profit\%} = \frac{\text{profit}}{CP} \times 100 = \frac{10}{40} \times 100 = 25\%$$

So the answer is option B.

**Question 83**

What is the value of 20% of 500% of 50?

- A 0.5
- B 5000
- C 500
- D 50

**Answer:** D

**Explanation:**

$$\frac{20}{100} \times \frac{500}{100} \times 50 = \frac{10000}{10000} \times 50 = 50$$

So the answer is option D.

**Question 84**

**To cover a distance of 90 km in 2.5 hours what should be the average speed of the car in meters/second?**

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

**Answer:** A

**Explanation:**

$$\text{speed} = \frac{\text{distance}}{\text{time}} = \frac{90}{2.5} \text{ kmph} = \frac{90}{2.5} * \frac{5}{18} = 10 \text{ m/s}$$

So the answer is option A.

**Question 85**

**If in 3 years at simple interest the principal increases by 18%, what will be the compound interest (in Rs) earned on Rs. 25,000 in 3 years at the same rate?**

- A 4775.4
- B 5774.4
- C 4557.4
- D 5575.4

**Answer:** A

**Explanation:**

$$I = 18\% \text{ of } P$$

$$I = \frac{PTR}{100}$$

$$\frac{18P}{100} = \frac{P(3)R}{100} \rightarrow R = 6\%$$

Under CI,

$$\text{Total amount} = P \left(1 + \frac{R}{100}\right)^n$$

$$= 25000 \left(1 + \frac{6}{100}\right)^3$$

$$= 25000 \left(1 + \frac{3}{50}\right)^3$$

$$= 25000 \left(\frac{53}{50}\right)^3$$

$$= 25000 \left( \frac{148877}{125000} \right)$$

$$= 29775.4$$

$$CI = 29775.4 - 25000 = 4775.4$$

So the answer is option A.

### Question 86

If  $5x + 6(3-2x) = 4$ , then what is the value of  $x$ ?

A 1

B 3

C 2

D 4

**Answer:** C

#### Explanation:

$$5x + 6(3-2x) = 4$$

$$5x + 18 - 12x = 4$$

$$-7x = -14$$

$$x = 2$$

So the answer is option C.

### Question 87

If  $a + b = 1$  and  $ab = -6$ , then what is the value of  $a^3 + b^3$  ?

A 17

B 15

C 19

D 13

**Answer:** C

#### Explanation:

$$a^3 + b^3 = (a + b)^3 - 3ab(a + b)$$

$$a^3 + b^3 = (1)^3 - 3(1)(-6) = 1 + 18 = 19$$

So the answer is option C.

### Question 88

The sum of a non-zero number and twenty times its reciprocal is 9. What is the number?

A -5

B 3

C -3

D 5



**Answer:** D

**Explanation:**

$$x + 20\left(\frac{1}{x}\right) = 9$$

$$\Rightarrow (x^2 + 20) = 9 \times x$$

$$\Rightarrow x^2 - 9x + 20 = 0$$

$$\Rightarrow (x - 4)(x - 5) = 0$$

$$\Rightarrow x = 4 \text{ or } 5$$

so the answer is option D.

### Question 89

If the 3rd and the 5th term of an arithmetic progression are 13 and 21, what is the 13th term?

**A** 53

**B** 49

**C** 57

**D** 61

**Answer:** A

**Explanation:**

$$T_3 = a + 2d = 13 \text{-----(1)}$$

$$T_5 = a + 4d = 21 \text{-----(2)}$$

on solving (1) AND (2)

$$d = 4 \text{ \& } a = 5$$

$$T_{13} = a + 12d = 5 + 12(4) = 5 + 48 = 53$$

So the answer is option A.

### Question 90

What is the reflection of the point (3,-5) in the origin?

**A** (-3,-5)

**B** (5,-3)

**C** (-5,-3)

**D** (-3, 5)

**Answer:** D

**Explanation:**

(diagram)

from the diagram answer is (-3 , 5)

So the answer is option D.

**Question 91**

Point P is the midpoint of segment AB. Co-ordinates of P are (5, -1) and A are (2, -4). What are the co-ordinates of point B?

A (6, 4)

B (8, 2)

C (1, -2)

D (-6, -2)

**Answer:** B

**Explanation:**

$$\text{Mid-point} = \left( \frac{x_1+x_2}{2}, \frac{y_1+y_2}{2} \right)$$

$$(5, -1) = \left( \frac{2+x}{2}, \frac{-4+y}{2} \right)$$

$$2+x = 10 \text{ so } x = 8$$

$$-4+y = -2 \text{ so } y = 2$$

so the answer is option B.

**Question 92**

What is the slope of the line perpendicular to the line passing through the points (-2, 3) and (2, 0)?

A 4/3

B 3/4

C -3/4

D -4/3

**Answer:** A

**Explanation:**

$$\text{slope } m = \frac{y_2-y_1}{x_2-x_1} = \frac{0-3}{2+2} = -3/4$$

$$\text{slope of the perpendicular line} = -1/m = 4/3.$$

So the answer is option A.

**Question 93**

$\Delta ABC$  is similar to  $\Delta PQR$ . If ratio of perimeters of  $\Delta ABC$  and  $\Delta PQR$  is 1:2 and if  $PQ = 10$  cm then what is the length of  $AB$  (in cm)?

A 5

B 20

C 25

D 15

**Answer:** A

**Explanation:**

For similar triangles, ratio of perimeters = ratio of corresponding sides

$$PQ/AB = 2/1$$

$$10/AB = 2/1$$

$$AB = 5$$

So the answer is option A.

#### Question 94

What is the value of  $\sin 30^\circ + \cos 30^\circ$ ?

A  $(\sqrt{6} + 1)/\sqrt{3}$

B  $(\sqrt{3} + 2)/\sqrt{3}$

C  $(1 + \sqrt{3})/2$

D  $5/\sqrt{3}$

Answer: C

#### Explanation:

$$\sin 30^\circ + \cos 30^\circ = 1/2 + \sqrt{3}/2 = (1 + \sqrt{3})/2$$

So the answer is option C.

#### Question 95

$\Delta ABC$  is right angled at B. If  $m\angle A = 30^\circ$ , then  $\sec C = ?$

A  $1/2$

B  $1/\sqrt{2}$

C 2

D  $1/\sqrt{3}$

Answer: C

#### Explanation:

$$B = 90^\circ \quad A = 30^\circ$$

$$\text{then } C = 60^\circ \quad (\because A + B + C = 180^\circ)$$

$$\sec C = \cot 60^\circ = 2$$

So the answer is option C.

#### Question 96

If  $\sin \theta = 12/13$ , then what is the value of  $\cot \theta$ ?

A  $13/12$

B  $5/13$

C  $5/12$

D  $13/5$

Answer: C

**Explanation:**

$$\sin \theta = 12/13$$

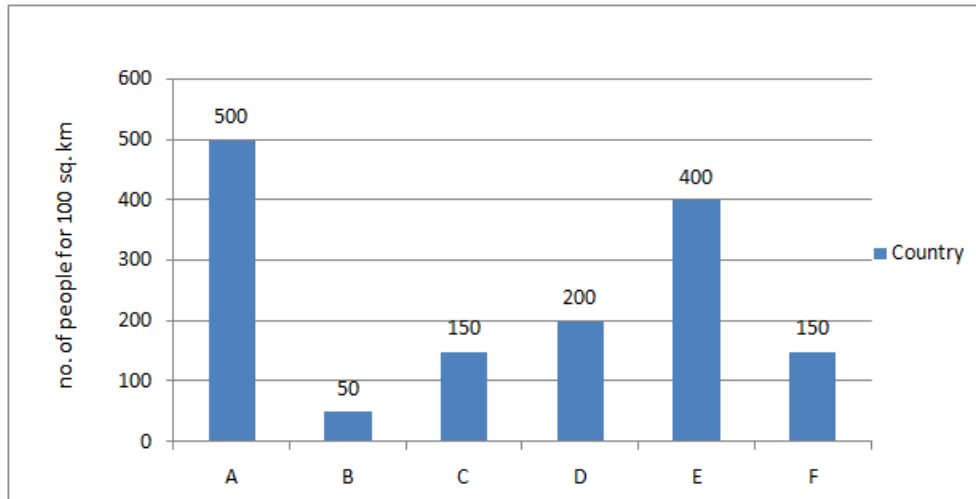
$$\cos \theta = 1 - \sin^2 \theta = 1 - (12/13)^2 = 5/13$$

$$\cot \theta = \cos \theta / \sin \theta = 5/12$$

So the answer is option C.

**Instructions**

The bar graph shows the population density of 6 countries. Study the diagram and answer the following questions.

**Question 97**

What is the ratio of the population densities of country C to country D?

- A 3 : 4
- B 4 : 3
- C 5 : 4
- D 4 : 5

**Answer:** A

**Explanation:**

$$C : D = 150 : 200 = 3 : 4$$

So the answer is option A.

**Question 98**

What is the difference in the average number of people living per 1,000 sq km in countries E and F?

- A 250
- B 4000
- C 400
- D 2500

**Answer:** D

**Explanation:**

number of people living per 100 sq km in countries E = 400

number of people living per 1,000 sq km in countries E =  $400 \times 10 = 4000$

number of people living per 100 sq km in countries F = 150

number of people living per 1,000 sq km in countries F = 1500

difference =  $4000 - 1500 = 2500$

So the answer is option D.

**Question 99**

**Population density of country E is greater than population density of country D by:**

- A 50%
- B 100%
- C 200%
- D 300%

**Answer:** B

**Explanation:**

Population density of country E = 400

Population density of country D = 200

Population density of country E is greater than population density of country D by  $\frac{400-200}{200} \times 100 = 100\%$

So the answer is option B.

**Question 100**

**If area of country B is 20,00,000 sq km, what is its population?**

- A 10000000
- B 2500000
- C 25000000
- D 1000000

**Answer:** D

**Explanation:**

no. of people per 100 sq.km in B = 50

no. of people per 20,00,000 sq km in B =  $\frac{50}{100} \times 20,00,000 = 10,00,000$

So the answer is option D.



