



SSC CGL 9th March 2020 Shift-2

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General Intelligence and Reasoning

Instructions

For the following questions answer them individually

Question 1

In a certain code language, 'SPECIAL' is coded as '20176410213'. How will 'MACHINE' be coded as in that language?

- A 1324810155
- B 1424901056
- C 1424910156
- D 1524910146

Answer: C

Explanation:

'SPECIAL' is coded as '20176410213'.

Like as,

$$S + 1 = 20$$

$$P + 1 = 17$$

$$E + 1 = 6$$

$$C + 1 = 4$$

$$I + 1 = 10$$

$$A + 1 = 2$$

$$L + 1 = 13$$

Similarly,

For 'MACHINE',

$$(M + 1)(A + 1)(C + 1)(H + 1)(I + 1)(N + 1)(E + 1)$$

$$= 1424910156$$

∴ The correct answer is option C.

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Question 2

Which two signs should be interchanged to make the given equation correct ?

$$14 \times 3 \div 27 + 54 - 9 = 21$$

- A \times and \div
- B \times and $-$
- C \div and $-$
- D $+$ and $-$

Answer: C

Explanation:

$$14 \times 3 \div 27 + 54 - 9 = 21$$

From the option C,

On interchanging the \div and $-$,

$$14 \times 3 - 27 + 54 \div 9 = 21$$

$$42 - 27 + 6 = 21$$

$$21 = 21$$

∴ The correct answer is option C.

Question 3

Select the letter-cluster that can replace the question mark (?) in the following series.
NAVIGATE, PCVIGATE, NAXKGATE, ?, NAVIGAVG

- A PCVIICUG
- B NAXKICTE
- C NAVIICTE
- D NAVIJCTF

Answer: C

Explanation:

The series follows pattern as,
NAVIGATE, PCVIGATE, NAXKGATE, ---TE, NAVIGAVG
So, letter-cluster is NAVIICTE.
∴ The correct answer is option C.

Question 4

In a certain code language, 'FIXATION' is written as 'AXIFNOIT'. How will 'GLYCERIN' be written as in that language?

- A CYLGNIRE
- B NIRECYLG
- C LGZDGINR
- D YLGECRNI

Answer: A

Explanation:



Similarly,

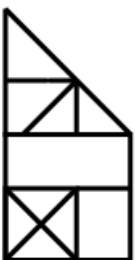


∴ The correct answer is option A.

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Question 5

How many triangles are there in the given figure?



- A 13
- B 15
- C 12
- D 14

Answer: A

Question 6

Four letter-clusters have been given, out of which three are alike in some manner and one is different. Select the odd letter-cluster.

- A AZ
- B LO
- C GT
- D KN

Answer: D

Explanation:

AZ → 1 + 26 = 27

LO → 12 + 15 = 27

GT → 7 + 20 = 27

KN → 11 + 14 = 25

∴ The correct answer is option D.

Question 7

Four words have been given, out of which three are alike in some manner and one is different. Select the odd word.

- A Cancer
- B Asthma
- C Diabetes
- D Bone Marrow

Answer: D

Explanation:

Except option D, remaining all are diseases.

∴ The correct answer is option D.

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Question 8

Study the given pattern carefully and select the number that can replace the question mark (?) in it.

15	18	?
8	9	12
161	243	432

- A 20

- B 24
- C 22
- D 26

Answer: B

Question 9

Select the option in which the numbers are related in the same way as are the numbers in the given set.
(22, 64, 352)

- A (27, 52, 453)
- B (24, 16, 108)
- C (19, 52, 257)
- D (14, 68, 238)

Answer: D

Explanation:

In (22, 64, 352),
 $352/22 = 16$

$$16 \times 4 = 64$$

Similarly,

In (14, 68, 238),
 $238/14 = 17$

$$17 \times 4 = 68$$

∴ The correct answer is option D.

Question 10

Select the option in which the words share the same relationship as that shared by the given pair of words.
Temple : Worship

- A Church : Prayer
- B University : President
- C Golden Temple : Amritsar
- D Garden : Plants

Answer: A

Explanation:

Temple is a place of worship.

Similarly,

Church is a place of prayer.

∴ The correct answer is option A.

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Question 11

Four number-pairs have been given, out of which three are alike in some manner and one is different. Select the number-pair that is different.

- A 31 : 214

B 37 : 256

C 21 : 154

D 39 : 270

Answer: C

Explanation:

$$31 \times 7 - 3 = 217 - 3 = 214$$

$$37 \times 7 - 3 = 259 - 3 = 256$$

$$21 \times 7 - 3 = 147 - 3 = 144$$

$$39 \times 7 - 3 = 273 - 3 = 270$$

∴ The correct answer is option C.

Question 12

Select the option that is related to the third number in the same way as the second number is related to the first number.

3 : 51 :: 7 : ?

A 319

B 609

C 335

D 679

Answer: D

Explanation:

In 3 : 51,

$$(3)^3 \times 2 - 3 = 27 \times 2 - 3 = 54 - 3 = 51$$

Similarly,

$$(7)^3 \times 2 - 7 = 343 \times 2 - 7 = 686 - 7 = 679$$

∴ The correct answer is option D.

Question 13

What day of the week was 29 June 2010 ?

A Sunday

B Monday

C Wednesday

D Tuesday

Answer: D

Explanation:

$$\text{Odd day till 2009} = 7 + 2 + 2 = 11$$

(∵ Year 2004 and 2008 are leap year and odd days till 2000 = 0)

$$\text{Odd days in 29 June} = \text{Odd days in (January + February + March + April + May + June)} = 3 + 0 + 3 + 2 + 3 + 1 = 12$$

$$\text{Total odd days} = 11 + 12 = 23$$

$$\text{Odd days} = 23/7 = 2 \text{ remaining}$$

The days of the week was Tuesday.

∴ The correct answer is option D.

Question 14

Select the number that can replace the question mark (?) in the following series.

39, 50, 63, 80, ?, 122, 147, 176

- A 90
- B 108
- C 99
- D 105

Answer: C

Explanation:

The series follows pattern as,

$$39 + 11 = 50$$

$$50 + (11 + 2 = 13) = 63$$

$$63 + (13 + 4 = 17) = 80$$

$$80 + (17 + 2 = 19) = 99$$

$$99 + (19 + 4 = 23) = 122$$

$$122 + (23 + 2 = 25) = 147$$

$$147 + (25 + 4 = 29) = 176$$

∴ The correct answer is option C.

Question 15

$A - B$ means 'A is the sister of B'

$A \times B$ means 'A is the husband of B';

$A \div B$ 'A is the son of B'

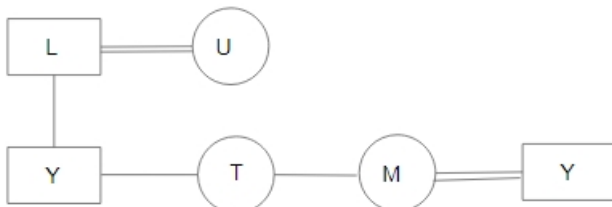
If, $Y \times M - T - Z \div L \times U$, then how is U related to Y?

- A Father-in-law
- B Mother-in-law
- C Father
- D Mother

Answer: B

Explanation:

In the diagram, Circle shows the female, square shows the male, vertical lines show the generation, single horizontal line shows the brother/sister and double horizontal lines show the couple.



From the diagram,
'U' is the mother-in-law of 'Y'.

∴ The correct answer is option B.

Question 16

Arrange the following words in a logical and meaningful order.

1. Casting
2. Acting
3. Film Shooting
4. Final Film
5. Editing

- A 4, 3, 5, 1, 2
B 3, 2, 1, 4, 5
C 3, 1, 2, 5, 4
D 1, 2, 3, 5, 4

Answer: D

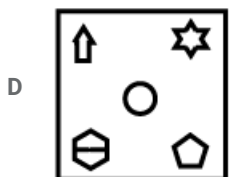
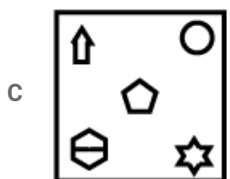
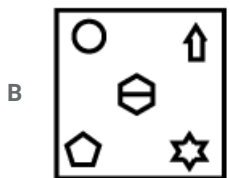
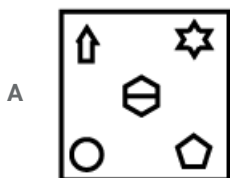
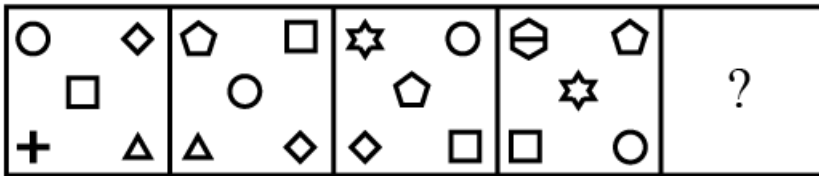
Explanation:

Arrangement of the word in the meaningful order,
Casting, Acting, Film Shooting, Editing, Final Film
∴ The correct answer is option D.

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Question 17

Select the figure that can replace the question mark (?) in the following series.



Answer: A

Question 18

Select the option in which the given figure X is embedded (rotation is not allowed).

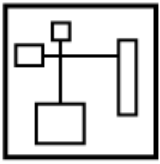
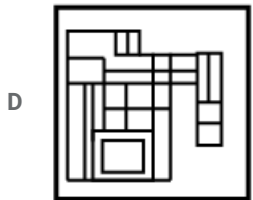
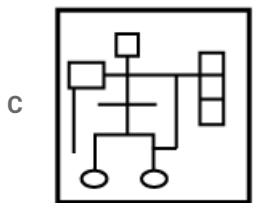
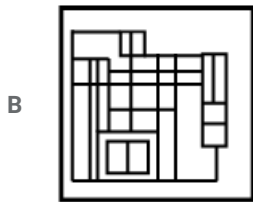
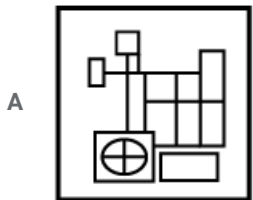


Figure X



Answer: B

Question 19

Select the correct mirror image of the given letter-cluster when a vertical mirror is placed on the right side of the cluster.

EWGZMPK

A **EWGZMPK**

B **KPMZGWE**

C **KPMZGWE**

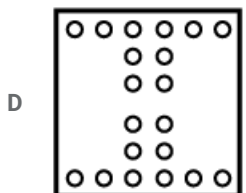
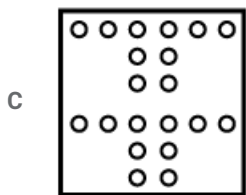
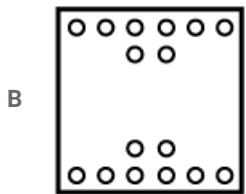
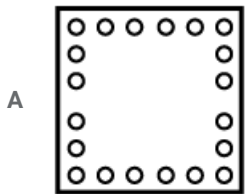
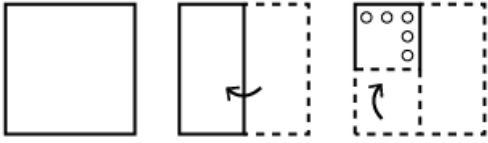
D **KPMZGWE**

Answer: B

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Question 20

The sequence of folding a piece of paper and the manner in which the folded paper has been cut is shown in the following figures. How would this paper look when unfolded?



Answer: D

Question 21

Select the letter will replace the question mark (?) in the following series.

A, J, E, L, I, N, O, P, U, ?

A R

B W

C K

D B

Answer: A

Explanation:

There are 2 series,

A, E, I, O, U

And,

J, L, N, P, ?

2nd series follows pattern as,

$$J + 2 = L$$

$$L + 2 = N$$

$$N + 2 = P$$

$$P + 2 = R$$

∴ The correct answer is option A.


Question 22

'Photoshop' is related to 'Software' in the same way as 'Optical Mouse' is related to '_____'.


- A Hardware
- B Touch - screen
- C Malware
- D Hard - disc

Answer: A

Explanation:

'Photoshop' is related to 'Software' in the same way as 'Optical Mouse' is related to 'Hardware'.


∴ The correct answer is option A.

General Science Notes for SSC CGL

Question 23

Read the given statements and conclusions carefully. Assuming that the information given in the statements is true, even if it appears to be at variance with commonly known facts, decide which of the given conclusions logically follow(s) from the statements.

Statements:

1. No garden is a park.
2. Some gardens are schools.

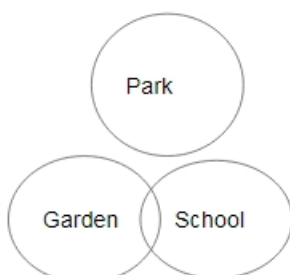
Conclusions:

- I. No park is a garden.
- II. Some schools are gardens.
- III. Some parks are gardens.

- A Either conclusion I or III and conclusion II follow.
- B Only conclusions II and III follow.
- C Only conclusions I and II follow.
- D Either conclusion I or III follows.

Answer: C

Explanation:

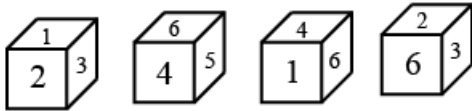
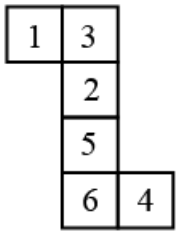


From the Venn diagram,

Only conclusions I and II follow.
∴ The correct answer is option C.

Question 24

Select the dice that can be formed by folding the given sheet along the lines.

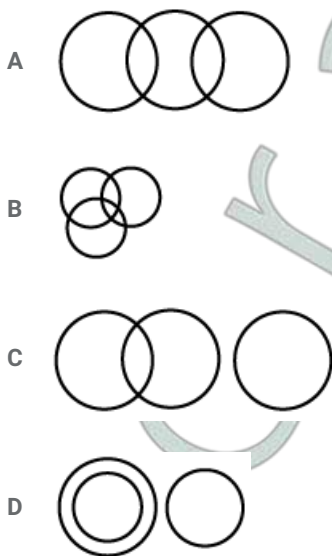


- A Only A
- B Only B and D
- C Only A and B
- D Only A, B and C

Answer: C

Question 25

Which of the following Venn diagrams best represents the relationship between the following classes?
Lady Constables, Uncles, Mothers



Answer: C

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General Awareness

Instructions

For the following questions answer them individually

Question 26

Which of the following is the lowermost layer of the Atmosphere?

- A Troposphere
- B Mesosphere
- C Thermosphere
- D Exosphere

Answer: A

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Question 27

What is the rank of India in the Human Development Index 2019?

- A 89th
- B 130th
- C 128th
- D 129th

Answer: D

Question 28

The rating for a fuse used in a household electric circuit is provided on the basis of:

- A resistance
- B voltage
- C power
- D current

Answer: D

Question 29

In which state is the festival of Uttarayan uniquely celebrated?

- A Jharkhand
- B Gujarat
- C Uttar Pradesh
- D Kerala

Answer: B

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Question 30

Which of the following events did NOT occur in 1919?

- A Montague Chelmsford Reform was announced
- B Jallianwala Bagh tragedy took place
- C Rowlatt Act was passed
- D Partition of Bengal took place

Answer: D

Question 31

How many molecules of ATP are obtained by the respiration of one molecule of glucose?

- A 36
- B 4
- C 38
- D 2

Answer: D

Question 32

Constantan is an alloy of copper and _____.

- A aluminium
- B tin
- C nickel
- D iron

Answer: C

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Question 33

Which of the following rivers was known as Purushni in the Vedic period?

- A Beas
- B Chenab
- C Ravi
- D Sutlej

Answer: C

Question 34

Which tales are related with the painting and sculptures of the Ajanta caves?

- A Hitopadesha Tale
- B Panchatantra Tales
- C Jataka Tales
- D Pentamerone Tales

Answer: C

Question 35

Who among the following is NOT a recipient of the 2019 Mother Teresa Memorial Awards for Social Justice?

- A Kailash Satyarthi
- B Priti Patkar
- C Medha Patkar
- D Ajeet Singh

Answer: C

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Question 36

Who among the following is the Chief Minister of Mizoram as on November 2019?

- A Conrad Kongkal Sangma
- B Laldenga
- C Neiphiu Rio
- D PU Zoramthanga

Answer: D

Question 37

'Pedology' is the science of:

- A ground water
- B soil
- C childhood illness
- D skin disease

Answer: B

Question 38

Who among the following initiated 'Din-i-Ilahi'?

- A Babur
- B Humayun

C Jahangir

D Akbar

Answer: D

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Question 39

Which of the following ministries is NOT associated with the initiative of Beti Bachao, Beti Padhao Scheme?

A Ministry of Health and Family Welfare

B Ministry of Rural Development

C Ministry of Women and Child Development

D Ministry of Human Resource Development

Answer: B

Question 40

Which among the following is a non-biodegradable waste?

A Plastic

B Flowers

C Vegetables

D Dead animals

Answer: A

Question 41

What does 'C' stand for in ITCZ?

A Convection

B Convergence

C Constant

D Circulation

Answer: B

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Question 42

In 2019, IIT-Madras launched the country's first indigenously designed standing wheelchair named as:

A Arise

B Marathon

C Awake

D Optimist

Answer: A

Question 43

Who signed the treaty of Alinagar with the British?

A Mir Qasim

B Siraj-ud-Daula

C Alivardi Khan

D Mir Jafar

Answer: B

Question 44

Under which Amendment to the Constitution of India was Goods and Services Tax imposed?

A 97th

B 101st

C 103rd

D 99th

Answer: B

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Question 45

How many medals did India win in the 2012 Summer Olympics?

A 5

B 3

C 4

D 6

Answer: D

Question 46

What is the rank of India in the Global Peace Index 2019?

A 142

B 144

C 143

D 141

Answer: D

Question 47

Who among the following was the mascot of the Men's Hockey World Cup held at Bhubaneswar in 2018?

- A Shera
- B Millie
- C Borobi
- D Turtle Olly

Answer: D

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Question 48

Which of the following states does NOT share its boundary with Nepal?

- A Uttar Pradesh
- B Assam
- C West Bengal
- D Bihar

Answer: B

Question 49

In July 2019, which of the following schemes was launched to accelerate water harvesting and conservation measures?

- A Jal Shakti Abhiyan
- B Jal Bachao Abhiyan
- C Jal hi dhan hai Abhiyan
- D Jal Vikas Abhiyan

Answer: A

Question 50

Who of the following authored the book 'Revolution 2020'?

- A Devdutt Pattanaik
- B Rupa Pai
- C Chetan Bhagat
- D Arvind Kejriwal

Answer: C

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Quantitative Aptitude

Instructions

For the following questions answer them individually

Question 51

Solve the following expression.

$$11 + 11 \times 11 - 11 \div 11$$

A 131

B 22

C 11

D 121

Answer: A

Explanation:

$$11 + 11 \times 11 - 11 \div 11$$

$$= 11 + 121 - 1 = 131$$

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Question 52

Solve the following.

$$\frac{2 \sin 22^\circ}{\cos 68^\circ} - \frac{2 \cot 75^\circ}{5 \tan 15^\circ} - \frac{8 \tan 45^\circ \tan 20^\circ \tan 40^\circ \tan 50^\circ \tan 70^\circ}{5}$$

A 3

B 1

C 2

D 0

Answer: D

Explanation:

$$\frac{2 \sin 22^\circ}{\cos 68^\circ} - \frac{2 \cot 75^\circ}{5 \tan 15^\circ} - \frac{8 \tan 45^\circ \tan 20^\circ \tan 40^\circ \tan 50^\circ \tan 70^\circ}{5}$$

$$\frac{2 \sin 22^\circ}{\cos(90-22)} - \frac{2 \cot(90-15)}{5 \tan 15^\circ} - \frac{8 \tan 45^\circ \tan(90-70) \tan(90-50) \tan 50^\circ \tan 70^\circ}{5}$$

$$\frac{2 \sin 22^\circ}{\sin 22^\circ} - \frac{2 \tan 15^\circ}{5 \tan 15^\circ} - \frac{8 \tan 45^\circ \cot 50^\circ \cot 70^\circ \tan 50^\circ \tan 70^\circ}{5}$$

$$2 - \frac{2}{5} - \frac{8 \tan 45^\circ}{5}$$

$$2 - \frac{2}{5} - \frac{8}{5} = 0$$

Question 53

The value of $(\operatorname{cosec} A + \cot A + 1)(\operatorname{cosec} A - \cot A + 1) - 2 \operatorname{cosec} A$ is:

A $2 \operatorname{cosec} A$

B $4 \operatorname{cosec} A$

C 0

D 2

Answer: D

Explanation:

$$(\operatorname{cosec}A + \cot A + 1)(\operatorname{cosec}A - \cot A + 1) - 2\operatorname{cosec}A$$

$$= (\operatorname{cosec}A + 1)^2 - (\cot A)^2 - 2\operatorname{cosec}A$$

$$(\because a^2 - b^2 = (a + b)(a - b))$$

$$= \operatorname{cosec}^2 A + 1 + 2\operatorname{cosec}A - \cot^2 A - 2\operatorname{cosec}A$$

$$(\operatorname{cosec}^2 A - \cot^2 A = 1)$$

$$= 1 + 1 = 2$$

Question 54

If integer n is divided by 5, the remainder is 2. What will be the remainder if $7n$ is divided by 5?

A 4

B 1

C 3

D 2

Answer: A

Explanation:

If integer n is divided by 5, the remainder is 2,

When integer is $7n$ then remainder also multiply by 7 so,

$$\text{Remained} = 2 \times 7 = 14$$

Now,

14 is divided by 5 so,

$$\text{Remainder} = 4$$

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Question 55

A shopkeeper buys two books for Rs.300. He sells the first book at a profit of 20% and the second book at a loss of 10%. What is the selling price of the first book, if, in the whole transaction there is no profit no loss?

A Rs.110

B Rs.115

C Rs.120

D Rs.125

Answer: C

Explanation:

Let the cost price of first book be Rs. x .

Cost price of second book = $300 - x$

According to question,

$$x \times \frac{120}{100} + (300 - x) \times \frac{90}{100} = 300$$

(∵ There is no profit no loss.)

$$12x + (300 - x)9 = 3000$$

$$12x + 2700 - 9x = 3000$$

$$3x = 300$$

$$x = 100$$

Selling price of first book = $100 \times \frac{120}{100} = \text{Rs.}120$

Question 56

When 2 is subtracted from each of the given n numbers, then the sum of the numbers so obtained is 102. When 5 is subtracted from each of them, then the sum of the numbers so obtained is 12. What is the average of the given n numbers?

A 6.2

B 6.6

C 5.8

D 5.4

Answer: D

Explanation:

Let for ' n ' numbers the average be ' x '.

So, the total sum of ' n ' numbers would be ' nx '.

If 2 is subtracted from each ' n ' numbers, then the resulted value to be subtracted becomes = $2n$

Thus, value of the total sum now = $(nx - 2n)$

Given that, this value equals to 102.

$$\text{So, } nx - 2n = 102 \dots(1)$$

Again when 5 is subtracted from each ' n ' numbers, then the resulted value to be subtracted becomes = $5n$

Thus, value of the total sum now = $(nx - 5n)$

Given that, this value equals to 12.

$$\text{So, } nx - 5n = 12 \dots(2)$$

Subtracting (2) from (1), we get:

$$nx - 2n - (nx - 5n) = 102 - 12$$

$$\Rightarrow -2n + 5n = 90$$

$$\Rightarrow 3n = 90$$

$$\Rightarrow n = 90/3 = 30$$

There are 30 numbers.

Putting $n = 30$, in eqn.(1), we get:

$$(30)x - 2(30) = 102$$

$$\Rightarrow 30x - 60 = 102$$

$$\Rightarrow 30x = 162$$

$$\Rightarrow x = 162/30 = 5.4$$

∴ The average of 30 numbers is 5.4.

Question 57

The average of 4 terms is 30 and the 1st term is $\frac{1}{3}$ of the sum of the remaining terms. What is the first term?

- A 60
- B 30
- C 40
- D 20

Answer: B

Explanation:

Sum of the 4 terms = average \times no. of terms = $30 \times 4 = 120$

1st term = $\frac{1}{3}$ of the sum of the remaining terms

1st term = $\frac{1}{3}$ of the sum of the (all terms -)

$$\frac{\text{firstterm}}{3} + \text{firstterm} = 120 \times \frac{1}{3}$$

$$\text{1st term} \times \frac{4}{3} = 40$$

$$\text{1st term} = 30$$

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Question 58

Amit travelled a distance of 50 km in 9 hours. He travelled partly on foot at 5 km/h and partly by bicycle at 10 km/h. The distance travelled on the bicycle is:

- A 11 km
- B 10 km
- C 13 km
- D 12 km

Answer: B

Explanation:

Let Amit traveled a distance on foot be x km.

Distance covered by bicycle = $50 - x$

Time taken by Amit in journey = 9 hours

Time = distance/speed

According to question,

$$\frac{x}{5} + \frac{(50 - x)}{10} = 9$$

$$2x + (50 - x) = 90$$

$$x = 40$$

Distance covered by bicycle = $50 - x = 50 - 40 = 10$ km

Question 59

The following table shows the production of fertilizers (in lakh tonne) by six companies for 5 months (January to May).

Months	Companies					
	I	II	III	IV	V	VI
January	327	180	185	137	145	120
February	326	179	187	162	146	122
March	320	160	188	173	135	130
April	318	167	177	180	140	130
May	310	150	169	178	140	128

In which month does Company II have a contribution of approximately 20% in the total fertilizer production?

- A March
- B April
- C May
- D January

Answer: B

Explanation:

The total fertilizer production in company II = $180 + 179 + 160 + 167 + 150 = 836$

20% of the total fertilizer production in company II = $836 \times \frac{20}{100} = 167.2$

∴ In April month company II have a contribution of approximately 20% in the total fertilizer production.

Question 60

If x, y, z are three numbers such that $x + y = 13$, $y + z = 15$ and $z + x = 16$, the value of $\frac{xy+xz}{xyz}$ is:

- A $\frac{5}{36}$
- B $\frac{36}{5}$
- C $\frac{18}{5}$
- D $\frac{5}{18}$

Answer: D

Explanation:

$$x+y=13 \text{ ---(1)}$$

$$y+z=15 \text{ ---(2)}$$

$$z+x=16 \text{ ---(3)}$$

By (1) + (2) + (3),

$$2(x + y + z) = 13 + 15 + 16$$

$$x + y + z = 44/2 = 22$$

put the value from eq(1),

$$13 + z = 22$$

$$z = 9$$

From eq(3),

$$9 + x = 16$$

$$x = 7$$

From eq(3),

$$7 + y = 13$$

$$y = 6$$

Now,

$$\frac{xy+xz}{xyz}$$

$$= \frac{(7)(6)+(7)(9)}{(7)(6)(9)}$$

$$= \frac{6+9}{6 \times 9}$$

$$= \frac{5}{18}$$

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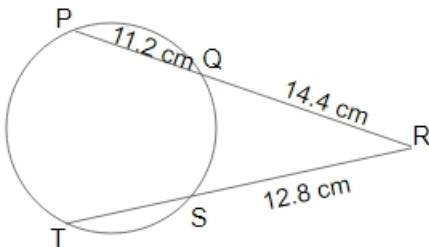
Question 61

In a circle, chords PQ and TS are produced to meet at R. If RQ = 14.4 cm, PQ = 11.2 cm, and SR = 12.8 cm, then the length of chord TS is:

- A 16 cm
- B 14.2 cm
- C 18 cm
- D 12.4 cm

Answer: A

Explanation:



From the property,

$$RQ \times RP = SR \times RT$$

$$14.4 \times (RQ + PQ) = 12.8 \times RT$$

$$14.4 \times (14.4 + 11.2) = 12.8 \times RT$$

$$368.14 = 12.8 \times RT$$

$$RT = 28.8 \text{ cm}$$

$$RT = TS + SR$$

$$28.8 = 12.8 + TS$$

$$TS = 16 \text{ cm}$$

Question 62

If $a = 2b = 8c$ and $a + b + c = 13$ then the value of $\frac{\sqrt{a^2+b^2+c^2}}{2c}$ is:

- A $\frac{9}{2}$
- B $-\frac{5}{6}$
- C $-\frac{9}{2}$
- D $\frac{5}{6}$

Answer: A

Explanation:

$$a + b + c = 13$$

Put the value of a and b,

$$8c + 4c + 8c = 13$$

$$c = 13/20$$

On put the value of a, b and c,

$$\frac{\sqrt{(8c)^2 + (4c)^2 + c^2}}{2c}$$

$$\frac{\sqrt{81c^2}}{2c} = \frac{9c}{2c} = \frac{9}{2}$$

Question 63

If $a^2 + b^2 - c^2 = 0$, then the value of $\frac{2(a^6 + b^6 - c^6)}{3a^2b^2c^2}$ is:

- A 3
- B 1
- C 0
- D 2

Answer: D

Explanation:

If $a + b + c = 0$ then $a^3 + b^3 + c^3 = 3abc$ so,

$$a^6 + b^6 - c^6 = 3a^2b^2c^2$$

$$\frac{2(a^6 + b^6 - c^6)}{3a^2b^2c^2}$$

$$= \frac{2(3a^2b^2c^2)}{3a^2b^2c^2} = 2$$

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Question 64

A certain sum amounts to Rs.280900 in 2 years at 6% per annum, interest compounded annually. The sum is:

- A Rs.250000
- B Rs.200000
- C Rs.350000
- D Rs.550000

Answer: A

Explanation:

$$\text{Amount} = P\left(1 + \frac{r}{100}\right)^t$$

$$\text{Sum} = p$$

$$\text{Time}(t) = 2 \text{ years}$$

$$r = 6\%$$

$$\text{Amount} = 280900$$

$$280900 = P\left(1 + \frac{6}{100}\right)^2$$

$$280900 = P \times \frac{106}{100} \times \frac{106}{100}$$

$$p = 280900 \times \frac{100}{106} \times \frac{100}{106} = \text{Rs.}250000$$

Question 65

A man wanted to sell his bat at a discount of 8%. His brother who was a cricketer wanted to buy the bat, so the man sells it at a discount of 10%. In this deal, the man reduces Rs.70 in profit. What was the market value of the bat?

- A Rs.3,000
- B Rs.3,500
- C Rs.2,500
- D Rs.3,200

Answer: B

Explanation:

Let the marked price of the bat be 100%.

Profit reduce = Rs.70

Man reduces profit because he increase in the discount.

Difference in discount = 70

$$10\% - 8\% = 2\%$$

$$\text{Marked price}(100\%) = \frac{70}{2} \times 100 = \text{Rs.}3500$$

Question 66

The following table shows the imports and exports (in Rs.crore) of a country over 4 years (2016 to 2019).

Years	2016	2017	2018	2019
Imports	125	145	165	188
Exports	130	150	175	200

The average trade balance (in Rs.crores) is:

- A 8
- B 12
- C 6
- D 4

Answer: A

Explanation:

Trade balance (in Rs.crores) in 2016 = 130 - 125 = 5

Trade balance (in Rs.crores) in 2017 = 150 - 145 = 5

Trade balance (in Rs.crores) in 2018 = $175 - 165 = 10$

Trade balance (in Rs.crores) in 2019 = $200 - 188 = 12$

Average trade balance (in Rs.crores) = $\frac{5+5+10+12}{4} = 32/4 = 8$

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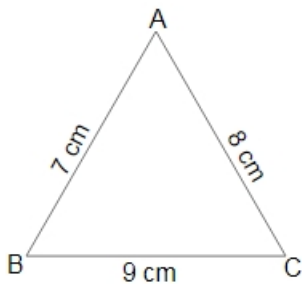
Question 67

Arrange the angles of the triangle from smallest to largest in the triangle. where the sides are $AB = 7$ cm, $AC = 8$ cm, $BC = 9$ cm.

- A A,B,C
- B B,A,C
- C C,B,D
- D C,B,A

Answer: D

Explanation:



Measurement of angle is according to the length of opposite line.

So,

The order of the angles of the triangle from smallest to largest in the triangle,

$C < B < A$.

Question 68

Find the height of a cuboid whose volume is 330 cm^3 and base area is 15 cm^2 .

- A 21 cm
- B 24 cm
- C 22 cm
- D 19 cm

Answer: C

Explanation:

Volume of cuboid = Base area \times height

$330 = 15 \times \text{height}$

Height = $330/15 = 22$ cm

Question 69

The volumes of spheres A and B are in the ratio $125 : 64$. If the sum of radii of A and B is 36 cm, then the surface area (in cm^2) of A is:

- A 512π
- B 1600π
- C 800π
- D 1024π

Answer: B

Explanation:

The ratio of the volume of the Sphere A and B = 125 : 64

$$\frac{4}{3} \times \pi \times r_a^3 : \frac{4}{3} \times \pi \times r_b^3 = 125 : 64$$

$$r_a^3 : r_b^3 = 125 : 64$$

$$\left(\frac{r_a}{r_b}\right)^3 = \frac{125}{64}$$

$$\frac{r_a}{r_b} = \frac{5}{4}$$

$$4r_a = 5r_b \text{---(1)}$$

$$(r_a + r_b = 36)$$

Put the value of r_b in eq (1),

$$4r_a = 5(36 - r_a)$$

$$4r_a + 5r_a = 180$$

$$r_a = 180/9 = 20 \text{ cm}$$

$$\text{Surface area of the A} = 4\pi r^2$$

$$= 4 \times \pi \times 20 \times 20 = 1600\pi$$

General Science Notes for SSC CGL

Question 70

Study the following table and answer the question.

Year	Items of Expenditure for the company				
	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
2014	284	98	3.00	23.4	74
2015	342	112	2.52	32.5	98
2016	314	101	3.84	41.4	83
2017	346	134	3.68	36.6	88
2018	425	141	3.96	49.4	108

Total expenditure on all the items in 2014 was approximately what percent of the total expenditure in 2018?

- A 68.32%
- B 65.32%
- C 60.32%
- D 66.32%

Answer: D

Explanation:

$$\text{Total expenditure on all the items in 2014} = 284 + 98 + 3 + 23.4 + 74 = 482.4$$

Total expenditure on all the items in 2018 = $425 + 141 + 3.96 + 49.4 + 108 = 727.36$

Required percentage = $\frac{482.4}{727.36} \times 100 = 66.32\%$

Question 71

The following table shows the production of fertilizers (in lakh tonne) by six companies for 5 months (January to May).

Months	Companies					
	I	II	III	IV	V	VI
January	327	180	185	137	145	120
February	326	179	187	162	146	122
March	320	160	188	173	135	130
April	318	167	177	180	140	130
May	310	150	169	178	140	128

There a continuous decrease in production over the months in:

- A Company II
- B Company I
- C Company III
- D Company IV

Answer: B

Explanation:

There a continuous decrease in production over the months in company I.

Question 72

A wheel covers a distance of 1,100 cm in one round. The diameter of the wheel is:

- A 350 cm
- B 175 cm
- C 200 cm
- D 150 cm

Answer: A

Explanation:

A wheel covers a distance of 1,100 cm in one round so,

Perimeter of wheel = 1100 cm

$$2\pi r = 1100$$

$$r = 550 \times \frac{7}{22} = 175 \text{ cm}$$

$$\text{Diameter} = 2r = 2 \times 175 = 350 \text{ cm}$$

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Question 73

A, B and C can individually complete a task in 24 days, 16 days and 32 days respectively. If A and C start the work and worked for 6 days and left, then the number of days required by B to complete the remaining task, is:

- A 9

- B $17\frac{1}{2}$
- C $7\frac{1}{2}$
- D $12\frac{1}{2}$

Answer: A

Explanation:

Let the total work be 96 units.

(\because LCM of 24, 16 and 32 is 96.)

Efficiency of A = work/time = $96/24 = 4$

Efficiency of B = $96/16 = 6$

Efficiency of C = $96/32 = 3$

Efficiency of A and C = $4 + 3 = 7$

Work done by A and C in 6 days = $7 \times 6 = 42$ units

Remaining work = $96 - 42 = 54$ units

Time taken by B to complete 54 units work = $54/6 = 9$ days

Question 74

If $5\cot\theta = 3$, find the value of $\frac{6\sin\theta - 3\cos\theta}{7\sin\theta + 3\cos\theta}$.

- A $\frac{11}{40}$
- B $\frac{20}{41}$
- C $\frac{21}{44}$
- D $\frac{44}{21}$

Answer: C

Explanation:

$$5\cot\theta = 3$$

$$\cot\theta = \frac{3}{5}$$

$$\frac{6\sin\theta - 3\cos\theta}{7\sin\theta + 3\cos\theta}$$

$$= \frac{\sin\theta(6 - \frac{3\cos\theta}{\sin\theta})}{\sin\theta(7 + \frac{3\cos\theta}{\sin\theta})}$$

$$= \frac{6 - 3\cot\theta}{7 + 3\cot\theta}$$

Put the value of $\cot\theta$,

$$= \frac{6 - 3 \times \frac{3}{5}}{7 + 3 \times \frac{3}{5}}$$

$$= \frac{6 - \frac{9}{5}}{7 + \frac{9}{5}}$$

$$= \frac{21}{44}$$

Question 75

train X travelling at 60 km/h overtakes another train Y, 225 m long, and completely passes it in 72 seconds. If the trains had been going in opposite directions, they would have passed each other in 18 seconds. The length (in m) of X and the speed (in km/h) of Y are, respectively:

- A 245 and 54
- B 255 and 40
- C 255 and 36
- D 245 and 45

Answer: C

Explanation:

Time taken to cross in same direction = 72 second

Time taken to cross in opposite direction = 18 second

Speed of train X = 60 km/hr = $60 \times \frac{5}{18}$ = 16.66 m/sec

Length of train Y = 225 m

Let the length of train X be l m and speed of train Y be x m/sec.

Total length = $(225 + l)$ m

Relative speed when trains run opposite direction = $(16.66 + x)$ m/sec

Length = speed \times time

$$225 + l = (16.66 + x) \times 18$$

$$225 + l = 300 + 18x$$

$$l = 75 + 18x \text{ ---(1)}$$

Relative speed when trains run opposite direction = $(16.66 - x)$ m/sec

$$225 + l = (16.66 - x) \times 72$$

$$225 + l = 1200 - 72x$$

$$l = 975 - 72x \text{ ---(2)}$$

By eq(1) and (2),

$$75 + 18x = 975 - 72x$$

$$90x = 900$$

$$x = 10 \text{ m/sec}$$

Speed (in km/h) of Y = $10 \times \frac{18}{5}$ = 36 km/hr

Put the value of x in eq(1)

$$l = 75 + 18 \times 10 = 255 \text{ m}$$

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English Comprehension

Instructions

For the following questions answer them individually

Question 76

Select the most appropriate synonym of the given word.

Abort

- A Begin
- B Continue

- C End
- D Hate

Answer: C

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Question 77

Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select No improvement.

I was sitting at home doing nothing when I had heard that song again.

- A heard
- B No improvement
- C hears
- D has heard

Answer: A

Question 78

Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

- A. They also visit ailing friends and relatives, or attend to personal matters even during office hours.
- B. Once in office, they receive friends and relatives who call them any time without prior appointment.
- C. We can frequently find a large number of people sitting here and there and doing nothing.
- D. Even those who are employed often come late to office and leave early unless they are forced to be punctual.

- A DCAB
- B ABCD
- C ACDB
- D CDBA

Answer: D

Question 79

In the sentence identify the segment which contains the grammatical error.
We must get this post send as soon as possible.

- A We must get
- B this post
- C soon as possible
- D send as

Answer: D

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Question 80

Select the word which means the same as the group of words given.
Having something more than required

- A Surplus
- B Surroundings
- C Surcharge
- D Surrogate

Answer: A

Question 81

Select the correct indirect form of the given sentence.
"What are you going to call the puppy, Jane?" the boy asked.

- A The boy wondered what Jane were going to call the puppy
- B Jane asked the boy what is he going to call the puppy
- C The boy told Jane what she was going to call her puppy
- D The boy asked Jane what she was going to call the puppy

Answer: D

Instructions

In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given. Select the most appropriate option for each blank.

In a way, adult education is an educational movement through the medium (1)_____ village schools. In the beginning, the (2)_____ were suspicious. It was hard to persuade (3)_____ to realise that they were really getting something (4)_____ the schools. They were not at all sure that they wanted their (5)_____ to leave their homes.

Question 82

Select the most appropriate option for the blank numbered 1.

- A by
- B of
- C from
- D in

Answer: B

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Question 83

Select the most appropriate option for the blank numbered 2

- A villagers
- B children

C politicians

D officers

Answer: A

Question 84

Select the most appropriate option for the blank numbered 3.

A they

B him

C them

D us

Answer: C

Question 85

Select the most appropriate option for the blank numbered 4

A from

B to

C for

D by

Answer: A

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Question 86

Select the most appropriate option for the blank numbered 5.

A teachers

B villagers

C parents

D children

Answer: D

Instructions

For the following questions answer them individually

Question 87

Select the word which means the same as the group of words given.

Anger about an unfair situation or about someone's unfair behaviour

A Indigenisation

B Induction

C Indulgence

D Indignation

Answer: D

Question 88

Select the most appropriate synonym of the given word.

Exceed

A Decrease

B Surpass

C Decline

D Improve

Answer: B

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Question 89

Select the most appropriate meaning of the following idiom.

Blind alley

A A state of deep thought

B A person who comes to meet occasionally

C A situation in which no further progress can be made

D Taking first step after somebody's approach

Answer: C

Question 90

Given below are four jumbled sentences. Out of the given options pick the one that gives their correct order.

A. Accommodation and food were given free.

B. This was held in a hostel for poor students built by a philanthropist.

C. A few years ago, I was the chief guest at a small function.

D. But the inmates of the hostel had to bear other expenses like clothing and toiletries

A BCDA

B BCAD

C ABCD

D CBAD

Answer: D

Question 91

Select the INCORRECTLY spelt word.

A Beginning

- B Guidance
- C Shining
- D Soldier

Answer: B

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Question 92

Select the most appropriate option to substitute the underlined segment in the given sentence. If there is no need to substitute it, select No improvement.

One evening, when father was coming home from work, I played in the front garden.

- A am playing
- B No improvement
- C play
- D was playing

Answer: D

Question 93

Select the most appropriate meaning of the following idiom.
The acid test

- A A critical situation or crisis
- B A fact, event or situation that proves something
- C An unpleasant or offensive test
- D Throwing acid on someone's face

Answer: B

Question 94

In the sentence identify the segment which contains the grammatical error.
Sita has no taste in classical dance.

- A in
- B classical dance
- C Sita has
- D no taste

Answer: A

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Question 95

Select the most appropriate **ANTONYM** of the given word.
Mellow

- A Medium
- B Hard
- C Shiny
- D Soft

Answer: B

Explanation:

Mellow means soft or calm so the antonym is hard.

Question 96

Select the most appropriate **ANTONYM** of the given word.
Emerge

- A Announce
- B Surface
- C Appear
- D Disappear

Answer: D

Question 97

Select the most appropriate option to fill in the blank.

My cousin's study on the reading habits of school children across three states has been recognised as a _____ piece of research.

- A pioneering
- B proud
- C useless
- D negligent

Answer: A

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Question 98

Select the most appropriate option to fill in the blank.

Suzerainty is having political control over a _____ state.

- A unified
- B democratic
- C dependent
- D backward

Answer: C

Question 99

Select the correct passive form of the given sentence.

The commander ordered his soldiers to move forward and attack the enemy camps.

- A The soldiers were ordered by their commander to move forward and attack the enemy camps
- B His soldiers were ordered by the commander to be moved forward and attacked the enemy camps
- C The commander was ordered by his soldiers to move forward and attack the enemy camps
- D The commander ordered his soldiers to be moved forward and attacked the enemy camps

Answer: A

Question 100

Select the INCORRECTLY spelt word.

- A Athelete
- B Convenience
- C Dilemma
- D Guarantee

Answer: A

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