



## SSC CGL 13 June 2019 Shift-3

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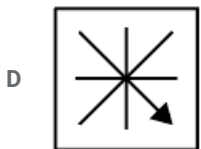
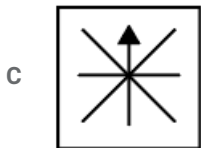
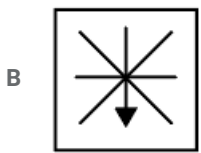
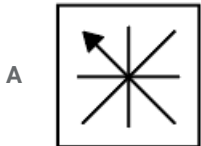
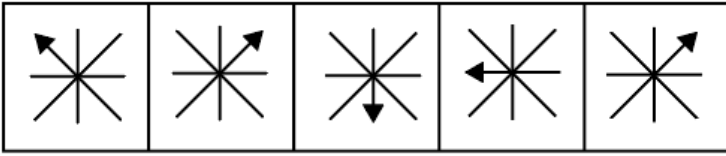
# Reasoning

## Instructions

For the following questions answer them individually

### Question 1

Select the figure that will come next in the following figure series.



Answer: D

## Explanation:

As per the given pattern,

We can say that, arrow is moving clock wise with  $90^\circ$  first and second move but every third move is  $90 + 45$ . Hence option D is the correct answer.

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### Question 2

ACCIDENT is related to TNEDICCA in the same way as PASSENGER is related to \* \_

A REGMESSAP

B RGENESSAP

C REGNESSAP

D REGNSESAP

Answer: C

## Explanation:

From the given logic in question,

Second terms is oppositely written as first is written.

← ACCIDENT → TNE DICCA

← PASSENGER → REGNESSAP

**Question 3**

Select the letter-cluster that is related to the third letter-cluster in the same way that the second letter-cluster is related to the first letter-cluster.

AFKP : BGLQ :: GLQV : ?

A HMPW

B HKRW

C HMRW

D HNRW

**Answer: C**

**Explanation:**

As per the given pattern,

next will follow as per the given below.

**AFKP : BGLQ :: GLQV : HMRW**

The diagram illustrates the letter shift pattern for the analogy AFKP : BGLQ :: GLQV : HMRW. It shows two pairs of letters connected by curved lines, with '+1' written above and below each connection to indicate a shift of one letter forward in the alphabet.

- For the first pair: A to B (+1), F to G (+1), K to L (+1), and P to Q (+1).
- For the second pair: G to H (+1), L to M (+1), Q to R (+1), and V to W (+1).

**Question 4**

Three of the following four number-pairs are alike in a certain way and one is different. Pick the odd number-pair out.

A 123 : 11

B 144 : 12

C 225 : 15

D 196 : 14

**Answer: A**

**Explanation:**

From the given options,

We found that apart from option A, all the given options are following the a special pattern.

144 : 12 is related as  $144 = 12^2$

225 : 15 is related as  $225 = 15^2$

196 : 14 is related as  $196 = 14^2$

But in the option A,

123 : 11 is related as  $123 = 11^2 + 2$

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### Question 5

Select the term that will come next in the following series.

11, 13, 17, 23, 31, 41, 53, 67, 83, ?

- A 100
- B 101
- C 110
- D 97

Answer: B

### Explanation:

As per the given series,

11, 13, 17, 23, 31, 41, 53, 67, 83, ?

$11 \xrightarrow{+2} 13 \xrightarrow{+4} 17 \xrightarrow{+6} 23 \xrightarrow{+8} 31 \xrightarrow{+10} 41 \xrightarrow{+12} 53 \xrightarrow{+14} 67 \xrightarrow{+16} 83 \xrightarrow{+18} 101$

### Question 6

Select the word-pair in which the two words are related in the same way as the two words in the following word-pair.

School : Student:: ..... : .....

- A College : Teacher
- B Court : Judge
- C Hospital : Patient
- D Hotel : Chef

Answer: C

### Explanation:

As per the question,

School : Student

School is a place where student can get knowledge.

Similarly

Hospital : Patient

Hospital is a place where patient can get a treatment.

### Question 7

In a code language, FRIEND is written as GQJDOC. How will PEACE be written in that language?

- A ODBBF
- B QDBDF
- C QDBBF
- D QFBBF

Answer: C

**Explanation:**

As per the question,

FRIEND is written as GQJDOC

$$F \xrightarrow{+1} G$$

$$R \xrightarrow{-1} Q$$

$$I \xrightarrow{+1} J$$

$$E \xrightarrow{-1} D$$

$$D \xrightarrow{+1} E$$

Similarly

PEACE can be coded as QDBBF

$$P \xrightarrow{+1} Q$$

$$E \xrightarrow{-1} D$$

$$A \xrightarrow{+1} B$$

$$C \xrightarrow{-1} B$$

$$E \xrightarrow{+1} F$$

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**Question 8**

If 'J' is coded as '20' and 'BAT' is coded as '46' then how will 'CRICKET' be coded?

- A 138
- B 158
- C 142
- D 140

**Answer:** A

**Explanation:**

As per the question,

J is the 10th letter of English alphabet so  $10 \times 2 = 20$

Similarly,

B is the 2nd letter of English alphabet

A is the first letter of English alphabet

T is the 20th letter of English alphabet

Hence  $2 + 1 + 20 = 23$  So,  $23 \times 2 = 46$

So cricket will be coded  $CRICKET = 3 + 18 + 9 + 3 + 11 + 5 + 20 = 69$

Hence it will be coded as  $69 \times 2 = 138$

**Question 9**

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

19 : 400 :: 24 : .....

- A 566
- B 676
- C 652
- D 625

**Answer: D**

**Explanation:**

As per the question,

$$19 : 400 :: 24 : ?$$

Now we can see that, 19 is related with 400 as -  $(19 + 1)^2 = 400$

Similarly

$$24 \text{ is related with the next number as - } (24 + 1)^2 = 25^2 = 625$$

**Question 10**

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

$$20 \div 20 + 20 - 25 \times 25 = 419$$

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

**Answer: A**

**Explanation:**

As per the given question,

$$20 \div 20 + 20 - 25 \times 25 = 419$$

Now, from the given options, applying hit and trial method,

$$\Rightarrow 20 \times 20 + 20 - 25 \div 25 = 419$$

$$\Rightarrow 20 \times 20 + 20 - 1 = 419$$

$$\Rightarrow 400 + 20 - 1 = 419$$

$$\Rightarrow 420 - 1 = 419$$

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**Question 11**

**Select the option that will fill in the blank and complete the given series.**

0, 7, 26, 63, 124, 215, 342, 511, 728, .....

- A 996
- B 1001
- C 999
- D 1000

**Answer: C**

**Explanation:**

As per the given series,

0, 7, 26, 63, 124, 215, 342, 511, 728, .....

We can write it as,

$(1^3 - 1), (2^3 - 1), (3^3 - 1), (4^3 - 1), (5^3 - 1), (6^3 - 1), (7^3 - 1), (8^3 - 1), (9^3 - 1), (10^3 - 1)$

Hence, next term will be  $1000 - 1 = 999$

**Question 12**

Select the option that will fill in the blank and complete the given series.

2, 5, 10, 17, 26, 37, ....., 65, 82, 101

A 54

B 48

C 51

D 50

**Answer: D**

**Explanation:**

From the given series,

We can see that the difference between the terms is following a special patterns

2, 5, 10, 17, 26, 37, ....., 65, 82, 101

$$d_1 = 5 - 2 = 3$$

$$d_2 = 10 - 5 = 5$$

$$d_3 = 17 - 10 = 7$$

$$d_4 = 26 - 17 = 9$$

$$d_5 = 37 - 26 = 11$$

$$d_6 = 50 - 37 = 13$$

Hence the blank space can be filled by 50.

**Question 13**

Three of the following four words are alike in a certain way and one is different. Pick the odd one out.

A Terminology

B Cardiology

C Pedology

D Seismology

**Answer: A**

**Explanation:**

As per the given question,

Cardiology- Is the study of medicine in which deals with heart.

Pedology- It deals with the study of soil in their natural resources.

Seismology- It is the scientific study of the earth-quacks.

Terminology is a terms. So it is is different from the others.

## SSC CGL Tier-2 Previous Papers PDF

### Question 14

If you wrote down all the numbers from 1 to 99, then how many times would you have written '7'?

- A 19
- B 20
- C 21
- D 11

Answer: B

### Explanation:

Total number in which 7 will occur at least once, is mentioned below,

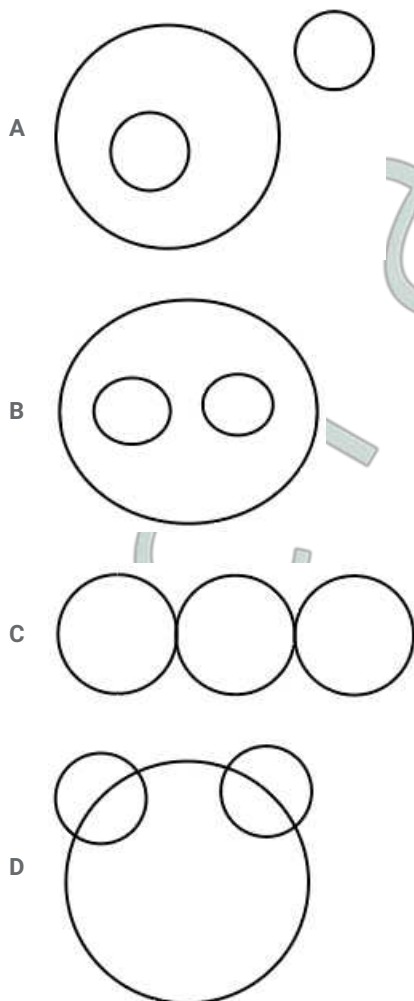
7,17,27,37,47,57,67,77,87,97 - total 11 times 7 repeated.

70,71,72,73,74,75,76,78,79 - total 9 times 7 repeated

Hence total occurrence of 7 is  $11+9=20$

### Question 15

Choose the Venn diagram which best illustrates the relationship among the three given classes: Fruit, Vegetable, Apple

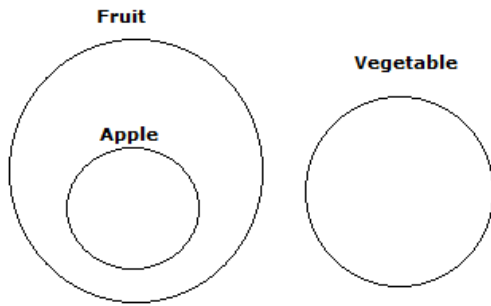


Answer: A

### Explanation:

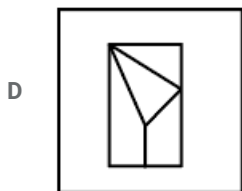
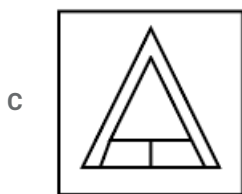
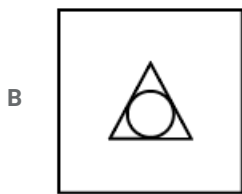
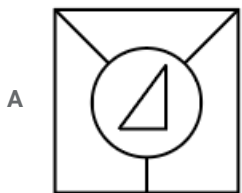


We know that Apple is a kind of Fruit but Vegetable is different from the fruits.



Question 16

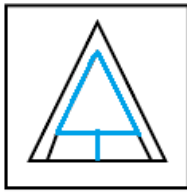
Select the figure in which the given figure is embedded.



Answer: C

Explanation:

From the given pattern, we can conclude that



Hence option C is the correct answer.

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### Question 17

Two statements are given, followed by three conclusions numbered I, II and III. Assuming the statements to be true, even if they seem to beat variance with commonly known facts, decide which of the conclusions logically follow(s) from the statements.

**Statements:**

No grass is a flower.

All flowers are trees.

**Conclusions:**

I. Some trees are flowers.

II. Some trees are grasses.

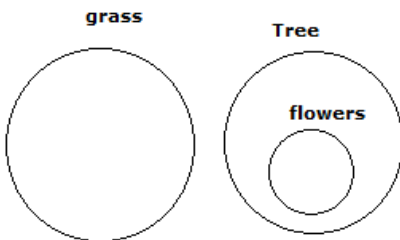
III. No tree is a grass.

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

**Answer:** A

**Explanation:**

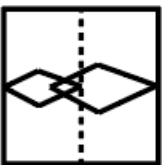
As per the given statement in the question,

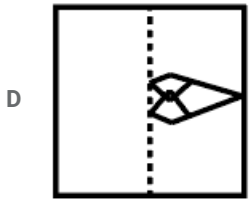
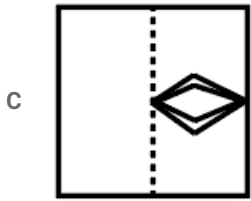
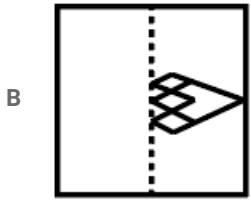
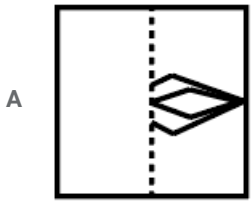


Conclusion I is follow but, conclusion II and III is mutually exclusive so, either of one can follow.

### Question 18

Given here is a square transparent sheet with a pattern on it. How would the pattern appear when the transparent sheet is folded on the dotted line?

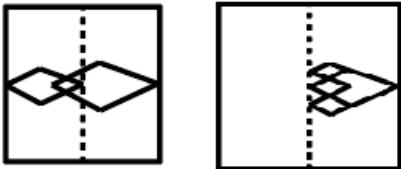




Answer: B

**Explanation:**

As per the given pattern in the question,



After folding the paper, we will get the above pattern.

**Question 19**

A cube coloured pink on all faces is cut into 27 small cubes of equal sizes. How many cubes are painted on one face only?

A 3

B 6

C 8

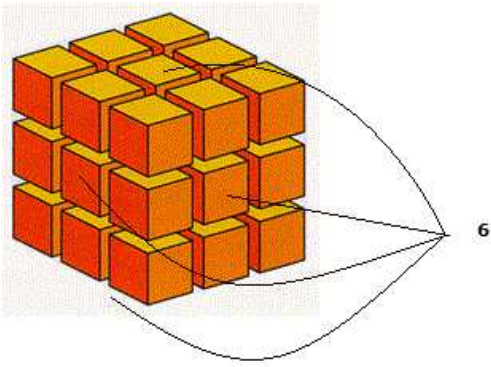
D 4

Answer: B

**Explanation:**

As per the given question, the larger cube is made of 27 small cubes, there will be one such cube on each face, which will have only one colored face.

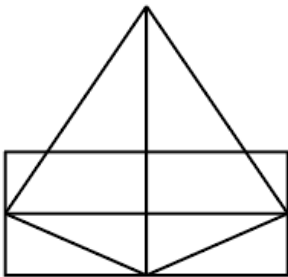
And we know that there is 6 faces in the cube, so there will be 6 such cubes.



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Question 20

How many triangles are there in the following figure?

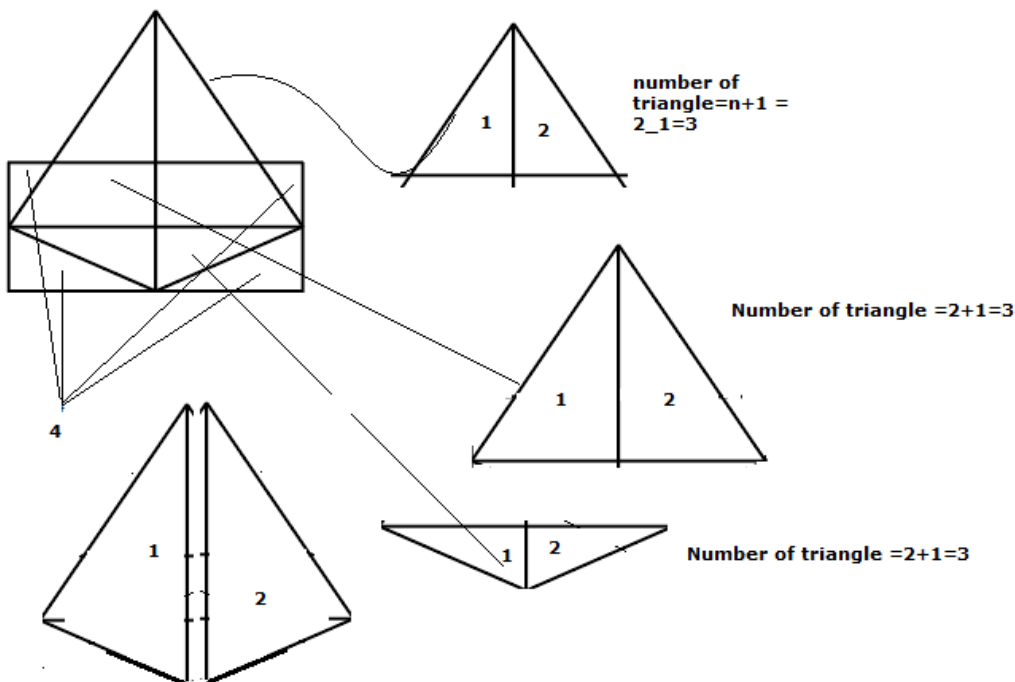


- A 10
- B 12
- C 15
- D 9

Answer: C

Explanation:

From the given diagram, we can conclude there will be total =  $3 + 3 + 3 + 2 + 4 = 15$



Question 21

Select the correct mirror image of the following word when the mirror is placed to the right of the word.

HINT

- A TИИH
- B TИИH
- C TИИH
- D HINT

Answer: A

Explanation:

As per the given question,

we can conclude that option A is the correct answer.

HINT | TИИH

Question 22

Arrange the following words in a logical and meaningful order.

1. Rajasthan
2. India
3. Jaipur
4. North India
5. Asia

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

Answer: B

Explanation:

As per the given in the question, we can say that Jaipur is a place in north India in Rajasthan, in India which is in Asia.

So correct sequence is 3, 1, 4, 2, 5

## General Science Notes for SSC CGL

Question 23

Three of the following four letters are alike in a certain way and one is different. Pick the odd one out.

- A U
- B I
- C O
- D V

**Answer: D**

**Explanation:**

As per the given option we can conclude that, all the given options are vowels apart from option D. So option D is different from the remaining other options.

**Question 24**

Introducing Kavi, Veena said, "She is the sister of the son of the wife of my husband". How is Veena related to Kavi?

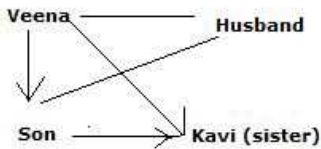
- A Sister
- B Daughter
- C Aunt
- D Mother

**Answer: D**

**Explanation:**

As per the given family tree,

We can conclude that Veena is the mother of Kavi.



**Question 25**

Select the combination of letters that when sequentially placed in the gaps of the given letter series will complete the series \_c\_bd\_cbcda\_a\_db\_a

- A acbcad
- B cdebad
- C bdbcba
- D adabed

**Answer: D**

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### General knowledge

**Instructions**

For the following questions answer them individually

**Question 26**

The Khadi and Village Industries Commission Act was passed in the year \_\_\_\_.

- A 1965
- B 1956
- C 1964

D 1948

Answer: B

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### Question 27

Name the smallest district in India.

A Hailakandi

B Mahe

C Alirajpur

D Guntur

Answer: B

### Question 28

Who was the first Indian to win the Miss Universe title?

A Reita Faria

B Persis Khambatta

C Sushmita Sen

D Madhu Sapre

Answer: C

### Question 29

Name the western most point of India.

A Ghuar Mota

B Amreli

C Bharuch

D Dahod

Answer: A

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### Question 30

\_\_\_\_\_ is a hearing-impaired Indian golfer who won her first professional title at the age of 18. In March 2019, she became the second Indian woman golfer to win on the 'Ladies European Tour'.

A Diksha Dagar

B Gursimar Badwal

C Aditi Ashok

D Vani Kapoor

Answer: A

**Question 31**

Wilson's disease is an inherited disorder in which excessive amounts of \_\_\_\_\_ accumulate in the body.

A sodium

B calcium

C iron

D copper

Answer: D

**Question 32**

Name the oldest operating port in India built by the British East India Company.

A Chennai Port

B Kolkata Port

C Mumbai Port

D Vishakapatnam Port

Answer: B

**Question 33**

An adult human body has \_\_\_\_\_ bones.

A 208

B 206

C 312

D 300

Answer: B

**Question 34**

\_\_\_\_\_ was named the cleanest city in the 'Swachh Survekshan Survey 2019'.

A Indore

B Ujjain

C Mysuru

D Surat

Answer: A

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**Question 35**

People above the age of \_\_\_\_ years are NOT eligible for the Pradhan Mantri Shram Yogi Mandhan Yojana.

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

**Answer: B**

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**Question 36**

\_\_\_\_ is the hottest planet in the solar system.

- A Mercury
- B Earth
- C Mars
- D Venus

**Answer: D**

**Question 37**

The Pradhan Mantri Shram Yogi Mandhan Yojana ensures old age protection for unorganised workers whose monthly income is less than or equal to \_\_\_\_.

- A ₹10,000
- B ₹12,000
- C ₹15,000
- D ₹20,000

**Answer: C**

**Question 38**

The Ayushman Bharat Scheme introduced by the Government of India provides medical coverage of upto ₹ \_\_\_\_ per family per year.

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

**Answer: A**

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**Question 39**

Which team won the Ranji Trophy 2018-19?

- A Vidarbha
- B Kerala
- C Saurashtra
- D Karnataka

**Answer: A**

**Question 40**

Which of the following is NOT a part of the 'Char Dham Yatra' in North India?

- A Vaishno Devi
- B Badrinath
- C Kedarnath
- D Gangotri

**Answer: A**

**Question 41**

The movement of the local farmers of Bardoli in Gujarat against the British in 1928 was led by \_\_\_\_.

- A Lal Bahadur Shastri
- B Vallabhbhai Patel
- C Lokmanya Tilak
- D Jawaharlal Nehru

**Answer: B**

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**Question 42**

The Micro, Small and Medium Enterprises Development Act was passed in the year \_\_\_\_.

- A 2008
- B 2006
- C 2004
- D 2002

**Answer: B**

**Question 43**

The East India Company sent Captain Will i am Hawkins to the court of Emperor \_\_\_\_ in 1608 to seek permission to open a factory at Surat.

- A Jahangir
- B Humayun
- C Akbar
- D Shah Jahan

Answer: A

**Question 44**

What was the historical name of the city of Guwahati?

- A Purushapura
- B Pragjyotishpur
- C Machilipattnam
- D Bhagyanagara

Answer: B

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**Question 45**

The 'Instrument of Surrender' which ended the Portuguese rule in India was signed on \_\_\_\_\_.

- A 19<sup>th</sup> December 1961
- B 29<sup>th</sup> December 1951
- C 15<sup>th</sup> August 1947
- D 26<sup>th</sup> January 1948

Answer: A

**Question 46**

As of 2018, India is the leading milk producing country in the world, accounting for approximately \_\_\_\_\_ of the global market share.

- A 22%
- B 19%
- C 15%
- D 17%

Answer: B

**Question 47**

In 2015, aircraft maker Boeing developed a metal called \_\_\_\_\_, which is lighter than air and stronger than steel.

- A Molybdenum

- B Titanium
- C Microlattice
- D Iridium

Answer: C

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Question 48

\_\_\_\_\_ was the first Chief Election Commissioner of India.

- A M S Gill
- B T N Seshan
- C Sukumar Sen
- D Sunil Arora

Answer: C

Question 49

The approximate diameter of the sun is \_\_\_\_\_ times the diameter of Earth.

- A 92
- B 109
- C 123
- D 146

Answer: B

Question 50

During the Sao Joao festivities, Goans present \_\_\_\_\_ to each other.

- A fruits
- B beer
- C fish
- D flowers

Answer: A

**SSC CGL Free Mock Test**

**Quant**

**Instructions**

For the following questions answer them individually

Question 51

Table shows the percentage distribution of the expenditure incurred on different items for publishing a book.

Items of Expenditure	Percentage of expenditure
Paper	25
Printing	20
Binding	20
Royalty	15
Promotion	10
Transportation	10

Expenditure on Royalty is less than that on Printing by:

- A 10%
- B 20%
- C 25%
- D 15%

Answer: C

**Explanation:**

As per the given table in the question,

The amount of expenditure on royalty=15

The amount of expenditure on printing=20

$$\text{Hence the required percentage} = \frac{(20 - 15) \times 100}{20} = \frac{5 \times 100}{20} = 25\%$$

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Question 52

A starts walking at 4 k mph and after 4 hours, B starts cycling from the same point as that of A, in the same direction at 10 k mph. After how much distance from the starting point will B catch up with A (Correct to two decimal places)?

- A 25.67 km
- B 26.67 km
- C 24.67 km
- D 23.67 km

Answer: B

**Explanation:**

As per the given question,

Distance covered by man in 4 hour =  $4 \times 4 = 16\text{km}$

Let cyclist and walking person will meet after time  $t$  and at the distance  $d$  from the starting point.

$$\text{Hence, for cyclist } t = \frac{d}{10} \text{-----(i)}$$

$$\text{For the walking person, } t = \frac{d - 16}{4} \text{-----(ii)}$$

From the equation (i) and (ii)

$$\Rightarrow 10 = \frac{d}{4} \quad d = 16$$

$$\Rightarrow 4d = 10d - 16 \times 10$$

$$\Rightarrow 10d - 4d = 16 \times 10$$

$$\Rightarrow 6d = 16 \times 10$$

$$16 \times 10$$

$$\Rightarrow d = \frac{16 \times 10}{6} = 26.67 \text{ KM}$$

**Question 53**

Table shows the annual Expenditure of a Company (in Lakh Rupees) over the years.

Item of expenditure →	Salary	Fuel and Transport	Bonus	Interest on Loans	Taxes
Year ↓					
1998	288	98	3	23.4	83
1999	342	112	2.52	32.5	108
2000	324	101	3.84	41.6	74
2001	336	133	3.68	36.4	88
2002	420	142	3.96	49.4	98

What is the average amount of Interest on loans (in Lakh rupees) which the company paid during the period 1998 to 2002?

- A 34.18
- B 33.72
- C 32.43
- D 36.66

Answer: D

**Explanation:**

As per the given data,

$$\text{Total amount of interest on loans} = 23.4 + 32.5 + 41.6 + 36.4 + 49.4 = 183.3$$

$$183.3$$

$$\text{Hence, average amount of interest on loans} = \frac{183.3}{5} = 36.7 = 36.66 \text{ lakhs}$$

**Question 54**

Table shows the percentage of marks obtained by seven students in six different subjects in an examination. The numbers in the brackets are the maximum marks in each subject.

Student	Subject(Max.Marks)					
	Maths (150)	Chemistry (130)	Physics (120)	Geography (100)	History (60)	Computer Science (40)
A	90	50	90	60	70	80
B	100	80	80	40	80	70
C	90	60	70	70	90	70
D	80	65	80	80	60	60
E	80	65	85	95	50	90
F	70	75	65	85	40	60
G	65	35	50	77	80	80

What are the average marks obtained by all the seven students in Physics? (Correct to two decimal places)

- A 89.14
- B 91.16
- C 74.28
- D 93.14

**Answer:** A

**Explanation:**

As per the data given in the question,

$$\frac{90 + 80 + 70 + 80 + 85 + 65 + 50}{7} = \frac{520}{7} = 74.28$$

The average percentage marks obtained by the student in physics

As the maximum marks is 120, the average marks obtained is  $74.28 \times 120 / 100 = 89.14$

## SSC CGL Previous Papers (DOWNLOAD PDF)

**Question 55**

Table shows the sales of books (in thousands) from six branches of a publishing company during 2000 and 2001.

Branches →	B1	B2	B3	B4	B5	B6
Year ↓						
<b>2000</b>	80	75	95	85	75	70
<b>2001</b>	105	65	110	95	95	80

What is the total sales of books from branches B1, B3 and B6 together for both the years (in thousands)?

- A 240
- B 310
- C 650
- D 540

**Answer:** D

**Explanation:**

As per the given data,

Total sales of books from the branches B1 =  $80 + 105 = 185$

Total sales of books from the branches B3 =  $95 + 110 = 205$

Total sales of books from the branches B6 =  $70 + 80 = 150$

Hence total number of sold books from all the three branches =  $185 + 205 + 150 = 540$

**Question 56**

If 85% of a number is added to 75, then the result is the number itself. The number is:

- A 500
- B 200
- C 100
- D 300

**Answer:** A

**Explanation:**

Let the number is  $x$ ,

$$x \times 85$$

Now 85% of the = 100

As per the condition,

$$x \times 85$$

$$x = 75 + 100$$

$$x \times 85$$

$$\Rightarrow x - 100 = 75$$

$$100 \times x - x \times 85$$

$$\Rightarrow \frac{100}{100} = 75$$

$$15 \times x$$

$$\Rightarrow 100 = 75$$

$$75 \times 100$$

$$\Rightarrow x = \frac{75}{15} = 500$$

**Question 57**

The value of  $\left[ \frac{\sin^2 24^\circ + \sin^2 66^\circ}{\cos^2 24^\circ + \cos^2 66^\circ} + \sin^2 61^\circ + \cos 61^\circ \sin 29^\circ \right]$  is:

A 1

B 3

C 2

D 0

**Answer: C**

**Explanation:**

As per the given question,

$$\left[ \frac{\sin^2 24^\circ + \sin^2 66^\circ}{\cos^2 24^\circ + \cos^2 66^\circ} + \sin^2 61^\circ + \cos 61^\circ \sin 29^\circ \right]$$

We know that  $\sin(90^\circ - \theta) = \cos \theta$  and  $\cos(90^\circ - \theta) = \sin \theta$ , so this property in the above equation,

$$\Rightarrow \left[ \frac{\sin^2 24^\circ + (\cos(90^\circ - 66^\circ))^2}{\cos^2 24^\circ + (\sin(90^\circ - 66^\circ))^2} + \sin^2 61^\circ + \cos 61^\circ \cos(90^\circ - 29^\circ) \right]$$

$$\Rightarrow \left[ \frac{\sin^2 24^\circ + \cos^2 24^\circ}{\cos^2 24^\circ + \sin^2 24^\circ} + \sin^2 61^\circ + \cos 61^\circ \cos 61^\circ \right]$$

We know that  $\sin^2 \theta + \cos^2 \theta = 1$ , so using this property in the above equation,

$$\Rightarrow [1 + \sin^2 61^\circ + \cos^2 61^\circ]$$

$$\Rightarrow 1 + 1 = 2$$

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**Question 58**

ABCD is a cyclic quadrilateral such that AB is the diameter of the circle circumscribing it and  $\angle ADC = 129^\circ$ . Then,  $\angle BAC$  is equal to:

A  $61^\circ$

B  $49^\circ$



C  $39^\circ$

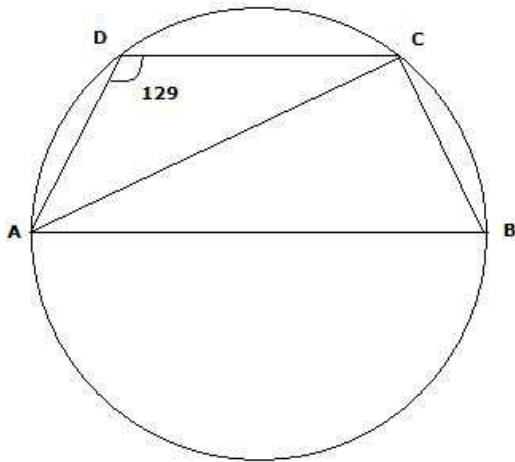
D  $51^\circ$

Answer: C

**Explanation:**

As per the given question,

It is given that  $\angle ADC = 129^\circ$



As per the diagram, ABCD is a cyclic quadrilateral. So  $\angle ADC + \angle ABC = 180^\circ$

Now,  $\angle ABC = 180^\circ - 129^\circ = 51^\circ$

Now, In  $\triangle ACB$

$\angle ACB = 90^\circ$  (angle at the circumference with in half circle)

So,  $\angle BAC = 90^\circ - 51^\circ = 39^\circ$

**Question 59**

The average of 27 numbers is zero. Out of them, how many maybe greater than zero, at the most?

A 0

B 26

C 20

D 15

Answer: B

**Explanation:**

As per the question,

There are 27 numbers, the average of 27 numbers = 0

So, here minimum 26 number can be greater than 0,  $x_1 + x_2 + \dots + x_{26} - X_{27} = 0$

the sum of 26 numbers can be equal the -27th number which is negative and less than 0, and the sum can be zero.

**Question 60**

PA and PB are tangents to a circle with center O, from a point P outside the circle, and A and B are points on the circle. If  $\angle APB = 40^\circ$  then  $\angle OAB$  is equal to:

A  $40^\circ$

B  $20^\circ$

C  $50^\circ$

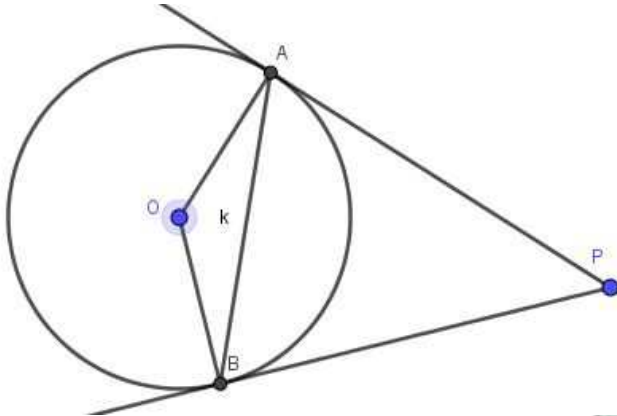
D  $25^\circ$

Answer: B

**Explanation:**

As per the given question,

Given that,  $\angle APB = 40^\circ$



But we know that tangent always make  $90^\circ$

Hence,  $\angle AOB + \angle APB = 180$

$$\Rightarrow \angle AOB + 40 = 180$$

$$\Rightarrow \angle AOB = 180^\circ - 40^\circ = 140^\circ$$

$$\Rightarrow \angle OAB = \angle OBA$$

Now, in  $\triangle AOB$

$$\Rightarrow \angle AOB + \angle OAB + \angle OBA = 180$$

$$\Rightarrow 140 + 2\angle OAB = 180$$

$$\Rightarrow 2\angle OAB = 180 - 140 = 40$$

$$\Rightarrow \angle OAB = 20^\circ$$

## SSC CGL Tier-2 Previous Papers PDF

Question 61

3 men, 4 women and 6 boys together can complete a work in 6 days. A woman does triple the work a man does and a boy does half the work a man does. How many women alone will be able to complete this work in 4 days?

A 7

B 8

C 6

D 9

Answer: D

**Explanation:**

As per the question,

Let the man completed  $x$  work, women completed  $3x$  work and children completed  $2$  work.

Hence, the ratio of man, women and children's work ratio =  $x : 3x : 2 = 2 : 6 : 1$

Let one man's one day's work =  $a$ , one women's one day's work =  $b$  and one children's one day's work =  $c$

Now, as per the condition, 4 women is working for 6 days so total work will be finish =  $4b \times 6 = 24b$

Hence, total contribution of work by women  $24b = 9 = 3$

$$b = \frac{1}{36}$$

So, one women can finish the work in 36 days,

Let  $n$  number of women completing the work in 4 days,

$$36n = 4$$

$$n = \frac{4}{36}$$

$$n = 9$$

Hence 9 women can finish the work in 4 days.

#### Question 62

What is the difference between a single discount of 30% and a single discount equivalent to two successive discounts of 25% and 5%, being given on shopping of ₹2,000?

- A ₹20
- B ₹25
- C No difference
- D ₹15

Answer: B

#### Explanation:

As per the given question,

$$30\% \text{ of discount on Rs. } 2000 \text{ will be } \frac{2000}{100} \times 70 = 1400$$

$$\text{Successive discount on } 2000, \text{ is } 25\% \text{ and } 5\% \text{ so the discount amount } \frac{75 \times 2000}{100} \times \frac{95}{100} = 1425$$

Hence the required difference =  $1425 - 1400 = 25$ Rs.

#### Question 63

A sphere of radius 6 cm is melted and recast into spheres of radius 2 cm each. How many such spheres can be made?

- A 25
- B 27
- C 36
- D 24

Answer: B

**Explanation:**

As per the given question,

Radius of larger sphere (R)=6cm and radius of smaller sphere (r)=2cm

We know that, volume of sphere =  $\frac{4\pi R^3}{3}$

So,  $nV_1 = V$

$$\Rightarrow n \times \frac{4\pi r^3}{3} = \frac{4\pi R^3}{3}$$

$$\Rightarrow n = \frac{R^3}{r^3} = \frac{6^3}{2^3}$$

$$\Rightarrow n = \frac{216}{8}$$

$$\Rightarrow n = 27$$

Hence total 27 such sphere can be made.

## SSC CGL Important Questions PDF

### Question 64

If a sum amounts to ₹2,190 in four years and ₹2,409 in five years at compound interest, when the interest is compounded yearly, then the annual rate of interest is:

- A 11%
- B 10%
- C 9%
- D 8%

**Answer:** B

**Explanation:**

Let the rate of interest is R% per annum.

Let the principle amount =P

$$A = P\left(1 + \frac{R}{100}\right)^4$$

$$A_1 = P\left(1 + \frac{R}{100}\right)^4 \text{---(i)}$$

Similarly,

$$A_2 = P\left(1 + \frac{R}{100}\right)^5 \text{---(ii)}$$

From equation(i) and (ii)

$$\Rightarrow \frac{A_1}{A_2} = \frac{P\left(1 + \frac{R}{100}\right)^4}{P\left(1 + \frac{R}{100}\right)^5}$$

$$\Rightarrow A_2 = \frac{A_1}{1 + \frac{R}{100}}$$

$$\Rightarrow A_1 = \frac{A_2}{1 + \frac{R}{100}}$$

$$\Rightarrow A_1 - 1 = 100$$

$$\Rightarrow \frac{A_2 - A_1}{A_1} = \frac{R}{100}$$

$$\Rightarrow \frac{2409 - 2190}{2190} = \frac{R}{100}$$

$$\Rightarrow \frac{21900}{2190} = R$$

$$\Rightarrow R = 10\%$$

**Question 65**

When an integer  $n$  is divided by 8, the remainder is 3. What will be the remainder if  $6n-1$  is divided by 8 ?

- A 2
- B 0
- C 4
- D 1

**Answer:** D

**Explanation:**

Let the quotient is  $q$ ,

$$n = 8q + 3 \text{-----(i)}$$

Now, multiplying 6 in the equation (i)

$$\Rightarrow 6n = 48q + 18$$

$$\Rightarrow 6n = 8(6q + 2) + 2$$

$$\Rightarrow 6n - 1 = 8(6q + 2) + 1$$

Hence, remainder will be 1.

**Question 66**

If  $a^3 - b^3 = 208$  and  $a - b = 4$ , then  $(a + b)^2 - ab$  is equal to:

- A 52
- B 42
- C 32

D 38

Answer: A

Explanation:

From the given question,

$$a^3 - b^3 = 208 \text{ and } a - b = 4$$

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

Substituting the values,

$$\Rightarrow 4^3 = 208 - 3ab(4)$$

$$208 - 64 = 12 \times 3ab$$

$$\Rightarrow ab = 12 = 12 = 12$$

$$\text{Now, } (a + b)^2 = (a - b)^2 + 4ab$$

$$\Rightarrow (a + b)^2 - ab = (a - b)^2 + 3ab = 4^2 + 3 \times 12$$

$$\Rightarrow (a + b)^2 - ab = 52$$

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Question 67

If  $x + \frac{1}{x} = 5$ , then  $x^3 + \frac{1}{x^3}$  is equal to:

A 130

B 110

C 145

D 125

Answer: B

Explanation:

As per given in the question,

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

taking cube of both side,

$$\Rightarrow \left(x + \frac{1}{x} = 5\right)^3 = x^3 + \frac{1}{x^3} + 3x \times \frac{1}{x} \left(x + \frac{1}{x}\right)$$

Now, substituting the values in the question,

$$\Rightarrow \left(x + \frac{1}{x} = 5\right)^3 = x^3 + \frac{1}{x^3} + 3x \times \frac{1}{x} \left(x + \frac{1}{x}\right)$$

$$\Rightarrow (5^3) = x^3 + \frac{1}{x^3} + 3 \times 5$$

$$\Rightarrow 125 = x^3 + \frac{1}{x^3} + 15$$

$$\Rightarrow x^3 + \frac{1}{x^3} = 125 - 15 = 110$$

Question 68

If  $3 \cos^2 A + 7 \sin^2 A = 4$ , then what is the value of  $\cot A$ , given that A is an acute angle?

A 1

B  $\frac{\sqrt{3}}{2}$

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

D  $\sqrt{3}$

Answer: D

Explanation:

As per the given question,

$$3 \cos^2 A + 7 \sin^2 A = 4$$

$$\Rightarrow 3 \cos^2 A + 3 \sin^2 A + 4 \sin^2 A = 4$$

We know that  $\sin^2 \theta + \cos^2 \theta = 1$

$$\Rightarrow 3(\cos^2 A + \sin^2 A) + 4 \sin^2 A = 4$$

$$\Rightarrow 3(1) + 4 \sin^2 A = 4$$

$$\Rightarrow 4 \sin^2 A = 1$$

$$\Rightarrow \sin A = \frac{1}{2} = \sin \frac{\pi}{6}$$

$$\Rightarrow A = \frac{\pi}{6}$$

$$\text{Hence, } \cot \theta = \cot \frac{\pi}{6} = \sqrt{3}$$

Question 69

If  $(x - 5)^3 + (x - 6)^3 + (x - 7)^3 = 3(x - 5)(x - 6)(x - 7)$ , then what is the value of x ?

A 5

B 6

C 18

D 7

Answer: B

Explanation:

As per the given question,

$$(x - 5)^3 + (x - 6)^3 + (x - 7)^3 = 3(x - 5)(x - 6)(x - 7)$$

Let  $(x-5)=a$ ,  $(x-6)=b$  and  $(x-7)=c$

$$\text{Now, } (x - 5)^3 + (x - 6)^3 + (x - 7)^3 = 3(x - 5)(x - 6)(x - 7)$$

$$\Rightarrow a^3 + b^3 + c^3 = 3abc$$

We know that  $a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$

$$\text{Hence, } [(x - 5) + (x - 6) + (x - 7)][(x - 5)^2 + (x - 6)^2 + (x - 7)^2 - (x - 5)(x - 6) - (x - 6)(x - 7) - (x - 7)(x - 5)] = 0$$

$$\Rightarrow [(3x - 18)][(x - 5)^2 + (x - 6)^2 + (x - 7)^2 - (x - 5)(x - 6) - (x - 6)(x - 7) - (x - 7)(x - 5)] = 0$$

$$\text{So, } 3x - 18 = 0$$

$$\text{Hence } x = 6$$

## General Science Notes for SSC CGL

### Question 70

If  $\tan x = \cot(45^\circ + 2x)$ , then what is value of  $x$ ?

- A  $15^\circ$
- B  $20^\circ$
- C  $45^\circ$
- D  $\frac{45^\circ}{2}$

**Answer:** A

### Explanation:

Given,

$$\tan x = \cot(45^\circ + 2x)$$

We know that,  $\tan(90^\circ - \theta) = \cot \theta$

$$\Rightarrow \tan x = \tan(90^\circ - 45^\circ - 2x)$$

$$\Rightarrow \tan x = \tan(45^\circ - 2x)$$

$$\Rightarrow x = 45^\circ - 2x$$

$$\Rightarrow 3x = 45^\circ$$

$$\Rightarrow x = 15^\circ$$

### Question 71

If the selling price of 40 articles is equal to the cost price of 50 articles, then the percentage loss or gain is:

- A 20% loss
- B 25% loss
- C 20% gain
- D 25% gain

**Answer:** D

### Explanation:

Let the cost price of one article = 1Rs.

So cost price of 50 article = 50Rs.

As per the question it is given that selling price of 40 article = cost price of 50 article = 50Rs,

So selling price of 40 article = 50Rs.

Hence selling price of one article =  $\frac{50}{40} = 1.25$ Rs.

So, the gain amount per article =  $1.25 - 1 = 0.25$ Rs.

Hence the %gain =  $\frac{0.25 \times 100}{1} = 25\%$

### Question 72

In  $\triangle ABC$ ,  $\angle A = 50^\circ$ . Its sides AB and AC are produced to the point D and E. If the bisectors of the  $\angle CBD$  and  $\angle BCE$  meet at the point O, then  $\angle BOC$  will be equal to:

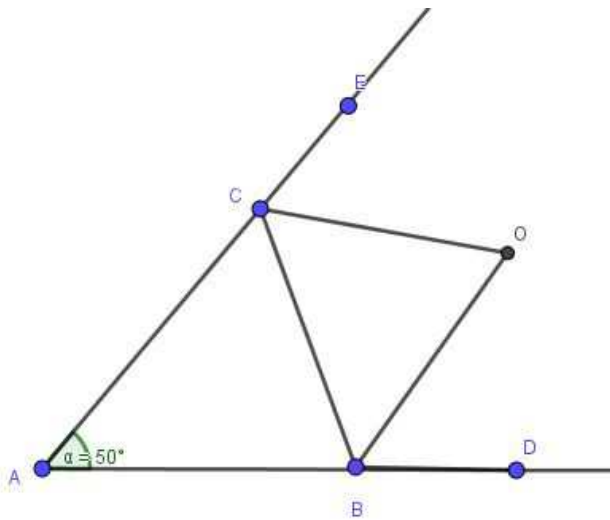


- A  $40^\circ$
- B  $65^\circ$
- C  $75^\circ$
- D  $55^\circ$

Answer: B

Explanation:

As per the question,



$$\angle ACB = 180 - \angle ECO \text{ ----- (i)}$$

$$\angle ABC = 180 - \angle BDC \text{ ----- (ii)}$$

Now, in  $\triangle ABC$ ,

$$\Rightarrow \angle BAC + \angle ABC + \angle BCA = 180^\circ \text{ ----- (iii)}$$

From the equation (i), (ii) and (iii)

$$\Rightarrow 50 + 180 - \angle ECO + 180 - \angle BDC = 180^\circ$$

$$\Rightarrow \angle ECO + \angle BDC = 230^\circ \text{ ----- (iv)}$$

$$\Rightarrow \angle ECO = 2\angle OBC$$

$$\Rightarrow \angle ECB = 2\angle OCB$$

$$\Rightarrow 2\angle OCB + 2\angle OBC = 230^\circ$$

$$\Rightarrow \angle OCB + \angle OBC = 115^\circ$$

Now, In  $\triangle OCB$

$$\Rightarrow \angle OBC + \angle OCB + \angle BOC = 180$$

$$\Rightarrow 115 + \angle BOC = 180^\circ$$

$$\Rightarrow \angle BOC = 180^\circ - 115^\circ = 65^\circ$$

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### Question 73

A earns ₹180 per hour and works for 7 hours per day. B earns ₹160 per hour and works for 5 hours per day. What is the ratio of per day wages of A and B?

- A 40 : 61

B 63 : 40

C 20 : 30

D 33 : 20

Answer: B

**Explanation:**

As per the question,

A is getting 180 Rs per hour and working 7 hour in a day,

So, the earning of A in one day =  $180 \times 7$

B is getting 160 Rs per hour and working 5 hour in a day,

So, The earning of B in one day =  $160 \times 5$

$$\frac{180 \times 7}{160 \times 5} = \frac{63}{40}$$

Hence the required ratio =  $160 \times 5 = 40$

**Question 74**

If the radius of the circumcircle of an equilateral triangle is 8 cm, then the measure of radius of its incircle is:

A 16cm

B 4cm

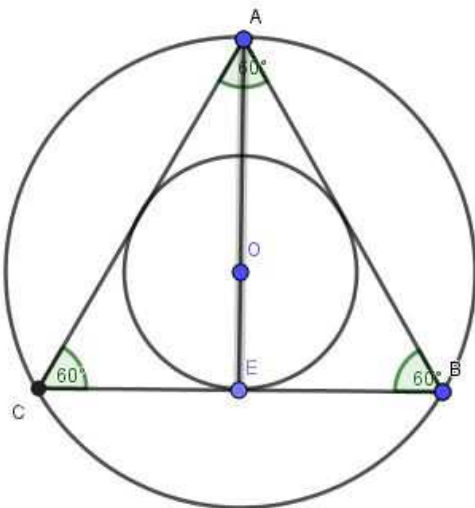
C 12cm

D 8 cm

Answer: B

**Explanation:**

As per the given question,



We know that circumradius of an equilateral triangle  $(R) = \frac{a}{\sqrt{3}}$

And radius of incircle  $(r) = \frac{a}{2\sqrt{3}}$

Hence,

$a$

$$R = \frac{\sqrt{3}a}{2\sqrt{3}}$$

$$\Rightarrow r = 2$$

$$\Rightarrow r = 2 = 2 = 4\text{cm}$$

$$\Rightarrow r = 4\text{cm}$$

**Question 75**

$9^3 \div [2^6 \div \{4^3 - (2^2 + 4)\}]$  is equal to:

**A**  $\frac{15}{4}$

**B**  $\frac{39}{8}$

**C** 4

**D** 3

**Answer: B**

**Explanation:**

From the given question,

$$9^3 \div [2^6 \div \{4^3 - (2^2 + 4)\}]$$

Starts solving from small brackets (),

$$\Rightarrow 9^3 \div [2^6 \div \{4^3 - (5 + 4)\}]$$

$$\Rightarrow 9^3 \div [2^6 \div \{4^3 - (10 + 3)\}]$$

$$\Rightarrow 9^3 \div [2^6 \div \{4^3 - 13\}]$$

Start solving middle brackets {},

$$\Rightarrow 9^3 \div [2^6 \div \{13 - 13\}]$$

$$\Rightarrow 9^3 \div [2^6 \div \{13 \times 4 - 13 \times 3\}]$$

$$\Rightarrow 9^3 \div [2^6 \div \{52 - 39\}]$$

$$\Rightarrow 9^3 \div [2^6 \div 13]$$

Start solving large brackets [],

$$\Rightarrow 9^3 \div [6 \div 13]$$

$$\Rightarrow 9^3 \div 2$$

$$\Rightarrow \frac{39}{4} \div 2$$

$$\Rightarrow \frac{39}{8}$$

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**English**

**Instructions**

For the following questions answer them individually

**Question 76**

Select the most appropriate antonym of the given word.

**ILLUMINATE**

- A add
- B erase
- C light
- D darken

**Answer: D**

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**Question 77**

Select the correct passive form of the given sentence.

**Ananya plucks fresh flowers from the garden every day.**

- A Fresh flowers have been plucked by Ananya from the garden every day.
- B Fresh flowers were plucked by Ananya from the garden every day.
- C Fresh garden is plucked by Ananya from the flowers every day.
- D Fresh flowers are plucked by Ananya from the garden every day.

**Answer: D**

**Question 78**

Select the most appropriate option to fill in the blank.

**Colours, they say have the power to calm, pacify and relax; they can energise, activate and \_\_\_\_\_.**

- A involve
- B invigorate
- C enrage
- D interest

**Answer: B**

**Question 79**

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

**An instrument for measuring the atmospheric pressure**

- A altometer
- B barometer
- C ammeter
- D thermometer

**Answer: B**

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### Question 80

Select the most appropriate option to fill in the blank.

In ancient Greece, women were not allowed to \_\_\_\_\_ in the Olympic Games.

- A comply
- B collide
- C compete
- D cope

Answer: C

### Question 81

Select the most appropriate synonym of the given word.

FUSE (Verb)

- A correct
- B break
- C unused
- D combine

Answer: D

### Question 82

Select the correctly spelt word.

- A jewelry
- B scramble
- C defnition
- D acceptance

Answer: B

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### Question 83

Select the most appropriate synonym of the given word.

ATTRIBUTE

- A quality
- B praise
- C respect
- D speech

Answer: A

**Question 84**

Select the most appropriate meaning of the underlined idiom in the given sentence.  
The dog played in the pond to his heart's content.

- A avoiding getting too wet
- B till he was completely sick
- C as much as he wanted to
- D only upto his legs

Answer: C

**Question 85**

Select the most appropriate meaning of the underlined idiom in the given sentence.  
"These glasses suit you to a T," said Ria to Vandana.

- A look very good on your face
- B need to be worn with a suit
- C make you look weird
- D are not suitable for your work

Answer: A

**SSC CHSL Previous Question papers (download pdf)**

**Question 86**

In the sentence identify the segment which contains the grammatical error.  
Entering the hall, the show had started.

- A had started
- B the hall
- C Entering
- D the show

Answer: C

**Question 87**

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

An old misunderstanding exists among the two families, so they are not friendly any more.

- A will exist among the two families
- B exists between the two families
- C has exist within the two families

D No improvement

Answer: B

### 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.

### Comprehension:

Dusk sets in at the Varagaliar elephant camp deep within the Anamalai Tiger Reserve (ATR). It's dinner time for the 25-year-old tusker and he's (1)\_\_\_\_\_ balls made of steamed ragi flour mixed (2)\_\_\_\_\_ some rice, green gram, salt and jaggery. (3)\_\_\_\_\_ are half-a-dozen Forest Department (4)\_\_\_\_\_ around, including V. Ganesan, the Field Director (5)\_\_\_\_\_ ATR.

### Question 88

Select the most appropriate option to fill in blank No.(1)

A feeding

B feeds

C fed

D feed

Answer: C

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### Question 89

Select the most appropriate option to fill in blank No.(2)

A by

B of

C with

D from

Answer: C

### Question 90

Select the most appropriate option to fill in blank No.(3)

A Here

B There

C Everywhere

D Nowhere

Answer: B

### Question 91

Select the most appropriate option to fill in blank No.(4)

A employee

- B officials
- C person
- D ministers

Answer: B

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### Question 92

Select the most appropriate option to fill in blank No.(5)

- A on
- B between
- C among
- D of

Answer: D

### Instructions

For the following questions answer them individually

### Question 93

Given below are four jumbled sentences. Select the option that gives their correct order.

- A. Once the formalities are done, you can start using your account and save time and money.
- B. Opening a bank account can seem intimidating.
- C. Getting your account opened is just a matter of providing certain details and funding your account.
- D. Fortunately, most banks follow a standardized process.

- A CBDA
- B ADBC
- C BDCA
- D BADC

Answer: C

### Question 94

In the sentence identify the segment which contains the grammatical error.

"I done a lot of work today," she said.

- A a lot of
- B work today
- C she said
- D I done

Answer: D

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**Question 95**

Select the correctly spelt word.

- A choose
- B chooze
- C chooj
- D chuse

**Answer: A**

**Question 96**

Given below are four jumbled sentences. Select the option that gives their correct order.

- A. A man on a bike had to ride on the pavement.
- B. When he tried to plunge onto the road, a car hit him.
- C. As the bus inched through the evening life, the traffic grew.
- D. There was no space on the road any more.

- A CDAB
- B CBAD
- C ADBC
- D DBCA

**Answer: A**

**Question 97**

Select the word which means the same as the group of words given.  
The part of a country's government responsible for its legal system

- A judiciary
- B legislature
- C executive
- D police

**Answer: A**

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**Question 98**

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

Scarcely had he gone out than a client came to meet him.

- A he had go out when
- B he had gone out than
- C No improvement

D had he gone out when

Answer: D

**Question 99**

Select the correct active form of the given sentence.

Dinesh was looked after by his grandmother when his parents went abroad.

- A Dinesh's grandmother looks after him when his parents went abroad.
- B Dinesh's grandmother was looking after him when his parents went abroad.
- C Dinesh's grandmother looked after him when his parents went abroad.
- D Dinesh looked after his grandmother when his parents went abroad.

Answer: C

**Question 100**

Select the most appropriate antonym of the given word.

DEFICIT

- A surplus
- B adhere
- C remove
- D credit

Answer: A

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