



## SSC CGL 6th March 2020 Shift-1

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# General Intelligence and Reasoning

## Instructions

For the following questions answer them individually

### Question 1

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 from the rest.

A 11:121

B 13: 169

C 17:289

D 15:250

Answer: D

### Explanation:

$$(11)^2 = 121$$

$$(13)^2 = 169$$

$$(17)^2 = 289$$

$$(15)^2 = 225$$

∴ The correct answer is option D.

## SSC CGL Free Mock Test

### Question 2

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

15	3	24
21	6	30
49	5	?

A 92

B 98

C 88

D 82

Answer: C

### Question 3

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. Some machines are kites.

2. No machine is a pigeon.

Conclusions:

I. Some machines are pigeons.

II. All kites are pigeons.

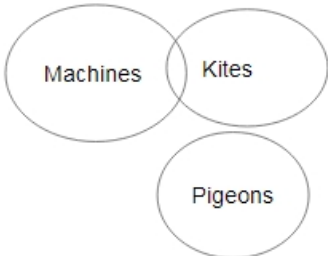
III. Some kites are not pigeons.

A Only conclusions I and III follow.

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

**Answer: D**

**Explanation:**



Only conclusion III follows.  
 $\therefore$  The correct answer is option D.

**Question 4**

Select the number that can replace the question mark (?) in the following series.  
 5, 10, 26, ?, 122, 170

- A 82
- B 50
- C 65
- D 77

**Answer: B**

**Explanation:**

$$(2)^2 + 1 = 4 + 1 = 5$$

$$(3)^2 + 1 = 9 + 1 = 10$$

$$(5)^2 + 1 = 25 + 1 = 26$$

$$(7)^2 + 1 = 49 + 1 = 50$$

$$(11)^2 + 1 = 121 + 1 = 122$$

$$(13)^2 + 1 = 169 + 1 = 170$$

$\therefore$  The correct answer is option B.

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**Question 5**

Select the letter that can replace the question mark (?) in the following series.  
 A, E, I, ?, Q, U

- A M
- B N
- C K
- D O

**Answer: A**

**Explanation:**

The series follows pattern as,

$$A + 4 = E$$

$$E + 4 = I$$

$$I + 4 = M$$

$$M + 4 = Q$$

$$Q + 4 = U$$

∴ The correct answer is option A.

**Question 6**

Select the letter-cluster that can replace the question mark (?) in the following series.

ADG, CGK, EJO, ?, IPW

A GMZ

B GNS

C GNZ

D GMS

**Answer:** D

**Explanation:**

$$(A + 2)(D + 3)(G + 4) = CGK$$

$$(C + 2)(G + 3)(K + 4) = EJO$$

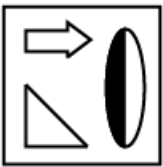
$$(E + 2)(J + 3)(O + 4) = GMS$$

$$(G + 2)(M + 3)(S + 4) = IPW$$

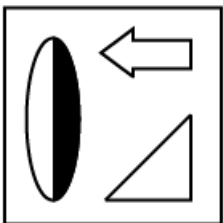
∴ The correct answer is option D.

**Question 7**

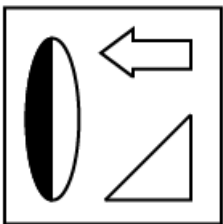
Select the correct mirror image of the given figure when a mirror is placed on the right of the figure.

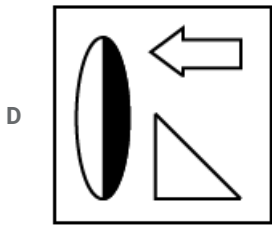
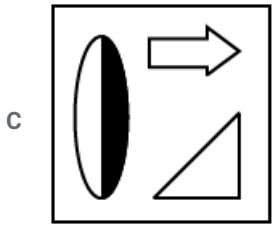


A



B



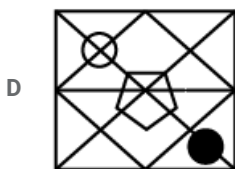
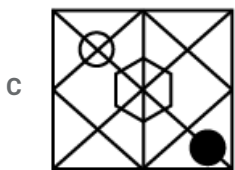
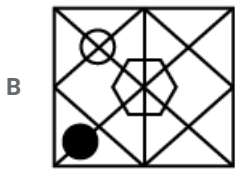
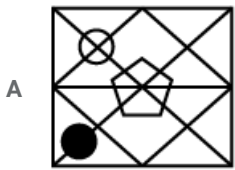
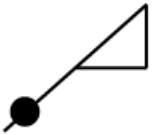


Answer: A

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Question 8

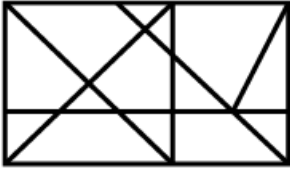
Select the option in which the given figure is embedded (rotation is not allowed)



Answer: A

Question 9

How many triangles are there in the given figure?



- A 25
- B 22
- C 16
- D 28

Answer: A

Question 10

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

North : South

- A Frown : Smile
- B Whole : Total
- C Ductile : Bendable
- D Integrity : Honesty

Answer: A

Explanation:

Opposite of North is South.  
Similarly,  
Opposite of the frown is smile.  
∴ The correct answer is option A.

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Question 11

In a certain a group of men and horses, the total number of legs is 14 more than twice the number of heads. How many horses are there in the group?

- A 11
- B 7
- C 9
- D 5

Answer: B

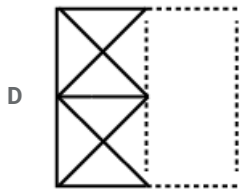
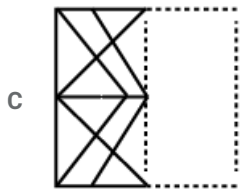
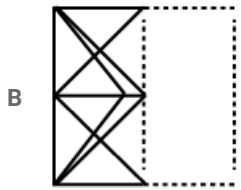
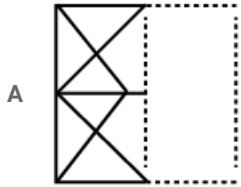
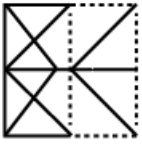
Explanation:

The total number of legs is 14 more than twice the number of heads.  
A horse have 2 more legs than man so,  
Number of horse =  $14/2 = 7$

∴ The correct answer is option B.

**Question 12**

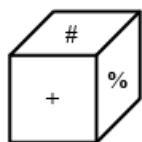
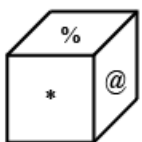
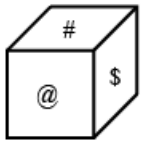
Select the option that depicts how the given transparent sheet of paper would appear if it is folded at the dotted line.



Answer: B

**Question 13**

Three different positions of the same dice are shown. Select the symbol that will be on the face opposite to the one showing '+'.  
# % \$ @ \* @ # + %



A #

B \*

C @

D \$

Answer: C

**Question 14**

In a certain code language, 'PAGE' is coded as '161495'. How will 'PART' be coded as in that language?

- A 16125020
- B 16132420
- C 16128620
- D 16136220

**Answer: B**

**Explanation:**

$$P = 16$$

$$A = 1$$

$$G = (7)^2 = 49$$

$$E = 5$$

Similarly,

$$P = 16$$

$$A = 1$$

$$R = (18)^2 = 324$$

$$T = 20$$

So,

'PART' is coded as '16132420'.

∴ The correct answer is option B.

**Question 15**

'Astronomy' is related to 'Stars' in the same way as 'Agronomy' is related to '.....'

- A Mines
- B Crops
- C Planets
- D Emotions

**Answer: B**

**Explanation:**

'Astronomy' is related to 'Stars' in the same way as 'Agronomy' is related to 'crops'

∴ The correct answer is option B.

**Question 16**

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 BJT
- B GCV
- C DDP
- D FBL

**Answer: B**

**Explanation:**

$$B = 2, J = 10, 2 \times 10 = 20(T)$$

$$G = 7, C = 3, 7 \times 3 = 21(U)$$



$$D = 4, D = 4, 4 \times 4 = 16(P)$$

$$F = 6, B = 2, 6 \times 2 = 12(L)$$

∴ The correct answer is option B.

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### Question 17

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

- A Clarinet
- B Trumpet
- C Xylophone
- D Saxophone

**Answer:** C

#### Explanation:

Except option C, remaining all are play by the mouth.

∴ The correct answer is option C.

### Question 18

**A+B** means 'A is the husband of B';

**A-B** means 'B is the sister of A';

**A × B** means 'A is the mother of B';

**A ÷ B** means 'B is the son of A'.

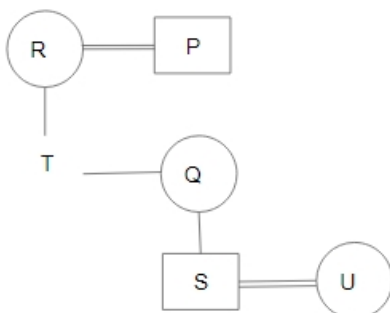
If,  $P + R \times T - Q \div S + U$ , then how is P related to S?

- A Maternal grandfather
- B Father-in-law
- C Paternal grandfather
- D Uncle

**Answer:** A

#### Explanation:

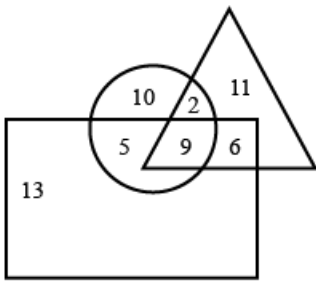
In the diagram, square shows the males, circle shows the females, vertical lines shows the generation, single horizontal lines shows the brother/sister and double horizontal lines shows the couples.



From the diagram,  
P is the maternal grandfather of S.

Question 19

In the given Venn diagram, the 'rectangle' represents 'travellers who like to travel by plane', the 'circle' represents 'travellers who like to travel by bus', and the 'triangle' 'represents travellers who like to travel by train'. The numbers given in the diagram represent the number of travellers in that particular category.



How many travellers like to travel either by train or plane but NOT by bus?

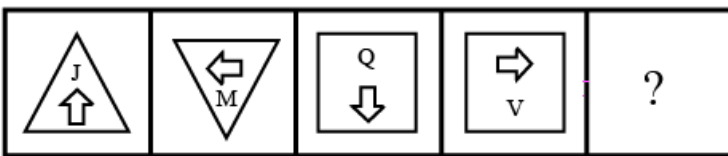
- A 36
- B 27
- C 30
- D 29

Answer: C

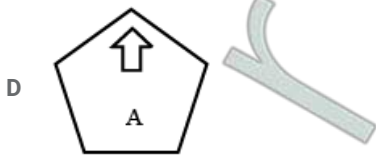
### General Science Notes for SSC CGL

Question 20

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



- A
- B
- C



Answer: B

Question 21

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

$$12 + 81 - 27 \times 9 \div 3 = 36$$

A  $-$  and  $\div$

B  $\div$  and  $\times$

C  $\times$  and  $-$

D  $+$  and  $\times$

Answer: A

Explanation:

$$12 + 81 - 27 \times 9 \div 3 = 36$$

From the option A,

On changing the sign,

$$12 + 81 \div 27 \times 9 - 3 = 36$$

$$12 + 27 - 3 = 36$$

$$36 = 36$$

$\therefore$  The correct answer is option A.

Question 22

In a certain code language, 'DKQX' is written as 'WPJC'. How will 'AFKP' be written as in that language?

A ZTOK

B ZUQI

C ZUPK

D ZVQL

Answer: C

Explanation:

$$D = (27 - 4 = 23) = W$$

$$K = (27 - 11 = 16) = P$$

$$Q = (27 - 17 = 10) = J$$

$$X = (27 - 24 = 3) = C$$

Similarly,

$$A = (27 - 1 = 26) = Z$$

$$F = (27 - 6 = 21) = U$$

$$K = (27 - 11 = 16) = P$$

$$P = (27 - 16 = 11) = K$$

'AFKP' is written as 'ZUPK'.

$\therefore$  The correct answer is option C.

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**Question 23**

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

23	5	110
56	9	121
49	3	?

- A 111
- B 113
- C 95
- D 77

**Answer: D**

**Question 24**

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

62, 66, 74, 90, ?

- A 106
- B 120
- C 116
- D 122

**Answer: D**

**Explanation:**

$$62 + 4 \times 1 = 62 + 4 = 66$$

$$66 + 4 \times 2 = 66 + 8 = 74$$

$$74 + 8 \times 2 = 74 + 16 = 90$$

$$90 + 16 \times 2 = 90 + 32 = 122$$

∴ The correct answer is option D.

**Question 25**

Arrange the following words in a logical and meaningful order.

1. Quadrillion
2. Quintillion
3. Million
4. Octillion
5. Trillion

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

**Answer: D**

**Explanation:**

Arrangement of the words,

Million, Trillion, Quadrillion, Quintillion, Octillion  
∴ The correct answer is option D.

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### General Awareness

#### Instructions

For the following questions answer them individually

#### Question 26

Name the Indian wrestler who has been named the Junior Freestyle Wrestler of the year (2019) by United World Wrestling (UWW)

- A Kamareddy
- B Deepak Punia
- C B.P. Raju
- D Amita Bagchi

Answer: B

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#### Question 27

Which International organisation released the 'World Energy Outlook 2019' Report?

- A UNESCO
- B United Nations
- C World Trade Organisation
- D International Energy Agency

Answer: D

#### Question 28

The Supreme Court has declared access to the internet a fundamental right under Article \_\_\_\_\_ of the Indian Constitution

- A 21
- B 14
- C 17
- D 19

Answer: D

#### Question 29

Mehrunnisa who was known as Nur Jahan was the wife of .....

- A Aurangzeb
- B Shah Jahan

C Jahangir

D Akbar

**Answer: C**

**Explanation:**

Nur Jahan was the twentieth (and last) wife of the Mughal emperor Jahangir.

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**Question 30**

Alyssa Healy who created a world record by becoming the highest scorer in women's T20I, belongs to \_\_\_\_\_.

A India

B Canada

C Japan

D Australia

**Answer: D**

**Question 31**

If the inflation in an economy is rising steadily, the Central Bank might \_\_\_\_\_.

A decrease the repo rate

B decrease the reverse repo rate

C increase the repo rate

D keep the repo rate unchanged

**Answer: C**

**Question 32**

Merchant discount rate refers to \_\_\_\_\_

A the total discount a bank offers to the merchant for promoting online transactions

B the total discount a merchant offers on online transactions

C the rate charged to a merchant for payment processing services on debit and credit card transactions

D only taxes that a digital payment entails

**Answer: C**

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**Question 33**

Which Indian journalist was honoured with India's Most Powerful Woman in Media Award during the prestigious Confluence Excellence Award ceremony held in the British parliament on 27 September 2019?

- A Sunetra Chaudhary
- B Anubha Bhonsle
- C Kalli Puri
- D Sona Choudhary

**Answer: C**

**Question 34**

**In which year did D.C. Sircar publish Indian Epigraphy and Indian Epigraphical Glossary?**

- A 1965-66
- B 1967-68
- C 1966-67
- D 1964-65

**Answer: A**

**Question 35**

**To which of the following Indian states does Mardani Khel, one of the famous martial art forms in India belong?**

- A Uttar Pradesh
- B Madhya Pradesh
- C Maharashtra
- D Rajasthan

**Answer: C**

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**Question 36**

**Which of the following diseases is NOT transmitted from one person to another?**

- A Syphilis
- B Hepatitis B
- C AIDS
- D Cirrhosis

**Answer: D**

**Question 37**

**When did the Vikrama Era begin?**

- A 47 BC
- B 55 BC

C 57 BC

D 50 BC

Answer: C

**Question 38**

Who is the first General of the Indian Army, whose retirement day is celebrated as the 'Armed Forces Veterans Day' every year?

A General K.S. Thimayya

B General S.M. Srinagesh

C General K. M. Cariappa

D General Maharaj Rajendra Sinhji

Answer: C

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**Question 39**

The SDG India index is developed by .....

A Ministry of Environmental, Forests and Climate Change

B Ministry of Home Affairs

C NITI Aayog

D World Bank

Answer: C

**Question 40**

Which of the following is the first South Asian country to call match-fixing a crime?

A India

B Sri Lanka

C Nepal

D Pakistan

Answer: B

**Question 41**

Who performs the task of capturing oxygen in the blood?

A White blood cells

B Red blood cells

C Chlorophyll

D Haemoglobin

Answer: D



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### Question 42

On which river and in which state is the Jayakwadi dam situated?

- A Godavari river - Maharashtra
- B Banas river - Rajasthan
- C Periyar river - Kerala
- D Ravi river - Punjab

Answer: A

### Question 43

Which leader gave us the C R Formula?

- A C. R. Das
- B C. Rajagopalachari
- C Tilak
- D Mahatma Gandhi

Answer: B

### Question 44

Name the only metal that is antibacterial.

- A Iron
- B Sodium
- C Aluminium
- D Copper

Answer: D

## SSC CGL Free Mock Test

### Question 45

Madhavpur Mela takes place in .....

- A Maharashtra
- B Madhya Pradesh
- C Uttar Pradesh
- D Gujarat

Answer: D

**Question 46**

Which of the following is a natural flame retardant?

- A Flowers
- B Skin
- C DNA
- D RNA

**Answer: C**

**Question 47**

In the sequence of planets in the Solar system, which planet comes in between Mercury and Earth?

- A Mars
- B Venus
- C Jupiter
- D Uranus

**Answer: B**

## SSC CGL Previous Papers (DOWNLOAD PDF)

**Question 48**

Which of the following gases is consistently seen to be most abundant in a volcanic eruption?

- A Sulphur Dioxide
- B Carbon Dioxide
- C Water vapour
- D Hydrogen Sulphide

**Answer: C**

**Question 49**

Which of the following is the primary sex organ in females?

- A Uterus
- B Fallopian tube
- C Ovary
- D Vagina

**Answer: C**

**Question 50**

UN Women propose to partner with \_\_\_\_\_ gender park with an aim to secure gender parity in South Asia

- A Punjab's
- B Haryana's
- C Rajasthan's
- D Kerala's

Answer: D

## SSC CGL Tier-2 Previous Papers PDF

### Quantitative Aptitude

#### Instructions

For the following questions answer them individually

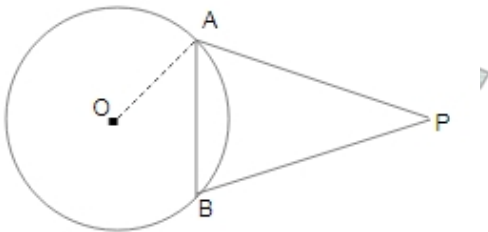
#### Question 51

Two tangents PA and PB are drawn to a circle with centre O from an external point P. If  $\angle OAB = 30^\circ$ , then  $\angle APB$  is:

- A  $120^\circ$
- B  $30^\circ$
- C  $15^\circ$
- D  $60^\circ$

Answer: D

#### Explanation:



PA & PB are the tangents to a circle, with Centre O from a point P outside it.

We know that the tangents to a circle from an external point are equal in length so PA = PB.

PA = PB

$$\angle PBA = \angle PAB$$

[Angles opposite to the equal sides of a triangle are equal.]

$$\angle APB + \angle PBA + \angle PAB = 180^\circ$$

[Sum of the angles of a triangle is  $180^\circ$ ]

$$x^\circ + \angle PAB + \angle PAB = 180^\circ$$

$$[\angle PBA = \angle PAB]$$

$$x^\circ + 2\angle PAB = 180^\circ$$

$$\angle PAB = \frac{1}{2}(180^\circ - x^\circ)$$

$$\angle PAB = 90^\circ - \frac{x^\circ}{2}$$

$$\angle OAB + \angle PAB = 90^\circ$$

$$\angle OAB = 90^\circ - \angle PAB$$

$$\angle OAB = 90^\circ - (90^\circ - \frac{x^\circ}{2})$$

$$\angle OAB = 90^\circ - 90^\circ + \frac{x^\circ}{2}$$

$$\angle OAB = \frac{x^\circ}{2}$$

$$\begin{aligned}\angle OAB &= \angle APB / 2 \\ \angle OAB &= 1/2 \angle APB \\ \angle APB &= 2 \angle OAB \\ \angle APB &= 2 \times 30^\circ\end{aligned}$$

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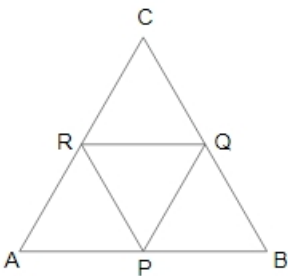
**Question 52**

ABC is an equilateral triangle. P, Q and R are the midpoints of sides AB, BC and CA, respectively. If the length of the side of the triangle ABC is 8 cm, then the area of  $\triangle PQR$  is:

- A  $\frac{\sqrt{3}}{3} \text{ cm}^2$
- B  $\frac{\sqrt{3}}{4} \text{ cm}^2$
- C  $4\sqrt{3} \text{ cm}^2$
- D  $8\sqrt{3} \text{ cm}^2$

**Answer: C**

**Explanation:**



In the  $\triangle ABC$ , point P, Q, R are mid points so,

Sides of the  $\triangle PQR = 8/2 = 4 \text{ cm}$

$$s = \frac{\text{perimeter of } \triangle PQR}{2} = \frac{4 + 4 + 4}{2} = 6 \text{ cm}$$

Area of  $\triangle PQR$  by Heron's formula,

$$\begin{aligned}&= \sqrt{s(s-a)(s-b)(s-c)} \\ &= \sqrt{6(6-4)(6-4)(6-4)} \\ &= \sqrt{6(2)(2)(2)} \\ &= 4\sqrt{3} \text{ cm}^2\end{aligned}$$

**Question 53**

**Solve the following.**

$$\frac{\sin 40^\circ}{\cos 50^\circ} + \frac{\operatorname{cosec} 50^\circ}{\sec 40^\circ} - 4 \cos 50^\circ \operatorname{cosec} 40^\circ$$

- A 2
- B -2
- C -1
- D 1

**Answer: B**

**Explanation:**

$$\frac{\sin 40^\circ}{\cos 50^\circ} + \frac{\operatorname{cosec} 50^\circ}{\sec 40^\circ} - 4 \cos 50^\circ \operatorname{cosec} 40^\circ$$
$$= \frac{\sin 40^\circ}{\cos(90^\circ - 40^\circ)} + \frac{\operatorname{cosec}(90^\circ - 40^\circ)}{\sec 40^\circ} - 4 \cos(90^\circ - 40^\circ) \operatorname{cosec} 40^\circ$$

$$= \frac{\sin 40^\circ}{\sin 40^\circ} + \frac{\sec 40^\circ}{\sec 40^\circ} - 4 \sin 40^\circ \operatorname{cosec} 40^\circ$$

$$= 1 + 1 - 4 = -2$$

**Question 54**

The average of the marks of 30 boys is 88, and when the top two scores were excluded, the average marks reduced to 87.5. If the top two scores differ by 2, then the highest mark is:

A 92

B 96

C 94

D 90

**Answer: B**

**Explanation:**

Total marks of 30 boys =  $88 \times 30 = 2640$

( $\because$  Average = sum of all term/number of terms)

when the top two scores were excluded, the average marks reduced to 87.5

Total marks of 28 boys =  $87.5 \times 28 = 2450$

Sum of the top two score =  $2640 - 2450 = 190$  ---(1)

difference of two score = 2

Let the top score be  $x$  so 2nd top score =  $x - 2$

From eq(1),

$$x + x - 2 = 190$$

$$x = 192/2 = 96$$

## SSC CGL Important Questions PDF

**Question 55**

If  $x \cos A - y \sin A = 1$  and  $x \sin A + y \cos A = 4$ , then the value of  $17x^2 + 17y^2$  is:

A 0

B 7

C 49

D 289

**Answer: D**

**Explanation:**

$$x \cos A - y \sin A = 1$$

Take the square of both sides,

$$(x \cos A - y \sin A)^2 = 1$$

$$(x \cos A)^2 - 2xy \sin A \cos A + (y \sin A)^2 = 1 \text{ --(1)}$$

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

$$x \sin A + y \cos A = 4$$

Take the square of both sides,

$$(x \sin A + y \cos A)^2 = 16$$

$$(x \sin A)^2 + 2xy \sin A \cos A + (y \cos A)^2 = 16 \text{ --(2)}$$

Addition of eq(1) and eq(2),

$$(x \cos A)^2 + (x \sin A)^2 + (y \sin A)^2 + (y \cos A)^2 = 17$$

$$x^2 + y^2 = 17$$

$$17x^2 + 17y^2 = 17 \times 17$$

$$17x^2 + 17y^2 = 289$$

#### Question 56

A circular disc of area  $0.64\pi m^2$  rolls down a length of 1.408 km. The number of revolutions it makes is:

(Taken  $\pi = \frac{22}{7}$ ).

A 280

B 360

C 140

D 180

Answer: A

Explanation:

$$\text{Area} = \pi r^2$$

$$\pi r^2 = 0.64\pi m^2$$

$$r = 0.8 \text{ m}$$

$$\text{Circumference of disc} = 2\pi r = 2 \times \frac{22}{7} \times 0.8 = 5.02$$

$$\text{Length} = 1.408 \text{ km} = 1408 \text{ m}$$

$$\text{The number of revolutions} = 1408/5.02 = 280$$

#### Question 57

An article was sold at a gain of 18%. If it had been sold for ₹ 49 more, then the gain would have been 25%. The cost price of the article is:

A ₹ 700

B ₹ 570

C ₹ 650

D ₹ 890

Answer: A

Explanation:

Let the cost price of an article be 100%.

$$\text{Difference in gain} = (25 - 18)\% = 7\%$$

$$49 = 7\%$$

$$\text{Cost price}(100\%) = \frac{49}{7} \times 100 = ₹ 700$$

∴ The cost price of the article is ₹ 700.

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### Question 58

If  $3^a = 27^b = 81^c$  and  $abc = 144$ , then the value of  $12\left(\frac{1}{a} + \frac{1}{2b} + \frac{1}{5c}\right)$  is:

A  $\frac{18}{120}$

B  $\frac{18}{10}$

C  $\frac{33}{10}$

D  $\frac{17}{120}$

Answer: C

Explanation:

$$3^a = 27^b = 81^c$$

$$3^a = 3^{3b} = 3^{4c}$$

$$a = 3b = 4c$$

$$abc = 144$$

$$4c \times \frac{4c}{3} \times c = 144$$

$$c^3 = 27$$

$$c = 3$$

$$12\left(\frac{1}{a} + \frac{1}{2b} + \frac{1}{5c}\right)$$

$$12\left(\frac{1}{4c} + \frac{1}{8c/3} + \frac{1}{5c}\right)$$

$$= 12 \frac{33}{40c}$$

$$= 12 \times \frac{33}{40 \times 3} = \frac{33}{10}$$

### Question 59

If  $a + b + c = 9$  and  $ab + bc + ca = -22$ , then the value of  $a^3 + b^3 + c^3 - 3abc$  is:

A 783

B 1323

C 1571

D 487

Answer: B

Explanation:

$$a + b + c = 9$$

$$ab + bc + ca = -22$$

We need to find the value of  $a^3 + b^3 + c^3 - 3abc$

We know,

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

Now we need to find the value of  $a^2 + b^2 + c^2$

We also know,

$$(a + b + c)^2 = a^2 + b^2 + c^2 + 2(ab + bc + ca)$$

Putting the value of  $a + b + c = 9$  and  $ab + bc + ca = -22$

$$(9)^2 = a^2 + b^2 + c^2 + 2(-22)$$

$$81 = a^2 + b^2 + c^2 - 44$$

$$a^2 + b^2 + c^2 = 81 + 44$$

$$a^2 + b^2 + c^2 = 125$$

Now,

Substituting value in the formula for  $a^3 + b^3 + c^3 - 3abc$

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

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

$$a^3 + b^3 + c^3 - 3abc = (9)(125 - (-22))$$

$$a^3 + b^3 + c^3 - 3abc = (9)(147)$$

$$a^3 + b^3 + c^3 - 3abc = 1323$$

#### Question 60

A shopkeeper marks the price of an article in such a way that after allowing a discount of 22%, he gets a gain of 11%. If the marked price is Rs.888, then the cost price of the article is:

A ₹ 624

B ₹ 782

C ₹ 550

D ₹ 895

**Answer: A**

#### Explanation:

Marked price = 888

Discount = 22%

Selling price =  $888 \times \frac{78}{100} = 692.64$

Gain = 11% so selling price = 111% of cost price

$692.64 = 111\%$  of cost price

Cost price =  $692.64 \times \frac{100}{111} = ₹ 624$

**General Science Notes for SSC CGL**



Question 61

In the following table, the production of various crops (in tonnes) is given from 2015 to 2019. Study the table and answer the questions that follow.

Year	Rice	Wheat	Sugarcane	Barley	Maize
2015	415	2500	1000	975	490
2016	520	4218	1120	825	520
2017	585	3482	1250	700	610
2018	625	4500	1325	625	725
2019	600	3300	1450	775	840

The percentage growth of maize in the year 2019 over the year 2015 is:  
(correct to two decimal places)

- A 65.12%
- B 71.43%
- C 77.77%
- D 60.28%

Answer: B

Explanation:

Production of maize in the year 2019 = 840

Production of maize in the year 2015 = 490

The percentage growth of maize in the year 2019 over the year 2015 =  $\frac{840 - 490}{490} \times 100 = \frac{350}{490} \times 100 = 71.43\%$

Question 62

If the area of an equilateral triangle is  $36\sqrt{3}cm^2$ , then the perimeter of the triangle is:

- A  $36\sqrt{3}$  cm
- B 36 cm
- C  $18\sqrt{3}$  cm
- D 12 cm

Answer: B

Explanation:

Area of an equilateral triangle =  $36\sqrt{3}cm^2$

$$\frac{\sqrt{3}a^2}{4} = 36\sqrt{3}cm^2$$

a = 12 cm

Perimeter of the triangle =  $3 \times a = 3 \times 12 = 36$  cm

Question 63

If the value of  $(a + b - 2)^2 + (b + c - 5)^2 + (c + a - 5)^2 = 0$ , then the value of  $\sqrt{(b + c)^a + (c + a)^b - 1}$  is:

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

Answer: C

Explanation:

$$(a + b - 2)^2 + (b + c - 5)^2 + (c + a - 5)^2 = 0$$

LHS:

$$((a+b-2)^2 + (b+c-5)^2 + (c+a-5)^2)$$

$$= ((0)^2 + (0)^2 + (0)^2)$$

$$= 0$$

=RHS

$$a + b - 2 = 0$$

$$a + b = 2 \text{ ---(1)}$$

$$b + c - 5 = 0$$

$$b + c = 5 \text{ ---(2)}$$

$$c + a - 5 = 0$$

$$a + c = 5 \text{ ---(3)}$$

$$\text{Eq(1) + (2) + (3),}$$

$$2(a + b + c) = 2 + 5 + 5$$

$$a + b + c = 6$$

put the value from eq(1),

$$2 + c = 6$$

$$c = 4$$

From eq(2),

$$b + 4 = 5$$

$$b = 1$$

From eq(1),

$$a + 1 = 2$$

$$a = 1$$

$$\sqrt{(b + c)^a + (c + a)^b - 1}$$

$$= \sqrt{(5)^a + (5)^b - 1}$$

$$= \sqrt{(5)^1 + (5)^1 - 1}$$

$$= \sqrt{9} = 3$$

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Question 64

If  $(2 \sin A + \operatorname{cosec} A) = 2\sqrt{2}$ ,  $0^\circ < A < 90^\circ$  then the value of  $2(\sin^4 A + \cos^4 A)$  is:

A 2

B 1

C 4

D 0

Answer: B

Explanation:

$$(2 \sin A + \operatorname{cosec} A) = 2\sqrt{2}$$

To find the value A, we satisfy the above equation so put the value of  $A = 45^\circ$

$$(2 \sin 45^\circ + \operatorname{cosec} 45^\circ) = 2\sqrt{2}$$

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

$$2\sqrt{2} = 2\sqrt{2}$$

$$2(\sin^4 A + \cos^4 A)$$

$$= 2(\sin^4 45^\circ + \cos^4 45^\circ)$$

$$= 2\left(\left(\frac{1}{\sqrt{2}}\right)^4 + \left(\frac{1}{\sqrt{2}}\right)^4\right)$$

$$= 2\left(\frac{1}{4} + \frac{1}{4}\right) = 2\left(\frac{1}{2}\right) = 1$$

#### Question 65

In the following table, the production of various crops (in tonnes) is given from 2015 to 2019. Study the table and answer the questions that follow.

Year	Rice	Wheat	Sugarcane	Barley	Maize
2015	415	2500	1000	975	490
2016	520	4218	1120	825	520
2017	585	3482	1250	700	610
2018	625	4500	1325	625	725
2019	600	3300	1450	775	840

The average production of wheat(in tonnes) in the period given in the table is:

- A 3600
- B 3482
- C 3300
- D 4218

Answer: A

#### Explanation:

Total production of wheat(in tonnes) = 2500 + 4218 + 3482 + 4500 + 3300 = 18000

Average = sum of all terms/number of terms

Average production of wheat(in tonnes) = 18000/5 = 3600

#### Question 66

A, B and C can individually complete a task in 24 days, 20 days and 18 days, respectively. B and C start the task, and they work for 6 days and leave. The number of days required by A alone to finish the remaining task, is:

- A  $15\frac{2}{3}$  days
- B  $12\frac{1}{2}$  days
- C  $8\frac{4}{5}$  days
- D 10 days

Answer: C

#### Explanation:

Let the total task be 360.

(∵ LCM of 24, 20 and 18 is 360.)

Efficiency of A =  $360/24 = 15$

Efficiency of B =  $360/20 = 18$

Efficiency of C =  $360/18 = 20$

Task done by B and C in 6 days = total efficiency  $\times$  time =  $(18 + 20) \times 6 = 228$

Remaining Task =  $360 - 228 = 132$

Time taken to complete remaining task by A = work/efficiency =  $132/15 = 8 \frac{12}{15} = 8 \frac{4}{5}$

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### Question 67

What will be the difference in compound interest on a sum of ₹ 7,800 at 8% for 1 year, when the interest is paid yearly and half yearly?

A ₹ 29.18

B ₹ 12.48

C ₹ 24.72

D ₹ 19.46

Answer: B

### Explanation:

Principal(p) = 7800

Rate of interest(r) = 8%

time(t) = 1 year

Interest when paid yearly =  $p(1 + r/100)^t - p = 7800 \times (1 + 8/100) - 7800$

=  $7800 \times 108/100 - 7800 = 8424 - 7800 = 624$

Interest when paid yearly,

t =  $1 \times 2 = 2$

r =  $8/2 = 4\%$

Interest =  $7800 \times (1 + 4/100)^2 - 7800 = 7800 \times (104/100) \times (104/100) - 7800 = 8436.48 - 7800 = 636.48$

Difference =  $636.48 - 624 = ₹ 12.48$

### Question 68

In the following table, the production of various crops(in tonnes) is given from 2015 to 2019. Study the table and answer the questions that follow.

Year	Rice	Wheat	Sugarcane	Barley	Maize
2015	415	2500	1000	975	490
2016	520	4218	1120	825	520
2017	585	3482	1250	700	610
2018	625	4500	1325	625	725
2019	600	3300	1450	775	840

The difference (in tonnes) between the average production of barley and average production of rice is:

A 231

B 780

C 549

D 471

Answer: A

**Explanation:**

Total production of barley =  $975 + 825 + 700 + 625 + 775 = 3900$

Average = sum of the terms/total number of terms

Average production of barley =  $3900/5 = 780$

Total production of rice =  $415 + 520 + 585 + 625 + 600 = 2745$

Average production of rice =  $2745/5 = 549$

The difference (in tonnes) between the average production of barley and average production of rice =  $780 - 549 = 231$

**Question 69**

If '+' means '-', '-' means '+', 'x' means '÷' and '÷' means 'x', then the value of  $\frac{[(30 \times 5) + (84 \times 6)] \div 5}{[\frac{2}{3} \div 18] - [4 \div 2]}$  is:

A -2

B 2

C -1

D 1

Answer: A

**Explanation:**

$$\frac{[(30 \times 5) + (84 \times 6)] \div 5}{[\frac{2}{3} \div 18] - [4 \div 2]}$$

On change the sign,

$$= \frac{[(30 \div 5) - (84 \div 6)] \times 5}{[\frac{2}{3} \times 18] + [4 \times 2]}$$

$$= \frac{[6 - 14] \times 5}{12 + 8} = \frac{-40}{20} = -2$$

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**Question 70**

A student takes 1.25 hours to travel from home to school at a speed of 4 km/h. By what percentage should he increase his speed to reduce the time by 25% to cover the same distance from school to home?

A  $33\frac{1}{3}$  %

B 50 %

C 45 %

D 25 %

Answer: A

**Explanation:**

Distance = time  $\times$  speed =  $1.25 \times 4 = 5$  km

Time reduce by 25% so time =  $1.25 \times \frac{75}{100} = 0.9375$

Speed = distance/time =  $5/0.9375 = 5.33$

Increment in speed =  $5.33 - 4 = 1.33$

Percentage increment =  $\frac{1.33}{4} \times 100 = 33\frac{1}{3}$

**Question 71**

If a sum of ₹1,180 is to be divided among A, B and C, such that 2 times A's share, 5 times B's share and 7 times C's share, are equal, then A's share is:

- A ₹ 500
- B ₹ 750
- C ₹ 650
- D ₹ 700

**Answer:** D

**Explanation:**

According to the question,

$$2 \times A = 5 \times B = 7 \times C$$

Ratio of the share of A, B and C =  $\frac{1}{2} : \frac{1}{5} : \frac{1}{7} = 35 : 14 : 10$

$$A's \text{ share} = \frac{35}{59} \times 1180 = ₹ 700$$

**Question 72**

If the number  $687x29$  is divisible by 9, then the value of  $2x$  is:

- A 8
- B 3
- C 2
- D 4

**Answer:** A

**Explanation:**

Divisibility rule by 9, if the sum of all number is divisible by 9 then number is divisible by 9.

$$\text{Sum of number} = 6 + 8 + 7 + x + 2 + 9 = 32 + x$$

putting the value of  $x = 4$

$32 + 4 = 36$  divisible by 9 so,

$$2x = 2 \times 4 = 8$$

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**Question 73**

The population of a city increased by 30% in the first year and decreased by 15% in the next year. If the present population is 11,050 then the population 2 years ago was:

- A 10,000
- B 99,500
- C 99,000

D 10,050

**Answer: A**

**Explanation:**

Let 2 years ago the population of a city be  $x$ .

Population after 1 year =  $x \times \frac{130}{100} = 1.3x$

Population after 2 year =  $1.3x \times \frac{85}{100} = 1.105x$

$11050 = 1.105x$

$x = 10000$

The population 2 years ago was 10000.

**Question 74**

In the following table, the production of various crops(in tonnes) is given from 2015 to 2019. Study the table and answer the questions that follow.

Year	Rice	Wheat	Sugarcane	Barley	Maize
2015	415	2500	1000	975	490
2016	520	4218	1120	825	520
2017	585	3482	1250	700	610
2018	625	4500	1325	625	725
2019	600	3300	1450	775	840

The highest growth of sugarcane production over its previous year is recorded in the year:

A 2018

B 2016

C 2019

D 2017

**Answer: D**

**Explanation:**

Growth in 2016 =  $1120 - 1000 = 120$

Growth in 2017 =  $1250 - 1120 = 130$

Growth in 2018 =  $1325 - 1250 = 75$

Growth in 2019 =  $1450 - 1325 = 125$

The highest growth of sugarcane production over its previous year is recorded in the year 2017.

**Question 75**

A metallic sphere of diameter 40 cm is melted into smaller spheres of radius 0.5 cm. How many such small balls can be made?

A 32,000

B 3,200

C 64,000

D 6,400

**Answer: C**

**Explanation:**

Volume of sphere =  $\frac{4}{3}\pi r^3$

radius of sphere = diameter/2 = 40/2 = 20 cm

volume of sphere = total volume of all smaller sphere

$$\frac{4}{3}\pi 20^3 = n \times \frac{4}{3}\pi (0.5)^3$$

$$8000 = 0.125n$$

$$n = 8000/0.125 = 64000$$

∴ 64000 small balls can be made.

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### English Comprehension

#### Instructions

For the following questions answer them individually

#### Question 76

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

**Persist**

- A Insist
- B Cease
- C Remain
- D Continue

**Answer: B**

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#### Question 77

Select the correct indirect form of the given sentence.

"What a rare flower!" she said.

- A She exclaimed what a rare flower it is.
- B She asked if it was a rare flower
- C She told that what a rare flower it was.
- D She exclaimed that it was a very rare flower.

**Answer: D**

#### Question 78

Select the option that can be used as a one-word substitute for the given group of words/phrase.

Having two opposing feelings at the same time

- A Equivalent
- B Coinciding
- C Ambivalent
- D Contemporary

**Answer: C**



**Question 79**

Select the correct passive form of the given sentence.  
The farmer is ploughing the fields

- A The fields were ploughed by the farmer.
- B The fields are ploughed by the farmer.
- C The fields have been ploughed by the farmer
- D The fields are being ploughed by the farmer

**Answer:** D

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**Question 80**

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.

We came back because we had ran out of money.

- A we have ran
- B we had run
- C No improvement
- D we run

**Answer:** B

**Question 81**

Identify the segment in the sentence which contains the grammatical error. If there is no error, select 'No error'

Those who are late they will not be allowed inside the classroom.

- A they will not be allowed
- B No error
- C Those who are late
- D inside the classroom

**Answer:** A

**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.

Atlas was made to hold the sky up on his shoulders as a punishment. Once, Hercules (1)\_\_\_\_\_ to hold it for Atlas while the latter went looking (2)\_\_\_\_\_ golden apples. When Atlas returned, he saw Hercules (3)\_\_\_\_\_ hard to hold the sky. The weight of the sky (4)\_\_\_\_\_ Hercules sweat and groan. Now Atlas did not want to (5)\_\_\_\_\_ a job as arduous as that!

**Question 82**

Select the most appropriate option to fill in blank 1.

- A offered
- B ordered
- C afforded
- D extended

Answer: A

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Question 83

Select the most appropriate option to fill in blank 2

- A at
- B for
- C on
- D after

Answer: B

Question 84

Select the most appropriate option to fill in blank 3

- A tackling
- B coping
- C struggling
- D seeking

Answer: C

Question 85

Select the most appropriate option to fill in blank 4

- A were making
- B was making
- C has made
- D make

Answer: B

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Question 86

Select the most appropriate option to fill in blank 5.

- A take out
- B take away
- C take in
- D take back

**Answer: D**

**Instructions**

For the following questions answer them individually

**Question 87**

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

**Glee**

- A Joy
- B Bliss
- C Woe
- D Fun

**Answer: C**

**Question 88**

Identify the segment in the sentence which contains the grammatical error. If there is no error, select 'No error'

Everyone except she have travelled by air

- A travelled by air
- B No error
- C Everyone except
- D she have

**Answer: D**

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**Question 89**

Select the most appropriate option to fill in the blank.

The roof of the old building \_\_\_\_\_ during the storm.

- A destroyed
- B scratched
- C demolished
- D collapsed

**Answer: D**

**Question 90**

Select the most appropriate meaning of the given idiom.

**Chicken-hearted**

- A Generous
- B Cowardly
- C Miserly
- D Selfish

**Answer: B**

**Question 91**

Select the most appropriate synonym of the given word.

**Preferred**

- A Adored
- B Feared
- C Compared
- D Favoured

**Answer: D**

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**Question 92**

Select the most appropriate synonym of the given word.

**Ovation**

- A Creation
- B Preparation
- C Applause
- D Censure

**Answer: C**

**Question 93**

Select the **INCORRECTLY** spelt word.

- A Alliance
- B Acquisition
- C Acquaintence
- D Abandon

**Answer: C**

Question 94

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

- A. Much of this war had taken place along the Western Front.
- B. Both sides had dug in deep and each lost many men over little ground.
- C. This front was a line of trenches across which the two sides faced each other.
- D. Andre Maginot had fought a war with the French against the Germans.

- A DACB
- B DBCA
- C ACDB
- D BCDA

Answer: A

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Question 95

Select the most appropriate option to fill in the blank.

She \_\_\_\_\_ how the magician had performed the rope trick

- A bewildered
- B wondered
- C suspected
- D puzzled

Answer: B

Question 96

Select the wrongly spelt word.

- A Fierce
- B Sieze
- C Grief
- D Piece

Answer: B

Question 97

Select the most appropriate meaning of the given idiom.

By and by

- A Gradually
- B By any means
- C Suddenly
- D On the whole

Answer: A

## SSC CGL Important Questions PDF

### Question 98

Select the option that can be used as a one-word substitute for the given group of words/phrase

A group of ships

- A squad
- B colony
- C swarm
- D fleet

Answer: D

### Question 99

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.

When it started raining, I ran to the nearer house for shelter

- A the near house
- B a near house
- C the nearest house
- D No improvement

Answer: C

### Question 100

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

- A. The mountain range was covered with snow.
- B. Napoleon had to cross the Alps in winter.
- C. Napoleon replied that the word 'impossible' did not exist for him.
- D. So, someone told Napoleon that the task was impossible.

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

Answer: A

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