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# SSC GD Exam

Previous Paper

Simplifying  
Government Exams

 SSC CHSL	 IAS EXAM	 RRB NTPC	 NTSE	 CDS
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# Reasoning

## Instructions

For the following questions answer them individually

### Question 1

The statements below are followed by two conclusions labeled I and II. Assuming that the information in the statements is true, even if it appears at variance with generally established facts, decide which conclusion(s) logically and definitely follow(s) from the information given in the statements.

Statements:

- 1) Some stores are rooms.
- 2) Some rooms are posters.

Conclusion:

- I. Some rooms are stores.
- II. Some posters are rooms.

- A Only conclusion I follows.
- B Both conclusions follow.
- C Only conclusion II follows.
- D Neither conclusion I nor conclusion II follows.

Answer: B

### Question 2

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

Initial : Final :: Mourn : ?

- A Recall
- B Recap
- C Murmur
- D Rejoice

Answer: D

**Explanation:**

The given pairs are antonyms, final is opposite of initial, similarly opposite of mourn is **rejoice**.

=> Ans - (D)

### Question 3

Select the option that will correctly replace the question mark (?) in the series.

0, 8, 24, 48, ?

- A 81
- B 87
- C 89
- D 80

Answer: D

**Explanation:**

Multiples of 8 are added.

$$0 + 8 = 8$$

$$8 + 16 = 24$$

$$24 + 24 = 48$$

$$48 + 32 = \mathbf{80}$$

=> Ans - (D)

**Question 4**

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

12 : 180 :: 14 : ?

A 144

B 221

C 169

D 238

Answer: D

**Explanation:**

Expression = 12 : 180 :: 14 : ?

The pattern followed is =  $x : x(x + 3)$

Eg :-  $12 \times (12 + 3) = 180$

Similarly,  $14 \times (14 + 3) = 14 \times 17 = 238$

=> Ans - (D)

**Question 5**

Choose the option that most closely resembles the mirror image of the given word if the mirror is placed at the right side.

HOMAGE

A HОMAGE

B HOWAGE

C HОMAGE

D HОMAGE

Answer: A

### Question 6

The statements below are followed by two conclusions labeled I and II. Assuming that the information in the statements is true, even if it appears at variance with generally established facts, decide which conclusion(s) logically and definitely follow(s) from the information given in the statements.

Statements:

- 1) All customers are clients.
- 2) All clients are medicines.

Conclusion:

- I. Some medicines are customers.
- II. Some medicines are clients.

- A** Either conclusion I or conclusion II follows.
- B** Both conclusions follow.
- C** Only conclusion II follows.
- D** Only conclusion I follows.

**Answer: B**

### Question 7

In certain code, VIROLOGY is written as LOGYVIRO. How will SEMANTIC be written in that code?

- A** NTICSEMA
- B** CITNAMES
- C** NTJCSEMA
- D** NTICSFMA

**Answer: A**

### Question 8

There is only one runway which will be used by seven flights one by one. P and Q will use the runway neither first nor last. S will use it second after R. M will use it second before O. N will use it after O and before R. Q will use it just before S. Who will use the runway in the middle?

- A** O
- B** N
- C** P
- D** Q

**Answer: B**

### Question 9

Choose the odd one out of the given options.

- A** Silicon
- B** Magnesium

**C** Tungsten

**D** Aurum

**Answer:** A

#### Question 10

Choose the odd one out of the given options.

**A** RGD

**B** HIL

**C** EKM

**D** QSC

**Answer:** D

#### Question 11

Eight friends A, B, C, D, E, F, H and G are sitting around a circular table facing each other for a group discussion. A is opposite F and second to the right of E. G is between C and A. H is to the left of E. Who is sitting to the immediate left of A?

**A** Either G or D

**B** B

**C** C

**D** Either B or D

**Answer:** D

#### Question 12

Seven friends O, P, Q, R, S, T and U are watching a cricket match sitting in a stadium. P is sitting at one extreme end. T is sitting between Q and U, and is sitting to the immediate right of S and immediate left of Q. Who is sitting between U and P?

**A** R

**B** O

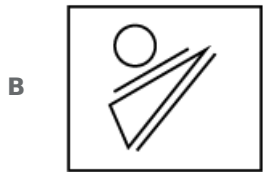
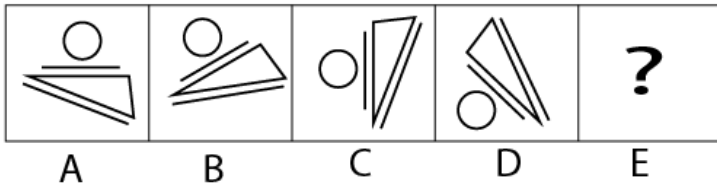
**C** S

**D** Q

**Answer:** B

**Question 13**

Choose the option that would follow next in the given figure series.



Answer: D

**Question 14**

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

AC : CI :: GH : ?

A UY

B UX

C UU

D UV

Answer: B

**Question 15**

In a certain code, OPTIMIST is written as 121. How will PESSIMIST be written in that code?

- A 129
- B 105
- C 131
- D 127

**Answer:** A

**Explanation:**

If we add the numbers represented by the English alphabets, i.e. A=1, B=2, C=3, ....., Y=25, Z=26

$$\text{OPTIMIST} \equiv 15 + 16 + 20 + 9 + 13 + 9 + 19 + 20 = 121$$

$$\Rightarrow \text{PESSIMIST} \equiv 16 + 5 + 19 + 19 + 9 + 13 + 9 + 19 + 20 = 129$$

$\Rightarrow$  Ans - (A)

**Question 16**

Select the option that will correctly replace the question mark (?) in the series.  
PRL, QPM, RNN, SLO, ?

- A TIO
- B TKP
- C TJP
- D TIP

**Answer:** C

**Explanation:**

Series : PRL, QPM, RNN, SLO, ?

The pattern followed in each letter of the terms is :

$$\text{1st letter : P (+1 letter) = Q (+1 letter) = R (+1 letter) = S (+1 letter) = T}$$

$$\text{2nd letter : R (-2 letters) = P (-2 letters) = N (-2 letters) = L (-2 letters) = J}$$

$$\text{3rd letter : L (+1 letter) = M (+1 letter) = N (+1 letter) = O (+1 letter) = P}$$

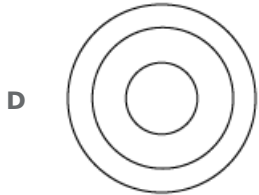
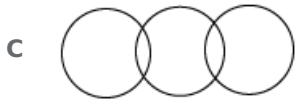
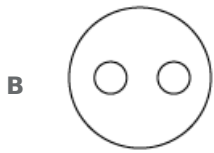
Thus, missing term : **TJP**

$\Rightarrow$  Ans - (C)

**Question 17**

Select the Venn diagram that best represents the given set of classes.  
Animals, Mammals, Deer

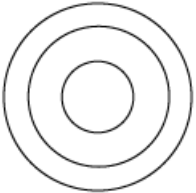




**Answer:** D

**Explanation:**

All animals comes under the category of mammals, and all deers are animals, hence the venn diagram that best describe above relationship is :



=> Ans - (D)

**Question 18**

**Choose the odd number out of the given options.**

**A** 151

**B** 163

**C** 157

**D** 161

**Answer:** D

**Explanation:**

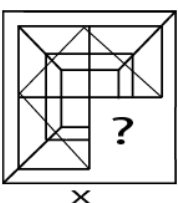
Among the given numbers, except **161**, all are prime numbers.

$$161 = 7 \times 23$$

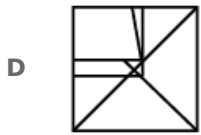
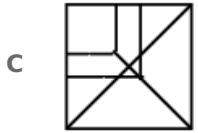
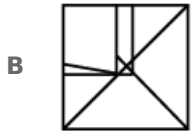
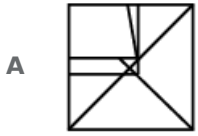
=> Ans - (D)

**Question 19**

**Select a figure from amongst the four alternatives, that when placed in the blank space (?) of figure X will complete the pattern. (Rotation is not allowed).**







Answer: C

#### Question 20

Find out the two signs to be interchanged to make the following equation correct.

$$18 + 3 \times 27 - 9 \div 3 = 78$$

A + and  $\times$

B + and  $\div$

C - and  $\div$

D + and -

Answer: A

#### Explanation:

Expression :  $18 + 3 \times 27 - 9 \div 3 = 78$

(A) : + and  $\times$

$$\text{L.H.S.} \equiv 18 \times 3 + 27 - 9 \div 3$$

$$= 54 + 27 - 3 = 78 = \text{R.H.S.}$$

=> Ans - (A)

#### Question 21

Select the option that will correctly replace the question mark (?) in the series.

12, 22, 42, 82, ?

A 172

B 182

C 152

D 162

Answer: D

**Explanation:**

The pattern followed is :

$$12 + 10 = 22$$

$$22 + 20 = 42$$

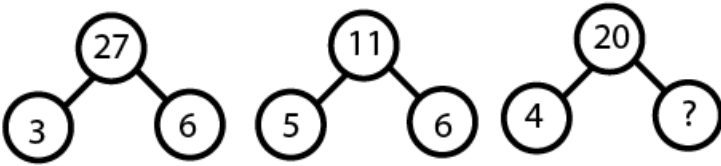
$$42 + 40 = 82$$

$$82 + 80 = \mathbf{162}$$

=> Ans - (D)

**Question 22**

Select the option that will correctly replace the question mark (?) in the given pattern.



A 6

B 24

C 36

D 8

Answer: A

**Explanation:**

The number at the top is equal to the product of sum and difference of bottom two numbers.

$$\text{Eg :- } (6 + 3) \times (6 - 3) = 9 \times 3 = 27$$

$$\text{and } (6 + 5) \times (6 - 1) = 11 \times 1 = 11$$

$$\text{Similarly, } (x + 4) \times (x - 4) = 20$$

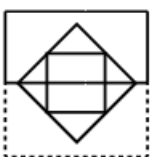
$$\Rightarrow x^2 - 16 = 20$$

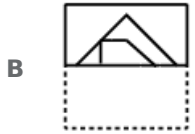
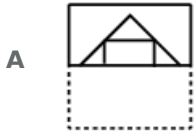
$$\Rightarrow x = \sqrt{36} = 6$$

=> Ans - (A)

**Question 23**

A square transparent sheet with a pattern is given. How will the pattern appear when the transparent sheet is folded along the dotted line?

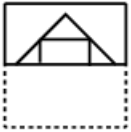




**Answer: A**

**Explanation:**

In the question figure, the horizontal line divides the figure in two symmetrical figures, thus when we fold the lower half, it will exactly cover the upper half, and hence the figure in top half will appear.



=> Ans - (A)

**Question 24**

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

**Blend : Mix :: Request : ?**

**A** Deny

**B** Noting

**C** Solicit

**D** Accept

**Answer: C**

**Explanation:**

The first two words are synonyms of each other, similarly request and solicit have similar meanings.

=> Ans - (C)

**Question 25**

Select a figure from amongst the four alternatives, that when placed in the blank space (?) of figure X will complete the pattern. (Rotation is not allowed).



A



B



C



D



**Answer:** D

**General knowledge**

**Instructions**

For the following questions answer them individually

**Question 26**

Which of the following statements about the Indus Valley Civilization is NOT true?

- A It was an urban civilisation where people lived in well planned towns
- B Animal meat was the staple food
- C It flourished around 2500 BC in the present day Pakistan and Western India
- D The houses were made of baked bricks

**Answer:** B

**Question 27**

**Dry Ice is the solid form of:**

- A** methane
- B** carbon dioxide
- C** oxygen
- D** ozone

**Answer:** B

**Question 28**

**Timur invaded India during the reign of:**

- A** Akbar
- B** Alauddin Khilji
- C** Feroz Shah Tughlaq
- D** Nasir-ud-Din Mahmud Shah Tughluq

**Answer:** D

**Question 29**

**Who wrote the book 'War and Peace'?**

- A** Viadimir Lenin
- B** Leo Tolstoy
- C** Karl Marx
- D** Anton Chekhov

**Answer:** B

**Question 30**

**India has won 8 Olympic gold medals for field hockey. When was the last time India won a gold medal for hockey in Olympics?**

- A** 1976
- B** 1984
- C** 1988
- D** 1980

**Answer:** D

**Question 31**

**Which of the following statements is NOT true about angiosperms?**

- A They have stems, leaves and roots
- B Conifers, Cycads and Ginkgo are examples of angiosperms
- C They have to undergo pollination before they can reproduce
- D The flowers carry the reproductive organs

**Answer:** B

**Question 32**

**The economic survey is usually presented ..... before the Union Budget.**

- A 1 day
- B 15 days
- C 7 days
- D 2 days

**Answer:** A

**Question 33**

**Gita Gopinath became the first woman to occupy the position of Chief Economist of:**

- A World Trade Organisation
- B UNESCO
- C World Bank
- D International Monetary Fund

**Answer:** D

**Question 34**

**The holy place of the Jains, Shravanabelagola is situated in which district of Karnataka?**

- A Shimoga District
- B Bellary District
- C Mysore District
- D Hassan District

**Answer:** D

**Question 35**

**The Government of India releases MSP of agricultural produce from time to time. What is the full form of MSP?**

- A Minimum Selling Price

- B Minimum Support Price
- C Maximum Selling Price
- D Maximum Support Price

**Answer:** B

**Question 36**

**Golconda Fort was built in the 13<sup>th</sup> century by the ..... Dynasty.**

- A Kakatiya
- B Chola
- C Periyar
- D Chalukya

**Answer:** A

**Question 37**

**In the context of climate. what is the full form of ITCZ?**

- A Indian Trough Conversation Zone
- B Inter Tropical Convergence Zone
- C Intra Temperate Control Zone
- D Islandic Tropical Climate Zone

**Answer:** B

**Question 38**

**The Indian athlete Dutee Chand is associated to which of the following sporting events?**

- A Shotput
- B Javelin
- C Jumping
- D Sprinting

**Answer:** D

**Question 39**

**A special property of acids and bases is their ability to ..... each other's properties.**

- A Crystalize
- B Neutralize

- C Amortize
- D Naturalize

**Answer:** B

#### Question 40

**According to the report published by the World Health Organization (WHO) in 2017, approximately how many people in the world do NOT have access to safe drinking water at home?**

- A 4.2 billion
- B 900 million
- C 500 million
- D 2.1 billion

**Answer:** D

#### Question 41

**'Kuchipudi' derives its roots from:**

- A Kerala
- B Andhra Pradesh
- C Puducherry
- D Tamil Nadu

**Answer:** B

#### Question 42

**Swachh Bharat Abhiyan was launched by the government of India on the birth anniversary of:**

- A Mahatma Gandhi
- B Vallabhbhai Patel
- C Jawaharlal Nehru
- D Atal Bihari Vajpayee

**Answer:** A

#### Question 43

**The Constitution of India came into force on 26 January 1950. Which act or governing document did it replace?**

- A Government of India Act, 1858
- B Government of India Act, 1935
- C Indian Councils Act, 1892



**D** Regulating Act, 1773

**Answer:** B

**Question 44**

**The parliament has powers to amend the provisions of the Constitution of India. Which article of the constitution confers this power on the parliament?**

**A** Article 1

**B** Article 256

**C** Article 55

**D** Article 368

**Answer:** D

**Question 45**

**The first major nation wide Satyagraha launched by Mahatma Gandhi was against:**

**A** Rowlatt Act

**B** Partition of Bengal

**C** Tax on Khadi products

**D** Salt tax

**Answer:** A

**Question 46**

**Which of the following is NOT true about the 'Protection of Women from Domestic Violence Act, 2005'?**

**A** Injury can be physical, emotional or economic.

**B** It also applies to violence at workplace.

**C** It applies in case of injury or harm or threat of injury or harm by the adult male member of the house hold.

**D** The term 'Domestic' includes all women who live or have lived in a shared household with the accused male member.

**Answer:** B

**Question 47**

**The host country for 2022 FIFA World Cup is:**

**A** Japan

**B** Germany

**C** France

**D** Qatar

**Answer:** D

**Question 48**

**'Slash and burn' type of farming is also known as:**

- A shifting farming
- B intensive subsistence farming
- C extensive farming
- D commercial farming

**Answer:** A

**Question 49**

**What is the monthly salary of the President of India as per 2018 Budget?**

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

**Answer:** C

**Question 50**

**Which of the following is NOT a method of soil conservation?**

- A Intercropping
- B Mulching
- C Contour Ploughing
- D Weathering

**Answer:** D

## Quant

**Instructions**

For the following questions answer them individually

**Question 51**

**A sector is cut from a circle of diameter 42 cm. If the angle of the sector is  $150^\circ$  then what is its area in  $cm^2$ .**

**(Take  $\pi = \frac{22}{7}$ )**

- A 584.8
- B 577.5
- C 564.6
- D 580.4

**Answer: B**

**Explanation:**

$$\begin{aligned} \text{Area of sector} &= \frac{\theta}{360^\circ} \times \pi r^2 \\ &= \frac{150^\circ}{360^\circ} \times \frac{22}{7} \times (21)^2 \\ &= \frac{5}{12} \times 22 \times (3 \times 21) \\ &= \frac{5}{2} \times 11 \times 21 = 577.5 \text{ cm}^2 \\ &\Rightarrow \text{Ans - (B)} \end{aligned}$$

**Question 52**

The present ages of A and B are in the ratio 15 : 8. After 8 years their ages will be in the ratio 17 : 10. What will be the ratio of ages of A and B after 10 years from now?

- A 10 : 7
- B 8 : 5
- C 5 : 3
- D 7 : 4

**Answer: C**

**Explanation:**

Let present age of A =  $15x$  years and B =  $8x$  years

According to ques,

$$\begin{aligned} \Rightarrow \frac{15x+8}{8x+8} &= \frac{17}{10} \\ \Rightarrow 150x + 80 &= 136x + 136 \\ \Rightarrow 14x &= 136 - 80 = 56 \\ \Rightarrow x &= \frac{56}{14} = 4 \end{aligned}$$

$$\begin{aligned} \therefore \text{Ratio of ages of A and B after 10 years from now} &= \frac{15 \times 4 + 10}{8 \times 4 + 10} \\ &= \frac{70}{42} = 5 : 3 \\ \Rightarrow \text{Ans - (C)} \end{aligned}$$

**Question 53**

A circus tent is cylindrical to a height of 3 meters and conical above it. If the radius of the base is 52.5 m and the slant height of the cone is 52 m, then the total area of the canvas required to make it is:

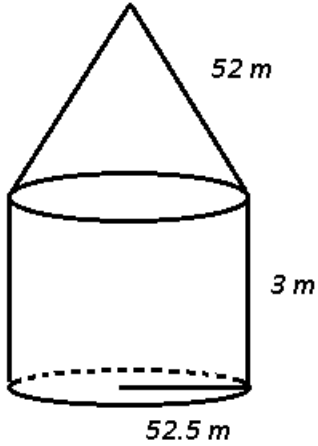
- A  $3048\pi$
- B  $3045\pi$

C  $2730\pi$

D  $2842\pi$

Answer: B

Explanation:



Total area = Curved surface area of cylinder + Curved surface area of cone.

$$= 2\pi rh + \pi rl$$

$$= \pi r(2h + l)$$

$$= 52.5\pi \times [(2 \times 3) + 52]$$

$$= 52.5\pi \times 58$$

$$= 3045\pi \text{ m}^2$$

=> Ans - (B)

Question 54

The compound interest on a sum of ₹ 24500 at 10% p.a for  $2\frac{2}{5}$  years interest compounded yearly is:

A ₹ 6338.40

B ₹ 6342

C ₹ 6330.80

D ₹ 6340

Answer: C

Explanation:

Principal sum  $P = \text{Rs. } 24,500$

Rate of interest =  $r = 10\%$  and time period =  $t = 2\frac{2}{5}$  years

Amount when compounded annually (time in fraction) =  $P \times (1 + \frac{r}{100})^t \times (1 + \frac{\frac{2}{5}r}{100})$  {  $\because$  time in mixed fraction is  $\frac{2}{5}$  }

$$= 24,500 \times (1 + \frac{10}{100})^2 \times (1 + \frac{2 \times 10}{500})$$

$$= 24,500 \times (\frac{121}{100}) \times (\frac{26}{25})$$

$$= 49 \times 121 \times \frac{26}{5} = 30830.80$$

$\therefore$  Compound interest =  $30830.8 - 24500 = 6330.80$

=> Ans - (C)

### Instructions

Study the following table, which shows the number of units of a product manufactured and sold by a company in five years, and answer questions.

Years	Number of units (in thousands) Manufactured	sold
2013	350	320
2014	375	315
2015	300	280
2016	450	423
2017	420	360

### Question 55

What percent of total units of the product manufactured in 2013 and 2015 is the total units unsold during the five years? (correct to one decimal place)

- A 30.8
- B 30.3
- C 29.6
- D 29.4

Answer: B

### Question 56

The ratio of the total number of units sold in 2014 and 2015 to the number of units manufactured in 2017 is:

- A 17:12
- B 19:14
- C 9:8
- D 14:17

Answer: A

### Instructions

For the following questions answer them individually

### Question 57

The value of  $1.6 \div 1.6$  of  $1.6 + 0.6$  of  $1.4 \div 0.5 - 0.001 \times 1.5 \div 0.075$  lies between:

- A 3.4 and 3.6
- B 3.6 and 3.8
- C 3.2 and 3.4
- D 3 and 3.2

Answer: C

**Explanation:**

$$\begin{aligned} \text{Expression} &= 1.6 \div 1.6 \text{ of } 1.6 + 0.6 \text{ of } 1.4 \div 0.5 - 0.001 \times 1.5 \div 0.075 \\ &= \left( \frac{1.6}{1.6} \times 1.6 \right) + \left( 0.6 \times \frac{1.4}{0.5} \right) - \left( 0.001 \times \frac{1.5}{0.075} \right) \\ &= (1.6) + \left( \frac{8.4}{5} \right) - \left( \frac{1.5}{75} \right) \\ &= 1.6 + 1.68 - 0.02 = 3.26 \\ &\Rightarrow \text{Ans - (C)} \end{aligned}$$

**Question 58**

The average of 10 numbers is 41. The average of first 3 numbers is 39.4 and the average of last 4 numbers is 43.5. 4<sup>th</sup> number is 2 more than the 5<sup>th</sup> number and 0.2 more than the 6<sup>th</sup> number. What is the average of the 4<sup>th</sup> and 6<sup>th</sup> numbers

- A 38.7
- B 38.9
- C 39.6
- D 39.9

**Answer:** D

**Explanation:**

Average of 10 numbers = 41

$$\Rightarrow \text{Sum of 10 numbers} = 41 \times 10 = 410$$

$$\text{Similarly, sum of first 3 numbers} = 39.4 \times 3 = 118.2$$

$$\text{Sum of last 4 numbers} = 43.5 \times 4 = 174$$

Let 4th, 5th and 6th numbers be  $x, y, z$  respectively.

$$\Rightarrow x + y + z = 410 - 118.2 - 174 = 117.8 \text{ -----(i)}$$

$$\text{Also, } x = y + 2 = z + 0.2 = k \text{ (say) -----(ii)}$$

$$\text{Solving above equations, we get : } k + (k - 2) + (k - 0.2) = 117.8$$

$$\Rightarrow 3k = 117.8 + 2.2 = 120$$

$$\Rightarrow k = \frac{120}{3} = 40$$

$$\text{Thus, } x = 40, y = 38, z = 39.8$$

$$\therefore \text{Average of the 4}^{th} \text{ and 6}^{th} \text{ numbers} = \frac{40+39.8}{2} = 39.9$$

$\Rightarrow$  Ans - (D)

**Question 59**

The average age of 24 students in a class is 15.5 years. The age of their teacher is 28 years more than the average of all twenty five. What is the age of the teacher in years?

- A  $40\frac{1}{3}$
- B  $41\frac{2}{3}$
- C  $44\frac{2}{3}$

D  $42\frac{1}{3}$

**Answer:** C

**Explanation:**

Average age of 24 students in the class = 15.5 years

=> Total age of 24 students =  $24 \times 15.5 = 372$  years

Let age of teacher =  $x$  years and average age of all 25 =  $\frac{372+x}{25}$

According to ques, =>  $x = 28 + \frac{372+x}{25}$

=>  $25x - x = 700 + 372$

=>  $x = \frac{1072}{24} = \frac{134}{3}$

Thus, age of teacher =  $44\frac{2}{3}$  years

=> Ans - (C)

**Question 60**

If 12,  $x$ , 8 and 14 are in proportion, then what is the mean proportional between  $(x - 12)$  and  $(x + 4)$ ?

A 12

B 11

C 16

D 15

**Answer:** D

**Explanation:**

12,  $x$ , 8 and 14 are in proportion,

=>  $\frac{12}{x} = \frac{8}{14}$

=>  $8x = 14 \times 12$

=>  $x = 7 \times 3 = 21$

Thus, mean proportional between  $(x - 12) = 21 - 12 = 9$  and  $(x + 4) = 21 + 4 = 25$  is

=  $\sqrt{21 \times 9} = \sqrt{225} = 15$

=> Ans - (D)

**Question 61**

A 280 m long train is running at 108 km/hr. In how much time will it cross a bridge of length 170 m?

A 10 sec

B 15 sec

C 16 sec

D 12 sec

**Answer:** B

**Explanation:**

$$\text{Speed of train} = 108 \times \frac{5}{18} \text{ m/s} = 30 \text{ m/s}$$

$$\text{Distance covered} = 280 + 170 = 450$$

$$\therefore \text{Time taken} = \frac{450}{30} = 15 \text{ seconds}$$

=> Ans - (B)

### Question 62

A shopkeepers made a profit of 16% on his goods. If the price at which he buys decreases by 20% while he reduces his selling price by 23%, what is now his percentage of profit? (correct to one decimal place)

A 11.6

B 15.4

C 12.9

D 14.6

Answer: A

### Explanation:

Let his cost price = Rs.  $100x$

$$\text{Selling price to get 16\% profit} = \frac{116}{100} \times 100x = \text{Rs. } 116x$$

$$\text{Now, new cost price} = \frac{80}{100} \times 100x = \text{Rs. } 80x$$

$$\text{New selling price} = \frac{77}{100} \times 116x = \text{Rs. } 89.32x$$

$$\therefore \text{New Profit \%} = \frac{89.32x - 80x}{80x} \times 100$$

$$= \frac{9.32}{80} \times 100 = 11.6\%$$

=> Ans - (A)

### Question 63

The largest sphere is carved out of a cube of side 7 cm. What is the volume of the sphere in  $cm^3$  (Take  $\pi = \frac{22}{7}$ )

A  $179\frac{2}{3}$

B  $182\frac{1}{3}$

C  $179\frac{1}{3}$

D  $182\frac{2}{3}$

Answer: A

### Explanation:

Diameter of largest sphere = side of cube = 7 cm

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

$$= \frac{4}{3} \times \frac{22}{7} \times \left(\frac{7}{2}\right)^3$$

$$= \frac{11}{3} \times 49 = \frac{539}{3}$$

$$= 179\frac{2}{3} \text{ cm}^3$$

=> Ans - (A)



### Question 64

Two vessels A and B contain solution of acid and water. In A and B the ratio of acid and water are 7 : 3 and 4 : 1, respectively. They are mixed in the ratio 1 : 2. What is the ratio of acid and water in the resulting solution?

- A 15 : 8
- B 16 : 7
- C 23 : 7
- D 25 : 9

**Answer:** C

#### Explanation:

In 1 unit of vessel A, quantity of acid =  $\frac{7}{10} \times 1 = \frac{7}{10}$

Quantity of water =  $\frac{3}{10} \times 1 = \frac{3}{10}$

Similarly, in 2 units of vessel B, quantity of acid =  $\frac{4}{5} \times 2 = \frac{8}{5}$

Quantity of water =  $\frac{1}{5} \times 2 = \frac{2}{5}$

=> Ratio of acid and water in the resulting solution =  $\left[\left(\frac{7}{10} + \frac{8}{5}\right) : \left(\frac{3}{10} + \frac{2}{5}\right)\right]$

=  $\frac{23}{10} : \frac{7}{10}$

= 23 : 7

=> Ans - (C)

### Question 65

Let x be the least multiple of 29 which when divided by 20, 21, 22, 24 and 28 then the remainders are 13, 14, 15, 17 and 21 respectively. What is the sum of digits of x?

- A 18
- B 22
- C 19
- D 23

**Answer:** D

#### Explanation:

Since, the difference between the all the numbers are : (20-13), (21-14) = 7

Thus, L.C.M. (20,21,22,24,28) = 9240

Hence, required number will be of the form =  $9240k - 7 =$  multiple of 29

By hit and trial, we see that  $k = 2$  satisfy above equation, thus required number =  $(9240 \times 2) - 7 = 18473$

=> Sum of digits = 23

=> Ans - (D)

### Question 66

At what percentage above the cost price must an article be marked so as to gain 38% after allowing a customer a discount of 8% on the marked price?

- A 48
- B 46
- C 50
- D 45

**Answer:** C

**Explanation:**

Let cost price = Rs.  $100x$

=> Profit % = 38%

=> Selling price =  $\frac{138}{100} \times 100x = \text{Rs. } 138x$

After discount of 8%, marked price =  $\frac{138x}{92} \times 100 = \text{Rs. } 150x$

∴ Markup % =  $\frac{(150x-100x)}{100x} \times 100 = 50\%$

=> Ans - (C)

**Question 67**

The numbers 6, 8, 11, 12,  $2x - 8$ ,  $2x + 10$ , 35, 41, 42, 50 are written in ascending order. If their median is 25, then what is the mean of the numbers?

- A 24.8
- B 24.6
- C 25.5
- D 25.2

**Answer:** C

**Explanation:**

Numbers in ascending order : 6, 8, 11, 12,  $2x - 8$ ,  $2x + 10$ , 35, 41, 42, 50

Median of 10 numbers is the mean of 5th and 6th numbers.

=>  $\frac{(2x-8)+(2x+10)}{2} = 25$

=>  $4x + 2 = 50$

=>  $x = \frac{48}{4} = 12$

Thus, sum of the numbers are =  $6+8+11+12+16+34+35+41+42+50 = 255$

∴ Mean =  $\frac{255}{10} = 25.5$

=> Ans - (C)

**Question 68**

A takes 6 hours more than B to cover a distance of 60 km. But if A doubles his speed, he takes 3 hours less than B to cover the same distance. The speed (in km/hr) of A is:

- A  $\frac{1}{33}$
- B  $\frac{2}{43}$

C 4

D 5

**Answer: A**

**Explanation:**

Let speed of A =  $x$  km/hr and speed of B =  $y$  km/hr

$$\Rightarrow \text{Time taken by B to cover 60 km} = \frac{60}{y}$$

$$\text{Thus, time taken by A} = \frac{60}{x} = 6 + \frac{60}{y}$$

$$\Rightarrow \frac{1}{x} - \frac{1}{y} = \frac{1}{10} \text{ -----(i)}$$

$$\text{Similarly, } \frac{60}{2x} + 3 = \frac{60}{y}$$

$$\Rightarrow \frac{1}{y} - \frac{1}{2x} = \frac{1}{20} \text{ -----(ii)}$$

Adding equations (i) and (ii), we get :  $\frac{1}{2x} = \frac{3}{20}$

$$\Rightarrow x = \frac{10}{3} = 3\frac{1}{3}$$

$\therefore$  Speed of A =  $3\frac{1}{3}$  km/hr

$\Rightarrow$  Ans - (A)

**Question 69**

**A sum of ₹ 1518 is divided among A, B, and C, such that A receives 20% more than B and B receives 20% less than C. What is the share of C in the sum?**

A ₹ 528

B ₹ 440

C ₹ 550

D ₹ 572

**Answer: C**

**Explanation:**

Let sum received by C = Rs.  $100x$

$$\Rightarrow \text{B received} = \frac{80}{100} \times 100x = \text{Rs. } 80x$$

$$\Rightarrow \text{A received} = \frac{120}{100} \times 80x = \text{Rs. } 96x$$

According to ques,  $\Rightarrow 96x + 80x + 100x = 1518$

$$\Rightarrow x = \frac{1518}{276} = 5.5$$

$\therefore$  Sum received by C =  $100 \times 5.5 = \text{Rs. } 550$

$\Rightarrow$  Ans - (C)

### Question 70

Study the following table, which shows the number of units of a product manufactured and sold by a company in five years, and answer questions.

Years	Number of units ( in thousands) Manufactured	sold
2013	350	320
2014	375	315
2015	300	280
2016	450	423
2017	420	360

In which year the number of units of the product sold is 19000 more than the average number of units manufactured per year?

- A 2016
- B 2015
- C 2017
- D 2014

Answer: C

### Question 71

The simple interest on a certain sum is  $11\frac{1}{9}\%$  of the sum and the number of years is equal to the rate percent per annum. What will be the simple interest on a sum of ₹ 12600 at the same rate for  $2\frac{4}{5}$  years?

- A ₹1216
- B ₹1224
- C ₹1176
- D ₹1164

Answer: C

#### Explanation:

Let rate of interest = time period =  $r$

Let sum = Rs.  $9x$ ,  $\Rightarrow$  Simple interest = Rs.  $\frac{1}{9} \times 9x = x$

Simple interest =  $\frac{P \times r \times t}{100}$

$$\Rightarrow \frac{9x \times r \times r}{100} = x$$

$$\Rightarrow r^2 = \frac{100}{9}$$

$$\Rightarrow r = \sqrt{\frac{100}{9}} = \frac{10}{3}\%$$

$\therefore$  Simple interest on a sum of ₹ 12600 at the same rate for  $2\frac{4}{5}$  years

$$= \frac{12600}{100} \times \frac{10}{3} \times \frac{14}{5}$$

$$= 42 \times 28 = \text{Rs. } 1176$$

$\Rightarrow$  Ans - (C)

### Question 72

A can complete  $\frac{2}{3}$  of a work in 8 days. B can complete  $\frac{3}{5}$  of the same work in 12 days and C can complete  $\frac{4}{9}$  of the same work in 8 days. A and B worked together for 5 days. How much time(in days) will C alone take to complete the remaining work?

A 6

B  $7\frac{1}{2}$

C  $8\frac{1}{2}$

D 9

**Answer:** A

#### **Explanation:**

Let total work to be done be L.C.M.(3,5,9) = 45 units

Thus, A complete  $\frac{2}{3}$  of the work in 8 days, => 30 units in 8 days

=> A's efficiency =  $\frac{30}{8} = 3.75$  units/day

Similarly, B's efficiency =  $\frac{27}{12} = 2.25$  units/day

and C's efficiency =  $\frac{20}{8} = 2.5$  units/day

Now, work done by A and B in 5 days =  $(3.75 + 2.25) \times 5 = 30$  units

∴ Remaining work done by C in =  $\frac{(45-30)}{2.5} = 6$  days

=> Ans - (A)

### Question 73

The ratios of efficiencies of A and B of doing a certain work is 5 : 8. Working together they can complete the work in 20 days, A alone will complete 25% of that work in:

A 14 days

B 12 days

C 11 days

D 13 days

**Answer:** D

#### **Explanation:**

Let total work to be done be L.C.M. (13,20) = 260 units

Let work done by A in 1 day =  $5x$  units and by B =  $8x$  units

=> Total work done in 1 day by A and B =  $(5x + 8x) = 13x$  units

According to ques, =>  $13x \times 20 = 260$

=>  $x = \frac{260}{260} = 1$

∴ A alone will complete 25% of work in =  $(\frac{25}{100} \times 260) \div 5$

=  $\frac{65}{5} = 13$  days

=> Ans - (D)

#### Question 74

If 20% more would be gained by selling an article for ₹ 93 than selling it for ₹ 85, then the cost price of the article is:

- A ₹64
- B ₹40
- C ₹56
- D ₹60

**Answer:** B

#### Explanation:

Difference between the selling price =  $93 - 85 = \text{Rs. } 8$

=> Difference in % =  $20\% \equiv 8$

=> Cost price =  $100\% \equiv \frac{8}{20} \times 100$

=  $8 \times 5 = \text{Rs. } 40$

=> Ans - (B)

#### Question 75

The value of  $5\frac{5}{6} \div 3\frac{1}{2} \times 2\frac{1}{10} + \frac{3}{5}$  of  $7\frac{1}{2} \div 3 - \frac{2}{3} \div \frac{8}{15} \times \frac{1}{15}$

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

**Answer:** A

#### Explanation:

Expression :  $5\frac{5}{6} \div 3\frac{1}{2} \times 2\frac{1}{10} + \frac{3}{5}$  of  $7\frac{1}{2} \div 3 - \frac{2}{3} \div \frac{8}{15} \times \frac{1}{15}$

$$= \left( \frac{35}{6} \div 2 \times \frac{21}{10} \right) + \left( \frac{3}{5} \times \frac{15}{2} \div 3 \right) - \left( \frac{2}{3} \div \frac{8}{15} \times \frac{6}{5} \right)$$

$$= \left( \frac{35}{6} \times \frac{2}{7} \times \frac{21}{10} \right) + \left( \frac{3}{5} \times \frac{15}{2} \times \frac{3}{2} \right) - \left( \frac{2}{3} \times \frac{15}{8} \times \frac{6}{5} \right)$$

$$= \frac{7}{2} + \frac{27}{4} - \frac{3}{2}$$

$$= \frac{14+27-6}{4} = \frac{35}{4} = 8\frac{3}{4}$$

=> Ans - (A)

## English

#### Instructions

For the following questions answer them individually

**Question 76**

Select the antonym of the given word.

**GRANT**

- A Refuse
- B Approve
- C Reject
- D Sanction

**Answer:** A

**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.

A team of doctors is focusing over treatment of cancer at an early age.

- A is focusing on to treatment of cancer
- B is focusing on treatment of cancer
- C No improvement
- D is focusing in treatment of cancer

**Answer:** B

**Question 78**

From the given options, identify the segment in the sentence which contains the grammatical error. As a painter he are good if not better than Suresh.

- A he are good
- B than Suresh
- C if not better
- D As a painter

**Answer:** A

**Question 79**

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.

He have been working on and off for two years to complete a book.

- A has work
- B have worked
- C No improvement
- D has been working

**Answer: D**

**Question 80**

Select the word which means the same as the group of words given.  
One who makes an eloquent public speech

- A Leader
- B Debater
- C Speaker
- D Orator

**Answer: D**

**Question 81**

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.

Would you mind help me with these questions?

- A Would you mind helping
- B Would you mind for helping
- C No improvement
- D Would you mind to help

**Answer: A**

**Question 82**

Select the word which means the same as the group of words given.  
The absence of government in a country

- A Bureaucracy
- B Anarchy
- C Autocracy
- D Democracy

**Answer: B**

**Question 83**

Select the option that means the same as the given idiom.  
In black and white

- A In writing
- B In colour



- C Scanned
- D Photocopied

**Answer:** A

### Instructions

In the following passage some words have been deleted. Fill in the blanks with the help of the alternatives given.  
Passage:

In 1893, Lokmanya Tilak converted the Ganapati festival .....(1) a national celebration. He campaigned for .....  
(2) wide celebration of this public festival throughout Maharashtra. It was .....(3) this festival that he .....(4)  
mobilise public support for the nationalist .....(5)

### Question 84

Select the most appropriate option that will fill in the blank number 1.

- A with
- B into
- C for
- D to

**Answer:** B

### Question 85

Select the most appropriate option that will fill in the blank number 2.

- A a
- B some
- C the
- D one

**Answer:** C

### Question 86

Select the most appropriate option that will fill in the blank number 3.

- A with
- B through
- C without
- D throughout

**Answer:** B

### Question 87

Select the most appropriate option that will fill in the blank number 4.

- A may
- B can
- C will
- D could

**Answer:** D

**Question 88**

Select the most appropriate option that will fill in the blank number 5.

- A movement
- B term
- C season
- D festival

**Answer:** A

**Instructions**

For the following questions answer them individually

**Question 89**

Select the most appropriate option to fill in the blank.  
'Discovery of India' ..... by Jawaharlal Nehru.

- A have been written
- B has written
- C has been written
- D have written

**Answer:** C

**Question 90**

Select the correctly spelt word.

- A Acquaintance
- B Acquantage
- C Acquaintance
- D Acquaintence

**Answer:** C

**Question 91**

From the given options, identify the segment in the sentence which contains the grammatical error.  
When I asked for directions, he gave me many wrong informations.

- A When I asked
- B for directions
- C wrong informations
- D gave me many

**Answer:** C

#### Question 92

**Select the synonym of the given word.  
ZENITH**

- A Peak
- B Border
- C Brink
- D Edge

**Answer:** A

#### Question 93

**Select the option that means the same as the given idiom.  
Hit the nail on the head**

- A Accurately right
- B Hit the nail exactly
- C Use hammer and nail
- D Use some tools

**Answer:** A

#### Question 94

**Select the synonym of the given word.  
RESISTANCE**

- A Approval
- B Recognition
- C Refusal
- D Enthusiasm

**Answer:** C

**Question 95**

Select the antonym of the given word.

**HUMILITY**

- A Cruelty
- B Shyness
- C Obedience
- D Modesty

**Answer:** D

**Question 96**

Select the most appropriate option to fill in the blank.

One should be careful to check the grease and oil in ..... car occasionally for its smooth functioning

- A ones
- B their
- C our
- D one's

**Answer:** D

**Question 97**

From the given options, identify the segment in the sentence which contains the grammatical error.

Is the older person always more wiser than the younger one?

- A Is the
- B more wiser
- C older person always
- D than the younger one?

**Answer:** B

**Question 98**

Select the most appropriate word to fill in the blank.

Many tourists to India visit the beautiful valley of Kashmir ..... in spring and summer.

- A generally
- B rarely
- C especially
- D frequently

**Answer:** C

**Question 99**

Select the most appropriate word to fill in the blank.

Our society is ..... by the evil of corruption; the integrity of even senior officials is disputed.

- A indicated
- B endangered
- C specified
- D identified

**Answer:** B

**Question 100**

Select the correctly spelt word.

- A Millennium
- B Milennium
- C Millenniam
- D Millenium

**Answer:** A

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