



2016 SSC CGL 06 Sep Morning Shift

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Mathematics

Instructions

For the following questions answer them individually

Question 1

If $\frac{4}{5}$ th of a number exceeds its $\frac{3}{4}$ th by 8. then the number is :

- A 130
- B 120
- C 160
- D 150

Answer: C

Explanation:

Let the number be x

According to ques,

$$\Rightarrow \frac{4x}{5} - \frac{3x}{4} = 8$$

$$\Rightarrow \frac{16x - 15x}{20} = 8$$

$$\Rightarrow x = 8 \times 20 = 160$$

\Rightarrow Ans - (C)

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Question 2

The rate of discount being given on a shirt, where selling price is Rs. 546 after deducting a discount of Rs. 109 on its marked price, is

- A 14%
- B 18%
- C 15%
- D 16%

Answer: D

Explanation:

Let Marked price = Rs. x

Selling price = Rs. 546

\Rightarrow Discount = MP - SP = Rs. 109

$$\Rightarrow x - 546 = 109$$

$$\Rightarrow x = 546 + 109 = \text{Rs. } 655$$

$$\therefore \text{Discount \%} = \frac{109}{655} \times 100$$

$$= \frac{2180}{131} = 16.64 \approx 16\%$$

\Rightarrow Ans - (D)

Question 3

If the ratio of two numbers is 1:5 and their product is 320, then the difference between the squares of these two numbers is

- A 1024
- B 1256
- C 1536
- D 1435

Answer: C

Explanation:

Let the two numbers be x and $5x$

$$\text{Product} = (x) \times (5x) = 320$$

$$\Rightarrow 5x^2 = 320$$

$$\Rightarrow x^2 = \frac{320}{5} = 64$$

\therefore Difference between the squares of these two numbers

$$= (5x)^2 - (x)^2 = 25x^2 - x^2 = 24x^2$$

$$= 24 \times 64 = 1536$$

\Rightarrow Ans - (C)

Question 4

Numbers of boys and girls are 'x' and 'y' respectively ; average ages of a girl and a boy are 'a' years and 'b' years respectively. The average age (in years) of all boys and girls.

A $\frac{x+y}{bx+ay}$

B $\frac{bx+ay}{x+y}$

C $\frac{ax+by}{x+y}$

D $\frac{x+b}{ax+by}$

Answer: B

Explanation:

Number of boys = x

Average age of boys = b

\Rightarrow Total age of boys = bx

Similarly, total age of girls = ay

\therefore Average age of all boys and girls = Total age of boys and girls / Number of boys and girls

$$= \frac{bx+ay}{x+y}$$

\Rightarrow Ans - (B)

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Question 5

A man bought 30 defective machines for Rs. 1000. He repaired and sold them @ Rs. 300 per machine. He got profit of Rs. 150 per machine. How much did he spend on repairs ?(in Rupees)

- A 5500
- B 4500
- C 3500
- D 2500

Answer: C

Explanation:

Amount spent on buying 30 defective machines = Rs. 1000

Let amount spent on repairs = Rs. $100x$

=> Total CP = Rs. $(100x + 1000)$

Selling price per machine = Rs. 300

=> Total SP = $30 \times 300 = \text{Rs. } 9000$

Profit per machine = Rs. 150

=> Total profit = $30 \times 150 = \text{Rs. } 4500$

Also, Profit = SP - CP

=> $4500 - (100x + 1000) = 9000$

=> $100x + 1000 = 9000 - 4500$

=> $100x + 1000 = 4500$

=> $100x = 4500 - 1000 = 3500$

=> $x = \frac{3500}{100} = 35$

∴ Amount spent on repairs = $100 \times 35 = \text{Rs. } 3500$

=> Ans - (C)

Question 6

x is 5 times longer than y. The percentage by which y is less than x is :

- A 50%
- B 40%
- C 80%
- D 70%

Answer: C

Explanation:

It is given that x is 5 times longer than y, => $x = 5y$

=> $\frac{x}{y} = \frac{5}{1}$

Let $x = 5$ and $y = 1$

=> Percentage by which y is less than x = $\frac{x-y}{x} \times 100$

= $\frac{5-1}{5} \times 100$

= $4 \times 20 = 80\%$

=> Ans - (C)

Question 7

A motor cycle gives an average of 45 km per litre. If the cost of petrol is Rs. 20/litre. The amount required to complete a journey of 540 km is, (in Rupees)

- A 120
- B 360
- C 200
- D 240

Answer: D

Explanation:

The bike runs for 45 km in 1 litre of petrol

Cost of petrol = Rs. 20/litre

Thus, petrol required for covering 540 km = $\frac{540}{45} = 12$ litres

∴ Amount required to complete a journey of 540 km = 12×20

= Rs. 240

⇒ Ans - (D)

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Question 8

A sum of money amounts to Rs. 6655 at the rate of 10% compounded annually for 3 years. The sum of money is

- A Rs.5000
- B Rs.5500
- C Rs.6000
- D Rs.6100

Answer: A

Explanation:

Let the sum of money = Rs. $1000x$

Rate of interest under compound interest = 10% and time = 3 years

Amount = $P(1 + \frac{R}{100})^T = 6655$

⇒ $1000x(1 + \frac{10}{100})^3 = 6655$

⇒ $1000x(\frac{11}{10})^3 = 6655$

⇒ $1000x \times \frac{1331}{1000} = 6655$

⇒ $1331x = 6655$

⇒ $x = \frac{6655}{1331} = 5$

∴ Sum = $1000 \times 5 = Rs.5000$

⇒ Ans - (A)

Question 9

If $x^2 - 4x + 1 = 0$, then the value of $\frac{x^6+1}{x^3}$ is

- A 48
- B 52
- C 55
- D 58

Answer: B

Explanation:

Given : $x^2 - 4x + 1 = 0$

$$\Rightarrow x^2 + 1 = 4x$$

$$\Rightarrow \frac{x^2+1}{x} = 4$$

$$\Rightarrow \left(x + \frac{1}{x}\right) = 4 \text{ ----- (i)}$$

Cubing both sides, we get :

$$\Rightarrow \left(x + \frac{1}{x}\right)^3 = (4)^3$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3 \cdot x \cdot \frac{1}{x} \left(x + \frac{1}{x}\right) = 64$$

Substituting value from equation (i)

$$\Rightarrow \left(x^3 + \frac{1}{x^3}\right) + 3(4) = 64$$

$$\Rightarrow \frac{x^6+1}{x^3} = 64 - 12 = 52$$

\Rightarrow Ans - (B)

Question 10

If $(a - 2) + \frac{1}{(a+2)} = -1$ then, the value of $(a - 2)^2 + \frac{1}{(a+2)^2} = -1$ is

- A 7
- B 11
- C 23
- D 27

Answer: A

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Question 11

If $\sqrt{1 + \frac{x}{144}} = \frac{13}{12}$ then x equals to

- A 1
- B 13
- C 27

D 25

Answer: D

Explanation:

$$\text{Expression : } \sqrt{1 + \frac{x}{144}} = \frac{13}{12}$$

Squaring both sides,

$$\Rightarrow \left(1 + \frac{x}{144}\right) = \left(\frac{13}{12}\right)^2$$

$$\Rightarrow \frac{144+x}{144} = \frac{169}{144}$$

$$\Rightarrow 144 + x = 169$$

$$\Rightarrow x = 169 - 144 = 25$$

\Rightarrow Ans - (D)

Question 12

If 'O' is the incentre of the Δ PQR. If $\angle POR = 115^\circ$, then value of $\angle PQR$ is

A 40°

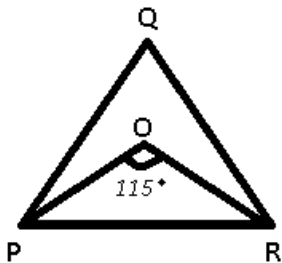
B 65°

C 50°

D 25°

Answer: C

Explanation:



Given : O is the incentre of Δ PQR and $\angle POR = 115^\circ$

To find : $\angle PQR = \theta = ?$

$$\text{Incentre of a triangle} = 90^\circ + \frac{\theta}{2}$$

$$\Rightarrow 115^\circ = 90^\circ + \frac{\theta}{2}$$

$$\Rightarrow \frac{\theta}{2} = 115^\circ - 90^\circ = 25^\circ$$

$$\Rightarrow \theta = 25^\circ \times 2 = 50^\circ$$

\Rightarrow Ans - (C)

Question 13

The inradius of triangle is 4 cm and its area is 34 sq. cm. the perimeter of the triangle is

A 8.5 cm

B 17 cm

C 34 cm

D 20 cm

Answer: B

Explanation:

Area of triangle = in-radius \times semi-perimeter

In radius = 4 cm

Let perimeter of triangle = x cm

\Rightarrow Semi-perimeter = $\frac{x}{2}$ cm

\Rightarrow Area = $4 \times \frac{x}{2} = 34$

$\Rightarrow 2x = 34$

$\Rightarrow x = \frac{34}{2} = 17$ cm

\Rightarrow Ans - (B)

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Question 14

If $\tan\theta + \cot\theta = 2$ then the value of $\tan^n\theta + \cot^n\theta$ is

A $2n$

B $\frac{2n}{2}$

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

D 2

Answer: D

Explanation:

Given : $\tan\theta + \cot\theta = 2$

Squaring both sides

$\Rightarrow (\tan\theta + \cot\theta)^2 = (2)^2$

$\Rightarrow \tan^2\theta + \cot^2\theta + 2.\tan\theta.\cot\theta = 4$

$\therefore (\tan\theta.\cot\theta = 1)$

$\Rightarrow \tan^2\theta + \cot^2\theta = 4 - 2 = 2$

Again squaring both sides, we get: $\tan^4\theta + \cot^4\theta = 2$

Thus, $\tan^n\theta + \cot^n\theta = 2$

\Rightarrow Ans - (D)

Question 15

A certain number of men can do a piece of work in 60 days. If there were 6 men more, the work can be finished 20 days earlier. The number of men working is

A 6

B 12

C 18

D 24

Answer: B

Explanation:

Let the number of men initially working be x who could finished the work in 60 days

Now, $(x + 6)$ men can finish the work in $60 - 20 = 40$ days

$$\Rightarrow x \times 60 = (x + 6) \times 40$$

$$\Rightarrow 3x = 2x + 12$$

$$\Rightarrow 3x - 2x = x = 12$$

\therefore The number of men working = 12

\Rightarrow Ans - (B)

Question 16

If $a^2 = b + c, b^2 = c + a, c^2 = a + b$, then the value of $3\left(\frac{1}{a+1} + \frac{1}{b+1} + \frac{1}{c+1}\right)$

A 1

B $\frac{1}{3}$

C 3

D 4

Answer: C

Explanation:

Given : $a^2 = b + c$

Adding ' a ' on both sides

$$\Rightarrow a^2 + a = a + b + c$$

$$\Rightarrow a(a + 1) = a + b + c$$

$$\Rightarrow \frac{1}{a+1} = \frac{a}{a+b+c} \text{ -----(i)}$$

$$\text{Similarly, } \frac{1}{b+1} = \frac{b}{a+b+c} \text{ -----(ii)}$$

$$\text{and } \frac{1}{c+1} = \frac{c}{a+b+c} \text{ -----(iii)}$$

$$\text{To find : } 3\left(\frac{1}{a+1} + \frac{1}{b+1} + \frac{1}{c+1}\right)$$

Substituting values from equations (i),(ii) and (iii)

$$= 3\left(\frac{a}{a+b+c} + \frac{b}{a+b+c} + \frac{c}{a+b+c}\right)$$

$$= 3\left(\frac{a+b+c}{a+b+c}\right) = 3$$

\Rightarrow Ans - (C)

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Question 17

The area of a triangle ABC is 10.8 cm^2 . If $CP = PB$ and $2AQ = QB$ then the area of the triangle APQ is

A 3.6 cm^2

B 0.9 cm^2

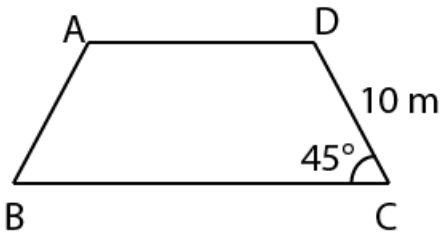
C 2.7 cm^2

D 1.8 cm^2

Answer: D

Question 18

ABCD is a trapezium in which $AD \parallel BC$ and $AB = DC = 10$ m. then the distance of AD from BC is



A $10\sqrt{2}$ m

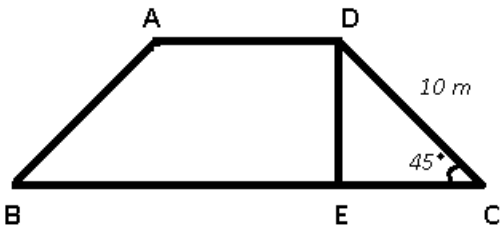
B $4\sqrt{2}$ m

C $5\sqrt{2}$ m

D $6\sqrt{2}$ m

Answer: C

Explanation:



Given : $DC = 10$ m and $\angle DCE = 45^\circ$

DE is the distance between AD and BC

To find : $DE = ?$

Solution : In $\triangle DEC$

$$\Rightarrow \sin(45^\circ) = \frac{DE}{DC}$$

$$\Rightarrow \frac{1}{\sqrt{2}} = \frac{DE}{10}$$

$$\Rightarrow DE = \frac{10}{\sqrt{2}}$$

$$\Rightarrow DE = 5\sqrt{2} \text{ m}$$

\Rightarrow Ans - (C)

Question 19

From the top of a building 60 metre high, the angle of depression of the top and bottom of a tower are observed to be 30° and 60° . The height of the tower in metre is

A 40

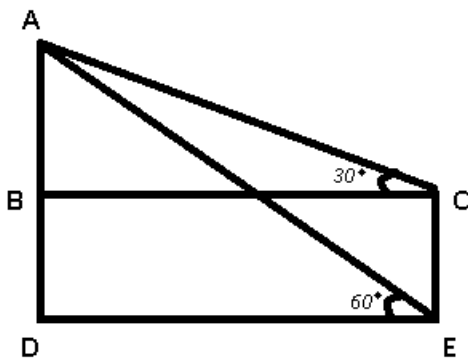
B 45

C 50

D 55

Answer: A

Explanation:



Given : $AD = 60$ m

To find : Height of tower = $CE = ?$

Solution : By symmetry $BD = CE$ and $BC = DE$

In $\triangle ADE$,

$$\Rightarrow \tan(\angle AED) = \frac{AD}{DE}$$

$$\Rightarrow \tan(60^\circ) = \frac{60}{DE}$$

$$\Rightarrow \sqrt{3} = \frac{60}{DE}$$

$$\Rightarrow DE = \frac{60}{\sqrt{3}} = 20\sqrt{3} \text{ m}$$

Thus, $BC = DE = 20\sqrt{3}$ cm

In $\triangle ABC$

$$\Rightarrow \tan(\angle ACB) = \frac{AB}{BC}$$

$$\Rightarrow \tan(30^\circ) = \frac{AB}{20\sqrt{3}}$$

$$\Rightarrow \frac{1}{\sqrt{3}} = \frac{AB}{20\sqrt{3}}$$

$$\Rightarrow AB = 20 \text{ m}$$

$$\therefore CE = BD = AD - AB$$

$$= 60 - 20 = 40 \text{ m}$$

\Rightarrow Ans - (A)

General Science Notes for SSC CGL

Question 20

If a circle of radius 12 cm is divided into two equal parts by one concentric circle, then radius of inner circle is

A 6 cm

B 4 cm

C $6\sqrt{2}$ cm

D $4\sqrt{2}$ cm

Answer: C

Explanation:

Radius of circle = $r = 12$ cm

$$\Rightarrow \text{Area of circle} = \pi r^2$$

$$= \pi(12)^2 = 144\pi$$

$$\text{If circle is divided into two parts, thus area of inner circle} = \frac{144\pi}{2} = 72\pi$$

Let radius of inner circle = r_1 cm

$$\Rightarrow \pi(r_1)^2 = 72\pi$$

$$\Rightarrow r_1 = \sqrt{72} = 6\sqrt{2} \text{ cm}$$

\Rightarrow Ans - (C)

Question 21

If $\cos x = \sin y$ and $\cot(x - 40^\circ) = \tan(50^\circ - y)$, then the value of x and y are ;

A $x = 70^\circ, y = 20^\circ$

B $x = 75^\circ, y = 15^\circ$

C $x = 85^\circ, y = 5^\circ$

D $x = 80^\circ, y = 10^\circ$

Answer: C

Explanation:

Given : $\cos x = \sin y$

$$\Rightarrow \sin(90^\circ - x) = \sin y$$

$$\Rightarrow (90^\circ - x) = y$$

$$\Rightarrow x + y = 90^\circ \text{ -----(i)}$$

Also, $\cot(x - 40^\circ) = \tan(50^\circ - y)$

$$\Rightarrow \cot(x - 40^\circ) = \tan[90^\circ - (40^\circ + y)]$$

Using, $\tan(90^\circ - \theta) = \cot \theta$

$$\Rightarrow \cot(x - 40^\circ) = \cot(40^\circ + y)$$

$$\Rightarrow x - 40^\circ = 40^\circ + y$$

$$\Rightarrow x - y = 80^\circ \text{ -----(ii)}$$

Adding equations (i) and (ii), $\Rightarrow 2x = 80^\circ + 90^\circ = 170^\circ$

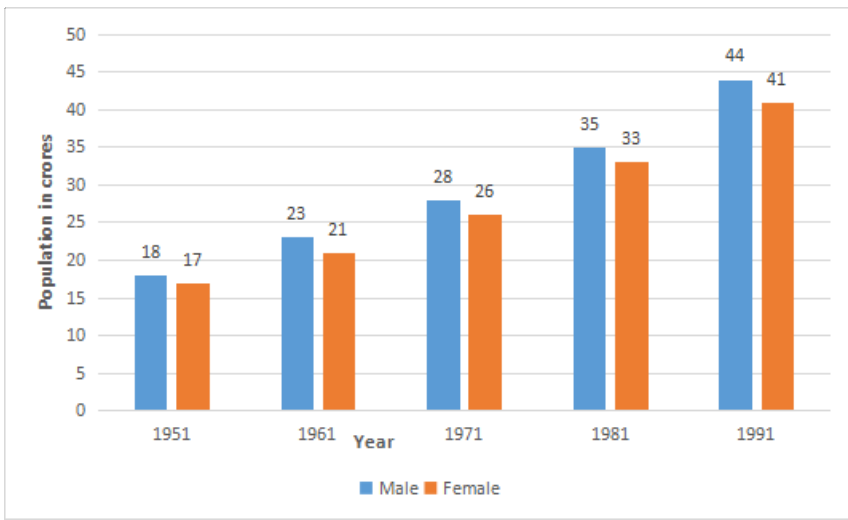
$$\Rightarrow x = \frac{170^\circ}{2} = 85^\circ$$

and $y = 90^\circ - 85^\circ = 5^\circ$

\Rightarrow Ans - (C)

Instructions

The bar graph shows the number of males and females(in crores) in India during 1951-1991. Read the graph and answer the following questions



Question 22

What was the approximate percentage of female population in India during 1991 ?

- A 48.23
- B 48.02
- C 48.03
- D 48.33

Answer: A

Explanation:

Female population in 1991 (in crores) = 41

Total population in 1991 (in crores) = 44 + 41 = 85

$$\Rightarrow \text{Required \%} = \frac{41}{85} \times 100$$

$$= \frac{820}{17} = 48.23\%$$

\Rightarrow Ans - (A)

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Question 23

What was the approximate number of males in India in 1971 per thousands females

- A 913
- B 1075
- C 1077
- D 1175

Answer: C

Explanation:

Males in Indian in 1971 = 28,00,00,000

Females in Indian in 1971 = 26,00,00,000

$$\Rightarrow \text{Approximate number of males in India in 1971 per thousands females} = \frac{280000}{260000}$$

$$= 1.0769 \times 1000 \approx 1077$$

=> Ans - (C)

Question 24

What is the ratio of the number of females in India in 1961 per thousand males to the number of males in India in 1991 per thousand females ?

- A 861:1012
- B 1077:943
- C 1073:913
- D 913:1073

Answer: A

Explanation:

$$\text{Number of females in India in 1961 per thousand males} = \frac{21 \times 1000}{23}$$

$$\text{Number of males in India in 1991 per thousand females} = \frac{44 \times 1000}{41}$$

$$\Rightarrow \text{Required ratio} = \frac{21 \times 1000}{23} : \frac{44 \times 1000}{41}$$

$$= 21 \times 41 : 44 \times 23$$

$$= 861 : 1012$$

=> Ans - (A)

Question 25

Assuming that the rate of increase in the total population in India during 1991-2001 remains the same as that was during the period 1981-1991, estimate the total population in India in 2001.

- A 105.62 crores
- B 106.25 crores
- C 106.52 crores
- D 105.26 crores

Answer: B

Explanation:

$$\text{Total population in 1981} = 35 + 33 = 68$$

$$\text{Total population in 1991} = 44 + 41 = 85$$

$$\% \text{ increase in population} = \frac{85 - 68}{68} \times 100$$

$$= \frac{100}{4} = 25\%$$

$$\therefore \text{Total population in 2001} = 85 \times \frac{125}{100}$$

$$= 85 \times 1.25 = 106.25 \text{ crores}$$

=> Ans - (B)

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Reasoning

Instructions

For the following questions answer them individually

Question 26

Select the related word/letters/numbers from the given alternatives:

Preamble : Constitution :: ? : ?

- A Word : Dictionary
- B Contents : Magazine
- C Explanation : Poetry
- D Preface : Book

Answer: D

Explanation:

The preamble is the introductory part of constitution, similar to a preface of a book.

=> Ans - (D)

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Question 27

Select the related word/letters/numbers from the given alternatives:

EFG : VUT :: KLM : ?

- A KJH
- B PON
- C ZXY
- D FDC

Answer: B

Explanation:

Expression = EFG : VUT :: KLM : ?

The pattern followed is that in the first terms, three consecutive alphabets are written, and the 2nd term, three consecutive alphabets are written in reverse order.

Eg = E (+1 letter) = F (+1 letter) = G

and V (-1 letter) = U (-1 letter) = T

Similarly, K (+1 letter) = L (+1 letter) = M

Thus, P (-1 letter) = O (-1 letter) = N

=> Ans - (B)

Question 28

Select the related word/letters/numbers from the given alternatives:

85 : 42 :: 139 : ?

- A 68
- B 69
- C 70

D 67

Answer: B

Explanation:

Expression = $85 : 42 :: 139 : ?$

The pattern followed is = $2n + 1 : n$

Eg = $2(42) + 1 : 42 = 85 : 42$

Similarly, $2n + 1 = 139$

$\Rightarrow 2n = 139 - 1 = 138$

$\Rightarrow n = \frac{138}{2} = 69$

\Rightarrow Ans - (B)

Question 29

For the following questions

Find the odd word/letters/number from the given alternatives.

A Geometry

B Trigonometry

C Algebra

D Mathematics

Answer: D

Explanation:

Geometry, Trigonometry and Algebra are all branches of Mathematics, hence it is the odd one out.

\Rightarrow Ans - (D)

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Question 30

For the following questions

Find the odd word/letters/number from the given alternatives.

A BDGK

B JLOS

C NPSW

D MORU

Answer: D

Explanation:

(A) : B (+2 letters) = D (+3 letters) = G (+4 letters) = K

(B) : J (+2 letters) = L (+3 letters) = O (+4 letters) = S

(C) : N (+2 letters) = P (+3 letters) = S (+4 letters) = W

(D) : M (+2 letters) = O (+3 letters) = R (+3 letters) = U

\Rightarrow Ans - (D)

Question 31

For the following questions

Find the odd word/letters/number from the given alternatives.

- A 64
- B 125
- C 225
- D 216

Answer: C

Explanation:

$$64 = 4^3$$

$$125 = 5^3$$

$$225 = 15^2$$

$$216 = 6^3$$

225 is not a perfect cube, hence it is the odd one.

=> Ans - (C)

Question 32

If the given words are arranged according to English dictionary, which word will be in third place?

- A KNOW
- B KNACK
- C KNIT
- D KNOB

Answer: D

Explanation:

As per the English dictionary,

= Knack -> Knit -> Knob -> Know

Thus, third word is 'Knob'.

=> Ans - (D)

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Question 33

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

ELFA, GLHA, ILJA, ? , MLNA

- A OLPA
- B KLMA
- C LLMA
- D KLLA

Answer: D

Explanation:

Expression : ELFA, GLHA, ILJA, ? , MLNA

The pattern is that in each term, the second and last letters are constant which are 'L' and 'A' respectively. The other two letters, i.e., first and third are consecutive letters of English alphabetical series.

Thus, letters after IJ and before MN = KL

=> Missing term = **KLLA**

=> Ans - (D)

Question 34

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

5, 11, 17, 25, 33, 43, ?

A 49

B 51

C 52

D 53

Answer: D

Explanation:

Consecutive even numbers are added to every 2 terms.

$$5 + 6 = 11$$

$$11 + 6 = 17$$

$$17 + 8 = 25$$

$$25 + 8 = 33$$

$$33 + 10 = 43$$

$$43 + 10 = \mathbf{53}$$

=> Ans - (D)

Question 35

Pointing towards a photo, Rakesh said, "She is the daughter of the only son of my grandfather." How is the girl related to Rakesh?

A Sister

B Daughter

C Grand Daughter

D Cousin

Answer: A

Explanation:

Only son of Rakesh's grandfather = Rakesh's father

Now, the girl is the daughter of Rakesh's father, => Rakesh and the girl are siblings.

Thus, She is Rakesh's sister.

=> Ans - (A)

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Question 36

A is mother of B , C is son of A , D is brother of E, E is daughter of B. Who is the grandmother of E?

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

Answer: A

Explanation:

Note :- The second and third statements are redundant.

From first and last statements, we get :

A is mother of B and E is daughter of B, => E is granddaughter of A.

Thus, A is grandmother of E.

=> Ans - (A)

Question 37

From the given alternative words, select the word which cannot be formed using the letters of the given word:

COURAGEOUS

- A COURSE
- B GRACE
- C SECURE
- D ARGUE

Answer: C

Explanation:

The word COURAGEOUS does not contain 2 E's, and thus the word 'Secure' cannot be formed.

=> Ans - (C)

Question 38

If THEN is written as RLBS , then how may CASE be written in that code ?

- A AEPJ
- B APEP
- C EPAP
- D PAEJ

Answer: A

Explanation:

THEN is written as RLBS

The pattern followed is :

T	H	E	N
(-2)	(+4)	(-3)	(+5)
R	L	B	S

Similarly, for CASE :

C	A	S	E
(-2)	(+4)	(-3)	(+5)
A	E	P	J

=> Ans - (A)

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Question 39

If '*' means subtraction ; '-' means division , '+' means addition and '%' means multiplication, then find the value of: $13 \square 3 * 6 \% 8 - 4 \square 14 = ?$

- A 18
- B 14
- C 12
- D 8

Answer: A

Explanation:

Expression : $13 \square 3 * 6 \% 8 - 4 \square 14 = ?$

$$\equiv 13 + 3 - 6 \times 8 \div 4 + 14$$

$$= 16 - 12 + 14 = 18$$

=> Ans - (A)

Question 40

Some equations are solved on the basis of certain system. Find out the correct answer for the unsolved equation on that basis.

If $3*2*8*4 = 632$, $2*4*4*4 = 816$ then $3*3*5*1 = ?$

- A 95
- B 45
- C 315
- D 184

Answer: A

Explanation:

The product of the first two and the last two numbers is concatenated.

Eg : $3*2*8*4 = 6$ and $32 = 632$

and $2*4*4*4 = 8$ and $16 = 816$

Similarly, $3*3*5*1 = 9$ and $5 = 95$

=> Ans - (A)

Question 41

Find the missing numbers from the given alternatives

86	480	38
72	510	21
36	?	12

- A 120
- B 360
- C 100
- D 240

Answer: D

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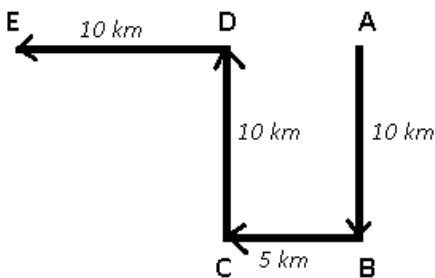
Question 42

Rema walked 10kms south and turned right and walked 5kms. Then again she turned right and walked 10kms. Then she turned left and walked 10kms. How many kms will rema have to walk to reach the starting point?

- A 25 km
- B 20 km
- C 5 km
- D 15 km

Answer: D

Explanation:



Let Rema started from point A, she walked south for 10 km and reached point B, then she turned right and walked towards west for 5 km and reached C. Then, she turned left and reached D after walking for 10 km and finally again turned left and stopped at point E after walking 10 km.

Thus, $AE = 10 + 5 = 15$ km

=> Ans - (D)

Question 43

One statement is given followed by two conclusions/assumptions, I and II. You have to consider the statement to be true, even if it seems to be at variance from commonly known facts. You are to decide which of the given conclusions/assumptions can definitely be drawn from the given statement. Indicate your answer.

Statements:

All Hindus are God fearing. No Japanese is a Hindu.

Conclusions:

- I. The Japanese are not God fearing.
- II. All God fearing are Hindus.

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

Answer: D

Explanation:

All Hindus are God fearing does not imply that all God fearing are Hindus, thus second conclusion is definitely false.

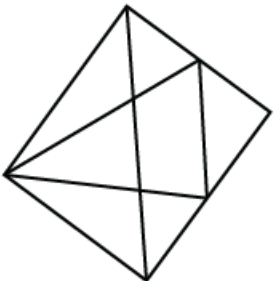
Also, no Japanese is a Hindu does not imply the the Japanese are not God fearing.

Thus, neither conclusion I nor conclusion II follows.

=> Ans - (D)

Question 44

Find the number of triangles in the figure



- A 8
- B 9
- C 11
- D 13

Answer: D

Explanation:

Smaller triangles = 6

Triangles formed with 1 triangle and 1 quadrilateral = 1

Triangles formed with combination of 2 triangles = 4

Triangles formed with combination of 3 triangles = 1

Triangles formed with 3 triangles and 1 quadrilateral = 1

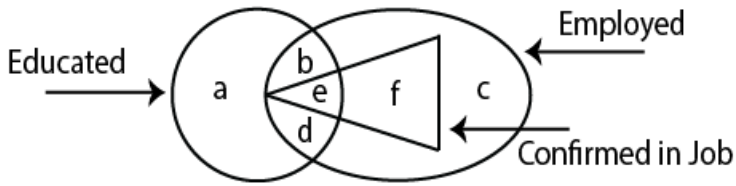
Thus, total triangles = 6 + 1 + 4 + 1 + 1 = 13

=> Ans - (D)

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Question 45

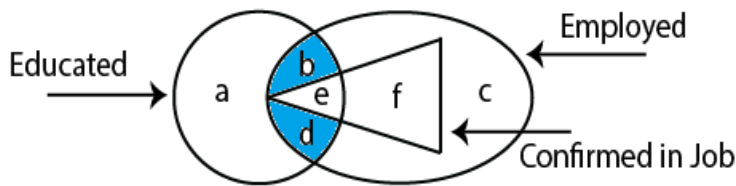
Study the following Venn Diagram and find the region representing persons who are educated and employed but not confirmed.



- A a, c
- B a, b, c
- C b, d
- D a, d, c

Answer: C

Explanation:

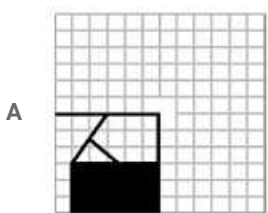
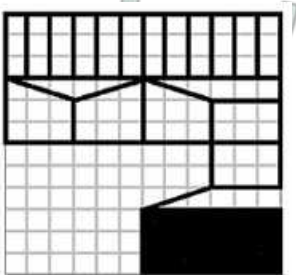


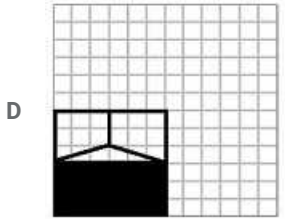
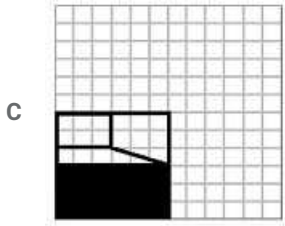
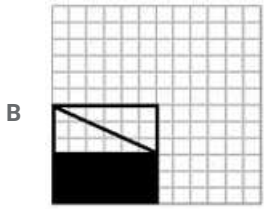
Persons who are educated and employed but not confirmed are represented in blue colour = $b + d$

=> Ans - (C)

Question 46

Which answer figure will complete the pattern in the question figure?

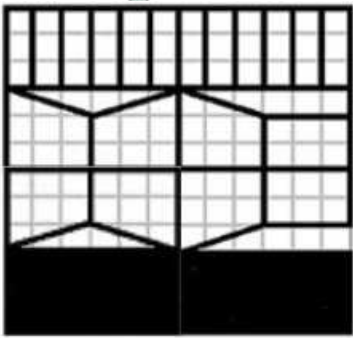




Answer: D

Explanation:

When we complete the above figure, we get :

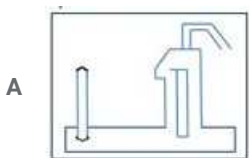
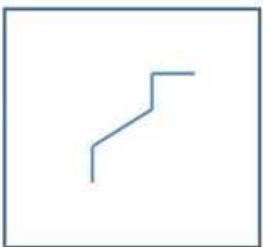


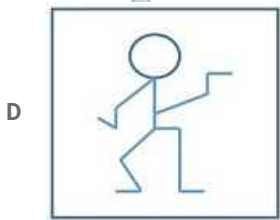
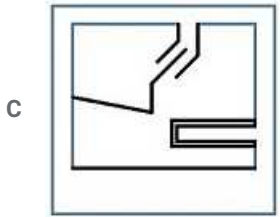
Now, the fourth figure resembles the above missing part.

=> Ans - (D)

Question 47

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





Answer: D

Explanation:

The question figure is embedded in the following figure :

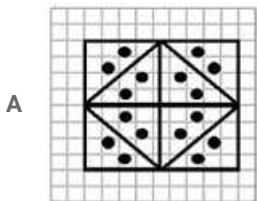
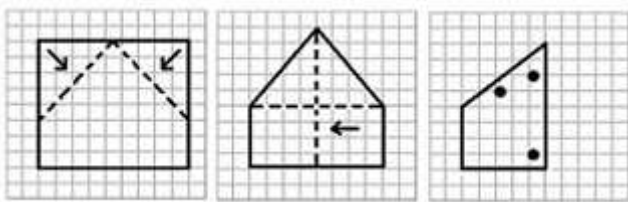


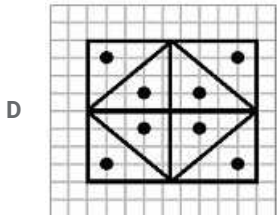
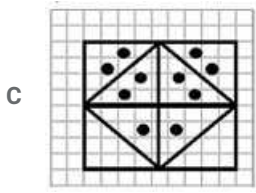
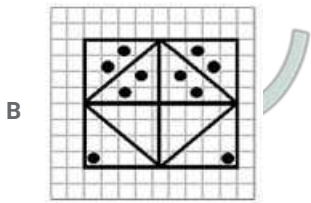
=> Ans - (D)

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Question 48

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

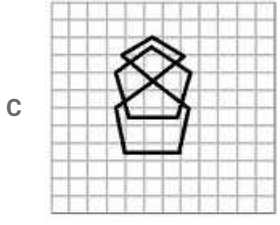
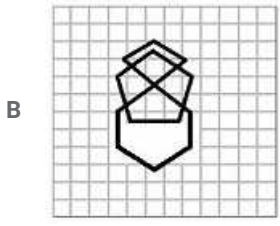
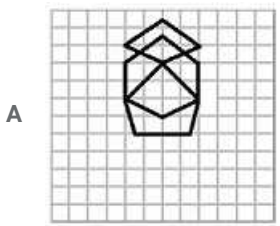
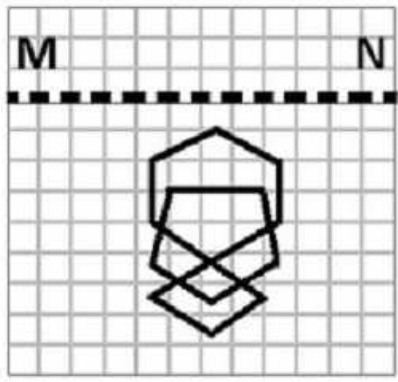




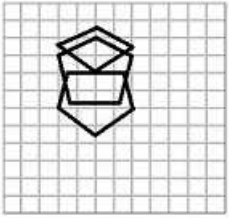
Answer: C

Question 49

If a mirror is placed on the line MN, then which of the answer figures is the right image of the given figure?



D



Answer: B

Explanation:

A horizontal mirror is placed, so the objects will turn upside down in the mirror image (e.g - an object at top right will appear at bottom right).

In the question figure, the hexagon is at the top, thus in the mirror image it will appear at the bottom as shown in second figure, hence first, third and last options are eliminated.

=> Ans - (B)

Question 50

In this question, the sets of numbers given in the alternatives are represented. The columns and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, e.g., O can be represented by 03,14, etc., and 'K' can be represented by 56, 65, etc. Similarly you have to identify the set for the word 'EASE'

Matrix - I

	0	1	2	3	4
0	E	S	U	O	H
1	S	U	H	E	O
2	O	H	E	S	U
3	U	E	O	H	S
4	H	O	U	S	E

Matrix - II

	5	6	7	8	9
5	E	K	A	N	S
6	K	A	S	E	N
7	N	S	E	K	A
8	A	E	N	S	K
9	S	N	K	A	E

A 55, 85, 44, 42

B 77, 85, 88, 44

C 77, 66, 31, 44

D 00, 98, 23, 98

Answer: B

Explanation:

(A) : 55, 85, 44, 42 = EAEU

(B) : 77, 85, 88, 44 = EASE

(C) : 77, 66, 31, 44 = EAEE

(D) : 00, 98, 23, 98 = EASA

=> Ans - (B)

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General Awareness

Instructions

For the following questions answer them individually

Question 51

The rate at which RBI gives short term loan to commercial banks is called

- A Repo rate
- B Reverse Repo rate
- C Bank rate
- D Cash Reserve rate

Answer: A

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Question 52

The nationalisation of major commercial banks took place in

- A 1947
- B 1956
- C 1969
- D 1980

Answer: C

Question 53

Lok Sabha Secretariat comes under the direct control of

- A Ministry of Home Affairs
- B Ministry of Parliamentary Affairs
- C Speaker of Lok Sabha
- D President

Answer: C

Question 54

Which of the following Act introduced separate electorates (communal representation) for Muslims?

- A 1892 Act
- B Act of 1909
- C Reforms of 1919
- D Government of India Act of 1935

Answer: B

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Question 55

Where is the Brihadeshwar temple, built during the Chola period, located?

- A Mysore
- B Mahabalipuram
- C Tanjavur
- D Kanyakumari

Answer: C

Question 56

The first protocol to ban the emissions of chlorofluorocarbons in the atmosphere was made in

- A Montreal
- B Osaka
- C Geneva
- D Florida

Answer: A

Question 57

Blood group was discovered by

- A Alexander Fleming
- B William Harvey
- C Landsteiner
- D Paulov

Answer: C

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Question 58

Magnetic Meridian is a

- A Line parallel to the equator of the Earth
- B Latitude
- C Line joining the geographic north and geographic south of Earth
- D Plane passing through the magnetic north and magnetic south of Earth

Answer: D

Question 59

Programs that duplicate the functionality of one system on another system is known as

- A Emulators
- B Simulators

C Evaluators

D PCB

Answer: A

Question 60

The manufacturing of iron from iron-ore involves the process of

A Oxidation

B Reduction

C Electrolysis

D Fractional distillation

Answer: B

General Science Notes for SSC CGL

Question 61

In a rainforest, the vegetation that grows under the shade of a canopy is known as

A Crown

B Canopy

C Understorey

D Forest floor

Answer: C

Question 62

The term "roll-in" is used in

A Cricket

B Tennis

C Hockey

D Golf

Answer: C

Question 63

Which of the following is the busiest International sea port in India?

A Mumbai

B Kolkata

C Kochi

D Tuticorin

Answer: A

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Question 64

The word "Secular" was added to the Preamble of the Constitution of India by which Constitutional Amendment?

- A 41st Constitutional Amendment
- B 42nd Constitutional Amendment
- C 43rd Constitutional Amendment
- D 44th Constitutional Amendment

Answer: B

Question 65

Who coined the slogan "Inquilab Zindabad"?

- A Subash Chandra Bose
- B Balgangadhar Tilak
- C Bhagat Singh
- D Sukhdev

Answer: C

Question 66

"Great Barrier Reef", the world's largest Coral reef is located in

- A Caribbean Islands
- B Australia
- C Philippines
- D Indonesia

Answer: B

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Question 67

Decoding and interpretation of visual information in brain is associated with

- A Frontal lobe
- B Occipital lobe
- C Temporal lobe
- D Parietal lobe

Answer: C

Question 68

Flemings "Left hand Rule" is associated with the effect of

- A Electric field on current
- B Magnetic field on magnet
- C Electric field on magnet
- D Magnetic Field on current

Answer: D

Question 69

An emulsion is a colloidal solution of

- A Liquid in liquid
- B Solid in liquid
- C Gas in solid
- D Solid in Solid

Answer: A

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Question 70

_____ is a byproduct of sewage treatment and can be decomposed to produce bio-gas

- A Sewage
- B Sludge
- C Sewer
- D Scum

Answer: B

Question 71

The BRICS New Development Bank (NDB) is headquartered at

- A Shanghai
- B New Delhi
- C Brasilia
- D Moscow

Answer: A

Question 72

Which one of the following cities of Iraq is located on Tigris river?

- A Baghdad
- B Mousul
- C Kirkuk
- D Basra

Answer: A

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Question 73

Human Development Index is prepared by

- A UNDP
- B WTO
- C IMF
- D WHO

Answer: A

Question 74

Uber Cup is associated with

- A Football
- B Handball
- C Badminton
- D Squash

Answer: C

Question 75

The food in Onion is stored in the form of _____

- A Cellulose
- B Protein
- C Starch
- D Sugar

Answer: A

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English

Instructions

For the following questions answer them individually

Question 76

In the following question, out of the four alternatives, choose the word which best expresses the meaning of the given word and click the button corresponding to it.

NEGOTIATION

- A IN-BETWEEN
- B CARELESSNESS
- C BARGAINING
- D SLACKNESS

Answer: C

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Question 77

In the following question, out of the four alternatives, choose the word which is opposite in meaning to the given word and click the button corresponding to it.

IMPROMPTU

- A PUNCTUAL
- B PROMPT
- C PREPARED
- D PROFOUND

Answer: C

Question 78

Four words are given, out of which only one word is spelt correctly. Choose the correctly spelt word and click the button corresponding to it.

- A Bureaucracy
- B Beureaucracy
- C Beureaucracie
- D Bureaucracie

Answer: A

Question 79

In the following questions, one part of the sentence may have an error. Find out which part of the sentence has an error and click the button corresponding to it. If the sentence is free from error, click the "No error" option.

He told his friend (a) / that he could not do that work (b) / because it is not to his taste (c) / No Error (d)

- A He told his friend
- B that he could not do that work
- C because it is not to his taste

D No Error

Answer: C

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Question 80

In the following questions, one part of the sentence may have an error. Find out which part of the sentence has an error and click the button corresponding to it. If the sentence is free from error, click the "No error" option.

The tragedy of Julius Caesar (a) / was written by William Shakespeare (b) / about 1599 (c) / No Error (d)

A The tragedy of Julius Caesar

B was written by William Shakespeare

C about 1599

D No Error

Answer: C

Question 81

In the following questions, one part of the sentence may have an error. Find out which part of the sentence has an error and click the button corresponding to it. If the sentence is free from error, click the "No error" option.

The writer is (a) / evidently enamoured at (b) / the subject (c) / No Error (d)

A The writer is

B evidently enamoured at

C the subject

D No Error

Answer: B

Question 82

The sentences given with blanks are to be filled with an appropriate word(s). Four alternatives are suggested for each question. For each question, choose the correct alternative and click the button corresponding to it.

Nothing is impossible ____ him.

A in

B about

C for

D on

Answer: C

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Question 83

The sentences given with blanks are to be filled with an appropriate word(s). Four alternatives are suggested for each question. For each question, choose the correct alternative and click the button corresponding to it.

My relations ____ him are not friendly.

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

Answer: B

Question 84

The sentences given with blanks are to be filled with an appropriate word(s). Four alternatives are suggested for each question. For each question, choose the correct alternative and click the button corresponding to it.

George ____ to this country a year ago.

- A was coming
- B came
- C is coming
- D comes

Answer: B

Question 85

In each of the questions, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and click the button corresponding to it.

Blow one's trumpet

- A To praise another
- B To praise a leader
- C To praise oneself
- D To praise a community

Answer: C

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Question 86

In each of the questions, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and click the button corresponding to it.

Stick to his guns

- A Stand by his truth
- B Maintain his own opinion

C Maintain his weapons

D Maintain his anger

Answer: B

Question 87

In each of the questions, four alternatives are given for the Idiom/Phrase. Choose the alternative which best expresses the meaning of the Idiom/Phrase and click the button corresponding to it.

At sea

A Journey

B At a loss

C Surprise

D Sad

Answer: B

Question 88

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and click the button corresponding to it.

One who is eighty years old

A Septagenarian

B Sextagenarian

C Nonagenarian

D Octogenarian

Answer: D

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Question 89

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and click the button corresponding to it.

A shady fertile place in the desert

A Oasis

B Motel

C Orchard

D Garden

Answer: A

Question 90

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and click the button corresponding to it.

A place where bees are kept

- A Apiary
- B Nursery
- C Aviary
- D Kennel

Answer: A

Instructions

A sentence/a part of the sentence is underlined. Four alternatives are given to the underlined part which will improve the sentence. Choose the correct alternative and click the button corresponding to it. In case no improvement is needed, click the button corresponding to "No improvement".

Question 91

Seeing may be believing but understanding are definitely knowing.

- A understanding could be knowing
- B understanding to know
- C understanding is definitely knowing
- D No improvement

Answer: C

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Question 92

There are some bacteria that are survive inside nuclear power stations.

- A have
- B were
- C can
- D No improvement

Answer: C

Question 93

No sooner did she finish the lecture, that the students began to leave.

- A then the students began to leave
- B than the students began to leave
- C and the students began to leave
- D No improvement

Answer: B

Question 94

Hundreds gathered to await the boxer's arrival at the airport.

- A to await for
- B to awaits for
- C to wait
- D No improvement

Answer: D

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Question 95

The dissidents hold a great problem in every political party.

- A cause
- B instil
- C incite
- D No improvement

Answer: A

Instructions

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

Stockholm is spread out on an archipelago of 14 islands, where Lake Malaren meets the Baltic Sea. More airy than Venice, with wide-open spaces, it is one-third water. Its other two-thirds combine arched bridges, jet fountains, and palatial buildings trimmed with gold. For Stockholmers, fans of great outdoors, this is an amiable and graceful home and a healthy environment in which to live. Minutes from the city centre are parks and woodland for recreation, and clear water for swimming and fishing. In winter, everyone takes to ice-skating, on artificial rinks in the shadows of grand palaces, or on the frozen waters of the channel.

Stockholm is also a city at the leading edge of fashion, design and advanced technology. Fashion houses and IT companies use the city as a test market for their innovations, especially as Stockholmers are followers of technology. Stockholm is the capital as well as the largest city of Sweden. It is the site of the government and Parliament of the country.

Question 96

An archipelago is a collection of ____ .

- A cities
- B islands
- C lakes
- D coral-reefs

Answer: B

Question 97

Stockholm is

- A One-third water and two-thirds arched bridges, jet fountains and palatial buildings
- B Two-thirds water and one-third land

- C Full of tall buildings
- D a city with lots of people

Answer: A

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Question 98

What is the opposite of the word 'amiable'?

- A Enervating
- B Refreshing
- C Invigorating
- D Unpleasant

Answer: D

Question 99

Why is Stockholm used as a test market for innovation by IT companies and Fashion houses?

- A The Stockholmers are followers of technology.
- B Stockholm is the largest city of Sweden.
- C The citizens are fashionable.
- D The people like the outdoors.

Answer: A

Question 100

Stockholm is important to the country because _____ .

- A it has palatial buildings.
- B there are parks and woodlands for recreation.
- C there are artificial skating rinks.
- D it is the largest city and capital of Sweden.

Answer: D

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