



2016 SSC CGL 03 Sep Morning Shift

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General Awareness

Instructions

For the following questions answer them individually

Question 1

MUDRA Bank has been launched to help

- A Small business
- B Marginal farmers
- C Poor women
- D Rural sector

Answer: A

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Question 2

Which of the following controls the insurance business of India?

- A RBI
- B IDBI
- C SEBI
- D IRDA

Answer: D

Question 3

The Speaker of Lok Sabha addresses his letter of resignation to the

- A President of India
- B Prime Minister
- C Deputy Speaker of Lok Sabha
- D The Chief Justice of India

Answer: C

Question 4

Who presided over the first session of the Indian National Congress?

- A A.O. Hume
- B Surendranath Banerjee
- C W.C. Banerjee
- D Badruddin Tayyabji

Answer: C

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Question 5

Which of the following writers has called Akbar's Din-i-Ilahi as a monument of his folly, not of wisdom?

- A Badayuni
- B Vincent Smith
- C Barni
- D W.Haig

Answer: B

Question 6

Which of the following region in India is now regarded as an "Ecological Hot Spot"?

- A Western Himalayas
- B Eastern Himalayas
- C Western Ghats
- D Eastern Ghats

Answer: C

Question 7

The Beaufort scale is used to measure:

- A Atmospheric pressure
- B Altitudes of mountains
- C Wind velocity
- D Intensity of earthquakes

Answer: C

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Question 8

The waste management technique that involves the use of micro-organisms to remove or neutralize pollutants from contaminated site is called

- A Bio sensor
- B Bio magnification
- C Bio remediation
- D Bio concentration

Answer: C

Question 9

In IT networking, which of the following device is used in physical layer?

- A Repeater
- B Router
- C Transport Gateway
- D Bridge

Answer: A

Question 10

The purest form of water in nature is

- A Rain water
- B Lake water
- C River water
- D Sea water

Answer: A

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Question 11

The source of energy that causes the least global warming is

- A coal
- B Geothermal energy
- C Natural Gas
- D Petroleum

Answer: B

Question 12

The constellation 'Sapta Rishi' is known to Westerners as the

- A Seven Monks
- B Alpha Centauri
- C Big Dipper
- D Small Bear

Answer: C

Question 13

Bridge is the technique used in

- A Athletics
- B Wrestling
- C Weight lifting
- D Karate

Answer: B

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Question 14

Which of the following books is called the 'Bible of Socialism'?

- A Economics of Welfare
- B Das Capital
- C Value and Capital
- D Asian Drama

Answer: B

Explanation:

Das Capital which is written by Karl Marx is called as the Bible of Socialism.

Question 15

Which country recently detonated its first hydrogen bomb?

- A North Korea
- B South Korea
- C Iran
- D Libya

Answer: A

Question 16

The Swarna Jayanti Shahari Rojgar Yojna (SJSRY) mainly aims at creating employment opportunities for

- A both self employment and wage employment in urban areas
- B self employment in urban areas only
- C wage employment in urban areas only
- D None of these

Answer: A

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Question 17

Who is known as the 'Father of Green Revolution' in the world?

- A G. Paul
- B Norman Borlaug
- C Van Neil
- D Dr. Mithchell

Answer: B

Explanation:

'Norman Ernest Borlaug' is known as the father of Green Revolution in the world.

Question 18

The component used for tuning a radio is basically a variable _____.

- A Resistor
- B Condenser
- C Inductor
- D Transformer

Answer: B

Question 19

Which of the following is not a donor atom?

- A Phosphorus
- B Antimony
- C Arsenic
- D Aluminium

Answer: D

General Science Notes for SSC CGL

Question 20

Which one of the following party was founded by Subhash Chandra Bose?

- A Abhinav Bharat
- B Azad Hind Sena
- C Revolutionary Army
- D Forward Block

Answer: D

Question 21

0°K is equivalent to

- A 273°C
- B -273°C
- C 0°C
- D 100°C

Answer: B

Question 22

The oxygen liberated during photosynthesis comes from

- A Water
- B Carbon dioxide
- C Glucose
- D Chlorophyll

Answer: A

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Question 23

First national park of India that was established in 1936 was named as

- A Kanha National Park
- B Bharatpur National Park
- C Hailey National Park
- D Rajaji National Park

Answer: C

Question 24

Who is the 1st Indian female amputee to climb Mount Everest?

- A Arunima Sinha
- B Bachendri Pal
- C Santosh Yadav
- D Premlata Agarwal

Answer: A

Question 25

The term 'Higgs Boson' is associated with

- A Nano Technology
- B Oncology
- C God Particle
- D Stem Cell Research

Answer: C

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English

Instructions

For the following questions answer them individually

Question 26

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.

LABYRINTH

- A MAZE
- B PATH
- C SKYSCRAPER
- D IMPASSE

Answer: A

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Question 27

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.

BARREN

- A FERTILE
- B ABUNDANT
- C HARSH
- D FOLLOW

Answer: A

Question 28

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 Mysogynous
- B Misogynous

C Mysoginous

D Misoginous

Answer: B

Question 29

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.

According to scientists(a)/, there are a lot of(b)/answers about it(c)/No Error(d).

A According to scientists

B there are a lot of

C answers about it

D No Error

Answer: C

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Question 30

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.

They are coming (a)/ straight to (b)/our direction.(c)/No Error(d).

A They are coming

B straight to

C our direction

D No Error

Answer: B

Question 31

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 building collapsed(a)/at the afternoon (b)/at about 4 o'clock (c)/No Error(d).

A The building collapsed

B at the afternoon

C at about 4 o'clock

D No Error

Answer: B

Question 32

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.

The police is _____ on his activities.

- A keeping an eye
- B keeping watchful eyes
- C keeping both eyes
- D keeping one eye

Answer: A

Explanation:

'Keeping an eye' means to watch someone or to stay informed about the person's behavior. Hence, Option A is the correct answer.

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Question 33

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.

Are you _____ stamp collecting?

- A interested by
- B interested in
- C interested at
- D interested about

Answer: B

Question 34

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.

Your report _____ my statement.

- A conforms
- B conforming
- C confirms
- D comforting

Answer: C

Question 35

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.

To get cold feet

- A Drenched

- B Fear
- C Felicitate
- D Fever

Answer: B

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Question 36

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.

Beside the mark

- A Perfect
- B Not to the point
- C Relevant
- D Charming

Answer: B

Question 37

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.

On tenterhooks

- A Happy and excited
- B In suspense and anxiety
- C Angry and irritated
- D Surprised and shocked

Answer: B

Question 38

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

Property inherited from one's father or ancestors.

- A Patrimony
- B Mercenary
- C Hereditary
- D Aristocracy

Answer: A

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Question 39

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 person who is womanish in his habits

- A Feminist
- B Philogynist
- C Effeminate
- D Feminine

Answer: C

Question 40

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 converted from one religion to another

- A Pilgrim
- B Polytheist
- C Proselyte
- D Presbyte

Answer: C

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 41

Do you have some sugar?

- A any sugar
- B little sugar
- C small sugar
- D No improvement

Answer: A

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Question 42

Iago lied to Othello about his wife

- A lay
- B laid

- C lain
- D No improvement

Answer: D

Question 43

It is not possible to tell the entire story in nutshell.

- A in a nutshell
- B in the nut
- C in a shell
- D No improvement

Answer: A

Question 44

It is all but same to me whether I am transferred to Mumbai or Kolkata.

- A all or same
- B all the same
- C all one
- D No improvement

Answer: B

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Question 45

Despite his father's financial assistance he was always hard on

- A hard in
- B hard up
- C hard out
- D No improvement

Answer: B

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.

Even the majority of elders turn their homes into hives of worry as they have too little to do in too much time. Those who have retired thus find retirement tiresome when hobbies, instead, could have turned it into a period of creativity and contentment.

This common problem of inability to utilise leisure pleurably and profitably is not restricted to Indians. In fact, Japanese are the worse sufferers. Their weekends, rather than increase their enjoyment of life, have wreaked havoc on their health and happiness. Unable to while away the long, unstructured hours, many of them have become addicts to coffee or hard liquor, and have even taken to gambling.\

How has this social malady come about? Ironically, the syllabus-loaded education system is the main culprit. It places a heavy work-

load on children and youth, laying emphasis as it does on memory rather than intelligence.

Question 46

Why do a majority of retired elders find retirement tiresome?

- A Because their homes have been turned into hives of worry.
- B Because they do not have hobbies to utilise their free time.
- C Because they had nothing to do.
- D Because they had plenty of free time.

Answer: B

Question 47

How have the Japanese benefitted from their weekends?

- A They have increased enjoyment in life.
- B They enjoy health and happiness.
- C They use their free time to increase their enjoyment.
- D They become addicts to coffee or hard liquor and gambling.

Answer: D

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Question 48

The syllabus-loaded education system

- A Places a heavy burden on the youth.
- B Ensures that parents pay attention to the development of children.
- C Lays emphasis on intelligence.
- D Gives students a lot of free time.

Answer: A

Question 49

The author thinks that

- A Authorities are more appreciative of the syllabus-loaded education system.
- B Hobbies play an important role in changing the unfortunate situation.
- C Co-curricular activities are discouraged.
- D Only Indians suffer from inability to utilise leisure.

Answer: B

Question 50

The passage tells us that

- A Hobbies are a waste of time
- B Hobbies play a crucial role in physical and mental development.
- C Hobbies wreak havoc on man's health and happiness.
- D Hobbies can turn us into addicts of coffee, liquor or gambling.

Answer: B

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Mathematics

Instructions

For the following questions answer them individually

Question 51

If 100 cats kill 100 mice in 100 days, then 4 cats would kill 4 mice in how many days?

- A 4 days
- B 3 days
- C 40 days
- D 100 days

Answer: D

Explanation:

Let M be the total number of mice killed, c be the number of cats, i be the number of days and e be the average number of mice killed by one cat in one day.

The number of mice killed is proportional to both the number of cats and the number of days.

$$\Rightarrow m = ice$$

Substituting $M = 100$, $i = 100$ and $c = 100$ into this equation, we find :

$$\Rightarrow 100 = 100 \times 100 \times e$$

$$\Rightarrow e = \frac{1}{100}$$

Thus, substituting $M = 4$, $c = 4$ and $e = \frac{1}{100}$ to get:

$$\Rightarrow 4 = i \times 4 \times \frac{1}{100}$$

$$\Rightarrow i = 100 \text{ days}$$

\Rightarrow Ans - (D)

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Question 52

In $\triangle ABC$, $DE \parallel BC$ such that $\frac{AD}{BD} = \frac{3}{5}$. If $AC=5.6$ cm, then AE is equal to

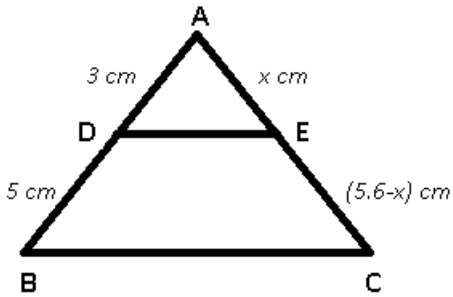
- A 4.2 cm
- B 3.1 cm

C 2.8 cm

D 2.1 cm

Answer: D

Explanation:



DE is parallel to BC and let AD = 3 cm and DB = 9 cm

Also, AC = 5.6 cm and let AE = x cm

$$\Rightarrow \frac{AD}{DB} = \frac{AE}{EC}$$

$$\Rightarrow \frac{3}{9} = \frac{x}{5.6-x}$$

$$\Rightarrow 16.8 - 3x = 5x$$

$$\Rightarrow 3x + 5x = 8x = 16.8$$

$$\Rightarrow x = \frac{16.8}{8} = 2.1 \text{ cm}$$

\Rightarrow Ans - (D)

Question 53

If two circles touch each other internally. The greater circle has its radius as 6 cm and the distance between the centres of the circles is 2 cm. The radius of the other circle is

A 3 cm

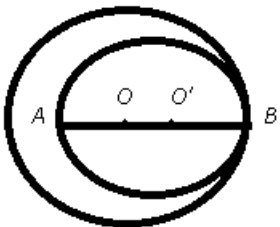
B 4 cm

C 2 cm

D 5 cm

Answer: B

Explanation:



Given : O is the centre of the bigger circle and O' is the centre of the smaller circle.

$$\Rightarrow OB = 6 \text{ cm and } OO' = 2 \text{ cm}$$

To find : $O'B = r = ?$

$$\text{Solution : } OB = OO' + O'B$$

$$\Rightarrow 6 = 2 + r$$

$$\Rightarrow r = 6 - 2 = 4 \text{ cm}$$

\Rightarrow Ans - (B)

Question 54

An office opens at 10 AM and closes at 5 PM. The lunch interval is 30 minutes. The ratio of lunch interval to the total period of office hours is

- A 1:7
- B 1:14
- C 7:1
- D 14:1

Answer: B

Explanation:

The office opens at 10 AM and closes at 5 PM

\Rightarrow Total period of office hours = 7 hours

Lunch interval = 30 minutes = $\frac{1}{2}$ hours

\therefore Ratio of lunch interval to the total period of office hours = $\frac{\frac{1}{2}}{7}$

$$= \frac{1}{14} = 1 : 14$$

\Rightarrow Ans - (B)

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Question 55

A Bookseller allowed 15% discount on the books sold. Sunil purchased books worth Rs.1500. How much will he have to pay to Bookseller.

- A Rs.1200
- B Rs.1250
- C Rs.1275
- D Rs.1300

Answer: C

Explanation:

Marked price of books = Rs. 1500

Discount % = 15%

\Rightarrow Selling price = $\frac{85}{100} \times 1500$

$$= 85 \times 15 = \text{Rs. } 1275$$

\Rightarrow Ans - (C)

Question 56

If the ratio between the profit and sale price of an article is 1:5, then the ratio between the sale price and the cost price of that article is:

- A 3:2

- B 4:3
- C 5:4
- D 6:5

Answer: C

Explanation:

Let selling price of the article = Rs. $5x$

=> Profit of article = Rs. x

Cost price = Selling price - Profit

=> Cost price = $5x - x = \text{Rs. } 4x$

∴ Ratio between the sale price and the cost price of that article = $\frac{5x}{4x}$

= 5 : 4

=> Ans - (C)

Question 57

What percent of 1 day is 36 minutes?

- A 25%
- B 2.5%
- C 3.6%
- D 0.25%

Answer: B

Explanation:

Hours in 1 day = 24 hours

=> Minutes in 1 day = $24 \times 60 = 1440$ minutes

=> Required % = $\frac{36}{1440} \times 100$

= $\frac{100}{40} = 2.5\%$

=> Ans - (B)

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Question 58

A car covers a certain distance in 25 hrs. If it reduces the speed by $\frac{1}{5}$ th, the car covers 200 km less in that time. The speed of car is

- A 60 km/hr
- B 30 km/hr
- C 40 km/hr
- D 50 km/hr

Answer: C

Explanation:

Let speed of car initially = $5x$ km/hr

Time taken = 25 hours

=> Distance covered by car initially = $25 \times 5x = 125x$ km

If speed is reduced by $\left(\frac{1}{5}\right)^{th}$, new speed = $5x - \frac{1}{5} \times 5x = 4x$ km/hr

=> Distance covered in 25 hours = $25 \times 4x = 100x$ km

According to ques,

=> $125x - 100x = 200$

=> $25x = 200$

=> $x = \frac{200}{25} = 8$

∴ Speed of car = $5 \times 8 = 40$ km/hr

=> Ans - (C)

Question 59

At what percent of simple interest will a sum of money double itself in 15 years?

A $6\frac{1}{3}$ %

B $6\frac{2}{3}$ %

C $6\frac{1}{2}$ %

D 6 %

Answer: B

Explanation:

Let sum of money = Rs. x

=> Amount after 15 years = Rs. $2x$

Thus, simple interest = Rs. $(2x - x) =$ Rs. x

Let rate of interest = $r\%$

=> S.I. = $\frac{P \times r \times t}{100}$

=> $\frac{x \times r \times 15}{100} = x$

=> $15r = 100$

=> $r = \frac{100}{15} = 6\frac{2}{3}\%$

=> Ans - (B)

Question 60

$\frac{1}{\sqrt{a}} - \frac{1}{\sqrt{b}} = 0$, then the value of $\frac{1}{a} + \frac{1}{b}$ is

A $\frac{1}{\sqrt{ab}}$

B \sqrt{ab}

C $\frac{2}{\sqrt{ab}}$

D $\frac{1}{2\sqrt{ab}}$

Answer: C

Explanation:

$$\text{Given : } \frac{1}{\sqrt{a}} - \frac{1}{\sqrt{b}} = 0$$

Squaring both sides, we get :

$$\Rightarrow \left(\frac{1}{\sqrt{a}} - \frac{1}{\sqrt{b}}\right)^2 = 0$$

$$\Rightarrow \left(\frac{1}{\sqrt{a}}\right)^2 + \left(\frac{1}{\sqrt{b}}\right)^2 - 2\left(\frac{1}{\sqrt{a}}\right)\left(\frac{1}{\sqrt{b}}\right) = 0$$

$$\Rightarrow \frac{1}{a} + \frac{1}{b} - \frac{2}{\sqrt{a}\sqrt{b}} = 0$$

$$\Rightarrow \frac{1}{a} + \frac{1}{b} = \frac{2}{\sqrt{ab}}$$

\Rightarrow Ans - (C)

General Science Notes for SSC CGL

Question 61

If $x^2 + y^2 + z^2 = 14$ and $xy + yz + zx = 11$, then the value of $(x + y + z)^2$ is

- A 16
- B 25
- C 36
- D 49

Answer: C

Explanation:

$$\text{Given : } x^2 + y^2 + z^2 = 14 \text{ and } xy + yz + zx = 11 \text{ -----(i)}$$

$$\text{Using, } (x + y + z)^2 = x^2 + y^2 + z^2 + 2(xy + yz + zx)$$

Substituting values from equation (i),

$$\Rightarrow (x + y + z)^2 = 14 + 2(11)$$

$$\Rightarrow (x + y + z)^2 = 14 + 22 = 36$$

\Rightarrow Ans - (C)

Question 62

If $\sqrt{6}\tan\theta = \sqrt{2}$ and $0^\circ < \theta < 45^\circ$, then the value of $\sin\theta + \sqrt{3}\cos\theta - 2\tan^2\theta$ is

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

Answer: B

Explanation:

$$\text{Given : } \sqrt{6}\tan\theta = \sqrt{2}$$

$$\Rightarrow \tan\theta = \frac{\sqrt{2}}{\sqrt{6}} = \frac{1}{\sqrt{3}}$$

$$\Rightarrow \theta = 30^\circ$$

$$\begin{aligned} \therefore \sin\theta + \sqrt{3}\cos\theta - 2\tan^2\theta \\ &= \sin(30^\circ) + \sqrt{3}\cos(30^\circ) - 2\tan^2(30^\circ) \\ &= \frac{1}{2} + \left(\sqrt{3} \times \frac{\sqrt{3}}{2}\right) - 2\left(\frac{1}{\sqrt{3}}\right)^2 \\ &= \frac{1}{2} + \frac{3}{2} - \frac{2}{3} \\ &= \frac{3+9-4}{6} = \frac{8}{6} = \frac{4}{3} \end{aligned}$$

=> Ans - (B)

Question 63

A positive number when decreased by 4, is equal to 21 times the reciprocal of this number. The number is:

- A 3
- B 7
- C 5
- D 9

Answer: B

Explanation:

Let the number be x

According to ques,

$$\begin{aligned} \Rightarrow (x - 4) &= 21 \times \frac{1}{x} \\ \Rightarrow x^2 - 4x - 21 &= 0 \\ \Rightarrow x^2 - 7x + 3x - 21 &= 0 \\ \Rightarrow x(x - 7) + 3(x - 7) &= 0 \\ \Rightarrow (x - 7)(x + 3) &= 0 \\ \Rightarrow x = 7, -3 \\ \therefore x \text{ is positive, thus } x &\neq -3 \end{aligned}$$

\therefore Number = 7

=> Ans - (B)

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Question 64

If $\tan\alpha = 2$, then the value of $\frac{\sin\alpha}{\sin^3\alpha + \cos^3\alpha}$ is

- A $\frac{2}{9}$
- B $\frac{\sqrt{5}}{9}$
- C $\frac{10}{9}$
- D $\frac{5\sqrt{5}}{9}$

Answer: C

Explanation:

Given : $\tan\alpha = 2$ -----(i)

$\Rightarrow \frac{\sin\alpha}{\cos\alpha} = 2$

$\Rightarrow \frac{\sqrt{1-\cos^2\alpha}}{\cos\alpha} = 2$

$\Rightarrow \sqrt{1-\cos^2\alpha} = 2\cos\alpha$

Squaring both sides,

$\Rightarrow 1 - \cos^2\alpha = 4\cos^2\alpha$

$\Rightarrow 4\cos^2\alpha + 1\cos^2\alpha = 1$

$\Rightarrow \cos^2\alpha = \frac{1}{5}$ -----(ii)

$\Rightarrow \sin^2\alpha = 1 - \frac{1}{5} = \frac{4}{5}$ -----(iii)

To find : $\frac{\sin\alpha}{\sin^3\alpha + \cos^3\alpha}$

Dividing both numerator and denominator by $\cos\alpha$

$= \frac{\frac{\sin\alpha}{\cos\alpha}}{\frac{\sin^3\alpha}{\cos\alpha} + \frac{\cos^3\alpha}{\cos\alpha}}$

$= \frac{\tan\alpha}{\tan^3\alpha + \cos^2\alpha}$

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

$= 2 \times \frac{\frac{4}{5}}{\frac{4}{5} + \frac{1}{5}}$

$= \frac{8}{5} = \frac{10}{9}$

\Rightarrow Ans - (C)

Question 65

If $x = \sqrt[3]{28}$, $y = \sqrt[3]{27}$, then the value of $x + y - \frac{1}{x^2+xy+y^2}$ is

- A 8
- B 7
- C 6
- D 5

Answer: C

Explanation:

Given : $x = \sqrt[3]{28}$, $y = \sqrt[3]{27}$

$\Rightarrow x^3 = 28$ and $y^3 = 27$ -----(i)

$\Rightarrow y = 3$ -----(ii)

To find : $x + y - \frac{1}{x^2+xy+y^2}$

$= (x + y) - \frac{(x-y)}{(x-y)(x^2+xy+y^2)}$ [Multiply and divide by $(x - y)$]

Using, $(x - y)(x^2 + xy + y^2) = (x^3 - y^3)$

$= (x + y) - \frac{(x-y)}{(x^3-y^3)}$

$= (x + y) - \frac{(x-y)}{(28-27)}$ [Using (i)]

$= (x + y) - (x - y) = 2y$

$$= 2 \times 3 = 6 \quad [\text{Using (ii)}]$$

=> Ans - (C)

Question 66

If $x=12$ and $y=4$, then the value of $(x + y)^x$ is

- A 48
- B 1792
- C 4096
- D 570

Answer: C

Explanation:

$$x = 12 \text{ and } y = 4$$

To find : $(x + y)^x$

$$= (12 + 4)^{12}$$

$$= (16)^3$$

$$= 4096$$

=> Ans - (C)

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Question 67

In a triangle PQR, $PQ = PR$ and $\angle Q$ is twice that of $\angle P$. Then $\angle Q$ is equal to

- A 72°
- B 36°
- C 144°
- D 108°

Answer: A

Explanation:

$PQ = PR$, => $\triangle PQR$ is an isosceles triangle with $\angle Q = \angle R$

Let $\angle P = \theta$

$$\Rightarrow \angle Q = \angle R = 2\theta$$

In $\triangle PQR$,

$$\Rightarrow \angle P + \angle Q + \angle R = 180^\circ$$

$$\Rightarrow \theta + 2\theta + 2\theta = 180^\circ$$

$$\Rightarrow 5\theta = 180^\circ$$

$$\Rightarrow \theta = \frac{180}{5} = 36^\circ$$

$$\therefore \angle Q = 2 \times 36 = 72^\circ$$

=> Ans - (A)

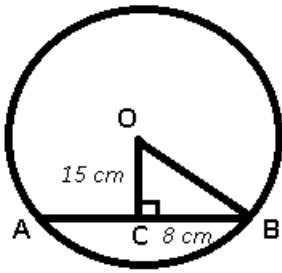
Question 68

If the length of a chord of a circle is 16 cm and is at a distance of 15 cm from the centre of the circle, then the radius of the circle (in cm) is:

- A 15
- B 16
- C 17
- D 34

Answer: C

Explanation:



Given : $AB = 16$ cm and $OC = 15$ cm

To find : $OB = r = ?$

Solution : The line from the centre of the circle to the chord bisects it at right angle.

$$\Rightarrow AC = BC = \frac{1}{2} AB$$

$$\Rightarrow BC = \frac{16}{2} = 8 \text{ cm}$$

In $\triangle OBC$,

$$\Rightarrow (OB)^2 = (BC)^2 + (OC)^2$$

$$\Rightarrow (OB)^2 = (8)^2 + (15)^2$$

$$\Rightarrow (OB)^2 = 64 + 225 = 289$$

$$\Rightarrow OB = \sqrt{289} = 17 \text{ cm}$$

\Rightarrow Ans - (C)

Question 69

On 24th May 2008 the maximum temperature of Delhi, Kolkata and Mumbai were recorded as 35°C , 33°C and 34°C respectively. What was the maximum temperature of Chennai so that the average maximum temperature of those cities would be 35°C ?

- A 34°C
- B 35°C
- C 36°C
- D 38°C

Answer: D

Explanation:

Total maximum temperature of Delhi, Kolkata and Mumbai

$$= 35^\circ\text{C} + 33^\circ\text{C} + 34^\circ\text{C} = 102^\circ\text{C}$$

Let the maximum temperature of Chennai = $x^{\circ}\text{C}$

\Rightarrow Average maximum temperature = 35°C

$$\Rightarrow \frac{102+x}{4} = 35$$

$$\Rightarrow 102 + x = 35 \times 4 = 140$$

$$\Rightarrow x = 140 - 102 = 38^{\circ}$$

\Rightarrow Ans - (D)

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Question 70

The diameter of a sphere is twice the diameter of another sphere. The curved surface area of the first and the volume of the second are numerically equal. The numerical value of the radius of the first sphere is

A 3

B 24

C 8

D 16

Answer: B

Explanation:

Let radius of first sphere = $2r$ cm

\Rightarrow Radius of second sphere = r cm

Also, curved surface area of the first and the volume of the second are equal

$$\Rightarrow 4\pi(2r)^2 = \frac{4}{3}\pi r^3$$

$$\Rightarrow 4r^2 = \frac{r^3}{3}$$

$$\Rightarrow r = 4 \times 3 = 12 \text{ cm}$$

\therefore Radius of the first sphere = $2 \times 12 = 24$ cm

\Rightarrow Ans - (B)

Question 71

The thread of a kite makes 60° angle with the horizontal plane. If the length of the thread be 80 m, then the vertical height of the kite will be

A $\frac{40}{\sqrt{3}}$ m

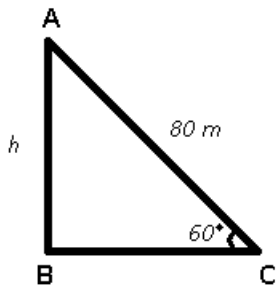
B $80\sqrt{3}$

C 80 m

D $40\sqrt{3}$

Answer: D

Explanation:



Given : AC is the thread of the kite = 80 m

To find : $AB = h = ?$

Solution : In $\triangle ABC$,

$$\Rightarrow \sin(60^\circ) = \frac{AB}{AC}$$

$$\Rightarrow \frac{\sqrt{3}}{2} = \frac{h}{80}$$

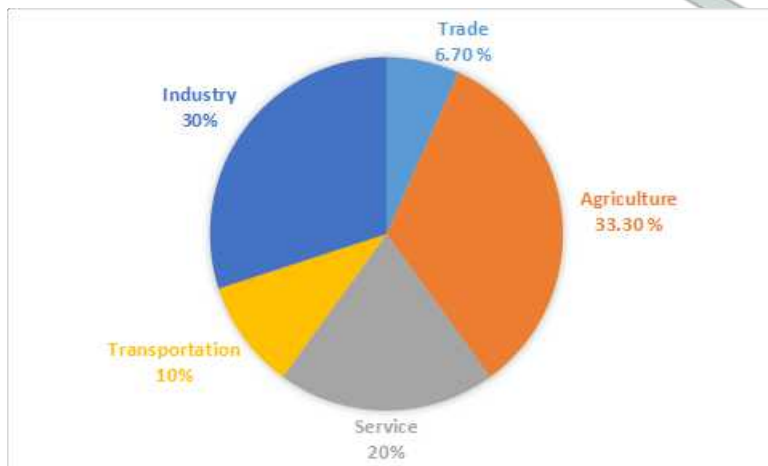
$$\Rightarrow h = 80 \times \frac{\sqrt{3}}{2}$$

$$\Rightarrow h = 40\sqrt{3}\text{ m}$$

\Rightarrow Ans - (D)

Instructions

Study the pie chart carefully and answer the questions. The pie chart represents the percentage of people involved in various occupations. Total number of people = 2000



Question 72

How many more people are involved in service than in trade ?

- A 366
- B 266
- C 166
- D 66

Answer: B

Explanation:

% of people involved in service = 20%

% of people involved in trade = 6.70%

\Rightarrow % difference = $20 - 6.70 = 13.3\%$

$$\therefore \text{Required difference} = \frac{13.3}{100} \times 2000$$

$$= 266$$

=> Ans - (B)

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Question 73

The ratio of the people involved in service to that of industry is

A 1:2

B 2:3

C 3:4

D 3:2

Answer: B

Explanation:

% of people involved in service = 20%

% of people involved in industry = 30%

$$\Rightarrow \text{Required ratio} = \frac{20}{30} = \frac{2}{3}$$

\therefore The ratio of the people involved in service to that of industry = 2 : 3

=> Ans - (B)

Question 74

The sectorial angle made by the people involved in service in the given pie-chart is

A 36°

B 90°

C 72°

D 108°

Answer: C

Explanation:

% of people involved in service = 20%

$$\Rightarrow \text{Required central angle} = \frac{20}{100} \times 360^\circ$$

$$= \frac{360}{5} = 72^\circ$$

=> Ans - (C)

Question 75

The difference between the maximum number of people involved and minimum number of people involved in various professions is

A 264

B 364

C 632

D 532

Answer: D

Explanation:

Clearly, maximum number of people are involved in Agriculture (33.30%) and minimum are involved in Trade (6.70%)

Difference = $33.30 - 6.70 = 26.6\%$

=> Required difference = $\frac{26.6}{100} \times 2000$

= 532

=> Ans - (D)

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Reasoning

Instructions

For the following questions answer them individually

Question 76

Select the related word/letters/number from the given alternatives.

Cell : Cytology:: Birds: ?

A Odontology

B Mycology

C Ornithology

D Etymology

Answer: C

Explanation:

The study of cells is called cytology, similarly the study of birds is called ornithology.

=> Ans - (C)

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Question 77

Select the related word/letters/number from the given alternatives.

DHLP:WSOK::FJNR: ?

A UQMI

B TPLH

C SOKG

D VRNJ

Answer: A

Explanation:

Expression = DHLP:WSOK

The pattern followed is that there are as many alphabets to the left of the first letter as there are to the right of the leftmost letter in right hand side

D is the fourth letter from left end and W is the fourth letter from last, H is 8th from left end and S is 8th from right end. L is 12th from left end and O is 12th from right end. Finally, P is 16th from left end and K is 16th from right end in English alphabetical series.

Similarly, for FJNR :

Now, F is 6th from left end, thus first letter will be 6th from right end = U

J is 10th from left end, second letter will be 10th from right end = Q

N is 14th from left end, third letter will be 14th from right end = M

R is 18th from left end, fourth letter will be 18th from right end = I

Thus, missing term = **UQMI**

=> Ans - (A)

Question 78

Select the related word/letters/number from the given alternatives.

2:10::26:?

A 50

B 36

C 42

D 20

Answer: A

Explanation:

Expression = $2:10::26:?$

The pattern followed is = $n^2 + 1 : (n + 2)^2 + 1$

Eg = $1^2 + 1 : (1 + 2)^2 + 1 = 2 : 10$

Similarly, $5^2 + 1 = 26$

Thus, missing term = $(5 + 2)^2 + 1 = 49 + 1 = 50$

=> Ans - (A)

Question 79

For the following questions

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

A EHJ

B JML

C PSR

D VYX

Answer: A

Explanation:

(A) : E (+3 letters) = H (+2 letters) = J

(B) : J (+3 letters) = M (-1 letter) = L

(C) : P (+3 letters) = S (-1 letter) = R

(D) : V (+3 letters) = Y (-1 letter) = X

=> Ans - (A)

Question 80

For the following questions

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

- A Tomcat
- B Baby
- C Fawn
- D Cub

Answer: B

Explanation:

Tomcat, fawn and cub are young ones of animals, hence baby is the odd one out.

=> Ans - (B)

Question 81

For the following questions

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

- A 11
- B 17
- C 19
- D 21

Answer: D

Explanation:

11, 17 and 19 are prime number, hence 21 which is composite is the odd one.

=> Ans - (D)

Question 82

Arrange the following words as per order in the dictionary.

1. Patriot
2. Pastor
3. Patron
4. Pattern
5. Pastern

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

Answer: B

Explanation:

As per the dictionary,

= Pastern -> Pastor -> Patriot -> Patron -> Pattern

≡ 5,2,1,3,4

=> Ans - (B)

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Question 83

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

SCD, TEF, UGH, ?, WKL

A CMN

B VJI

C VIJ

D IJT

Answer: C

Explanation:

Expression : SCD, TEF, UGH, ?, WKL

The pattern followed is that first letter of the words are consecutive English alphabetical series. Also, the combination of second and the third letters forms alphabets of English series.

1st letter : S, T, U, V, W

2nd and 3rd letters : CD, EF, GH, IJ, KL

Thus, missing word = **VIJ**

=> Ans - (C)

Question 84

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

124, 235, 346, 457, ?

A 455

B 465

C 565

D 568

Answer: D

Explanation:

Expression : 124, 235, 346, 457, ?

The pattern followed is that each digit of the numbers forms consecutive natural numbers.

1st digit : 1, 2, 3, 4, 5

2nd digit : 2, 3, 4, 5, 6

3rd digit : 4, 5, 6, 7, 8

Thus, missing number = **568**

=> Ans - (D)

Question 85

F is the brother of A. C is the daughter of A. K is the sister of F, G is the brother of C. Who is the uncle of G?

- A A
- B C
- C K
- D F

Answer: D

Explanation:

C is the daughter of A and G is the brother of C,

=> C(female) and G(male) are children of A.

Also, F is the brother of A,

=> F is the uncle of C and G.

Note :- Third statement is redundant.

=> Ans - (D)

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Question 86

If Jhansi is 12 ahead in rank of Prabha, who ranks 15th from last, then how many students are there in the class if Jhansi ranks 4th in order of merit ?

- A 23
- B 27
- C 30
- D 31

Answer: C

Explanation:

Prabha's rank from last = 15th

=> Jhansi's rank from last = $15 + 12 = 27$ th

Also, Jhansi's rank from top = 4th

∴ Total number of students = $(27+4) - 1 = 31 - 1 = 30$

=> Ans - (C)

Question 87

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

ENVIRONMENT

- A ENTER
- B METRE
- C IRON

D MOMENTUM

Answer: D

Explanation:

The word ENVIRONMENT does not contain any 'U', and thus the word 'Momentum' cannot be formed.

=> Ans - (D)

Question 88

If 'BASKET' is written as 'TEKSAB' how can 'PILLOW' be written in that code?

A LOWPIL

B WOLLIP

C LOWLIP

D WOLPIL

Answer: B

Explanation:

'BASKET' is written as 'TEKSAB'

The pattern followed is that the word is written in reverse order.

Now, reverse of 'PILLOW' = 'WOLLIP'

=> Ans - (B)

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Question 89

If '+' means '-' and '-' means 'x', 'x' means '÷' and '÷' means '+' then $2 \div 6 \times 6 \div 2 = ?$

A 1

B 0

C 10

D 5

Answer: D

Explanation:

Expression : $2 \div 6 \times 6 \div 2 = ?$

$\equiv 2 + 6 \div 6 + 2$

$= 2 + 1 + 2 = 5$

=> Ans - (D)

Question 90

If $6 \times 9 \times 3 = 963$ and $4 \times 8 \times 5 = 845$, then $9 \times 4 \times 7 = ?$

A 974

B 479

C 497

D 749

Answer: C

Explanation:

The pattern followed is that concatenation operator is followed and the positions of first two letters are interchanged.

Eg = $6 \times 9 \times 3 = 963$

and $4 \times 8 \times 5 = 845$

Similarly, $9 \times 4 \times 7 = 497$

=> Ans - (C)

Question 91

Select the missing number from the given responses:

3	5	9
4	6	?
3	7	12
36	210	36

A 4

B 3

C $\frac{1}{3}$

D 1

Answer: C

Explanation:

In each column, the number at the end is obtained by multiplying the other three numbers.

Eg : $3 \times 4 \times 3 = 36$

and $5 \times 6 \times 7 = 210$

Similarly, $9 \times x \times 12 = 36$

=> $x = \frac{36}{108} = \frac{1}{3}$

=> Ans - (C)

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Question 92

Ashok went 8 kms south and turned west and walked 3 kms. Again he turned north and walked 5 kms. He took a final turn to east and walked 3 kms. In which direction was Ashok from the starting point?

A East

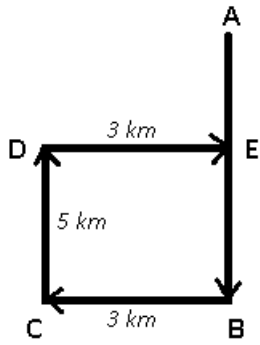
B North

C West

D South

Answer: D

Explanation:



Let Ashok started from point A and walked south for 8 km and reached point B, then he turned west and walked for 3 km before reaching C. After that, he he turned north and finally stopped at point E.

Thus, he is 3 km to the south of his initial position.

=> Ans - (D)

Question 93

Consider the given statement/s to be true and decide which of the given conclusions/assumptions can definitely be drawn from the given statement.

Statement:

Ahimsa should be basic principle of human beings.
All of us should practise Ahimsa.

Conclusions:

- I. We all know the real meaning of Ahimsa.
- II. Ahimsa promotes global harmony.

- A only conclusion I follows
- B only conclusion II follows
- C Neither I conclusion nor II follows
- D Both conclusion I & II follow

Answer: C

Explanation:

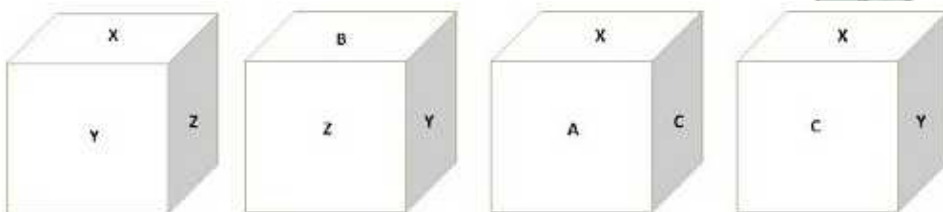
The two statements infer that everyone should practise Ahimsa, but neither do they indicate its meaning and nor do they provide information about global harmony.

Thus, neither conclusion I nor II follows.

=> Ans - (C)

Question 94

Of a cubical container, all the six faces have different markings indicating the position of the equipment packed inside. Which symbol is oppsite the face having C?



- A Z
- B B

C X

D Y

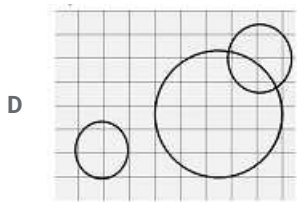
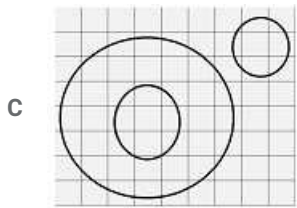
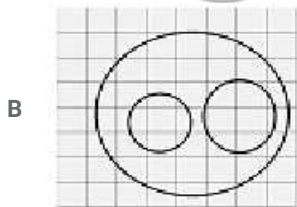
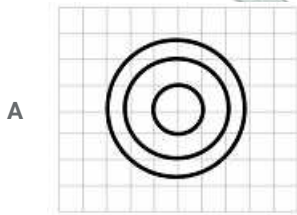
Answer: A

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Question 95

Identify the diagram that best represents the relationship among classes given below

Minutes, Days, Months



Answer: A

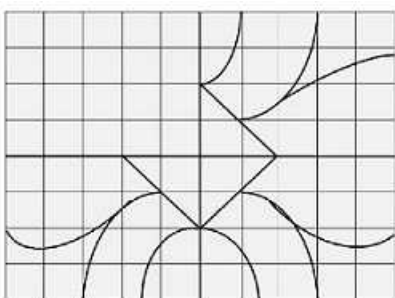
Explanation:

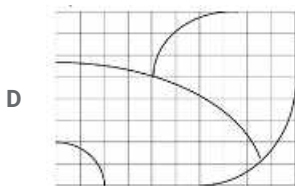
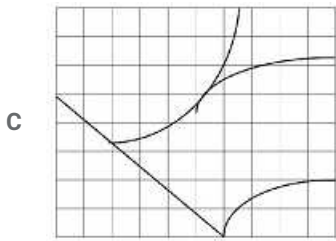
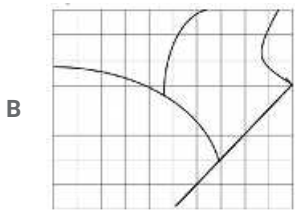
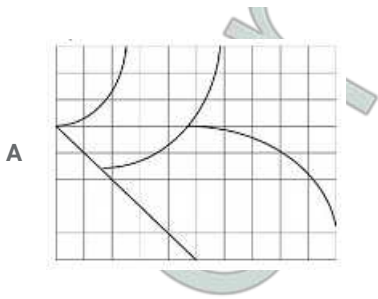
Days are formed by minutes and months by days, thus the first figure best describes above relationship.

=> Ans - (A)

Question 96

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

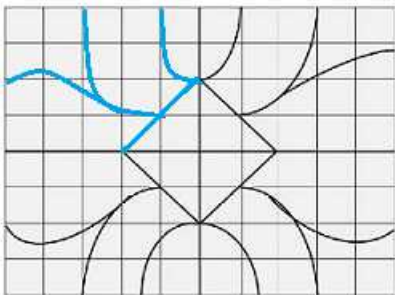




Answer: B

Explanation:

When we complete the above figure, we get :

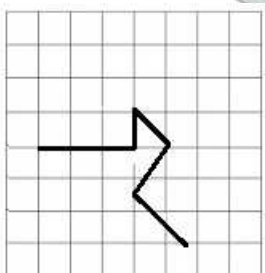


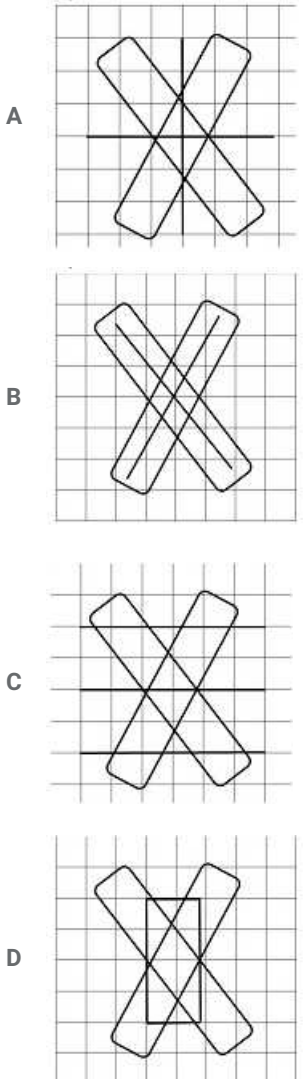
Now, the second figure resembles the above missing part in blue colour.

=> Ans - (B)

Question 97

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

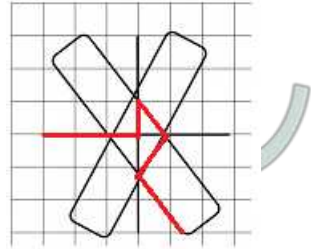




Answer: A

Explanation:

The question figure is embedded in the following figure :

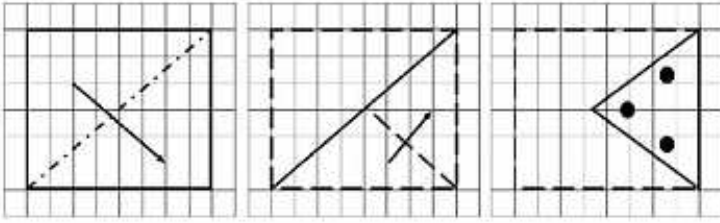


=> Ans - (A)

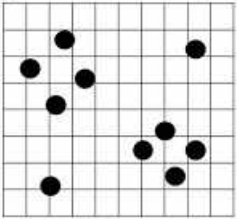
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Question 98

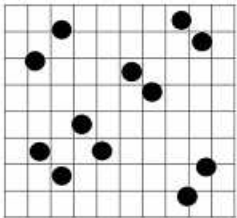
A piece of paper is folded and cut as shown below in the question figures. From the given answer figures, indicate how it will appear when opened



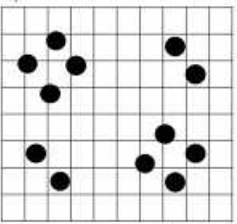
A



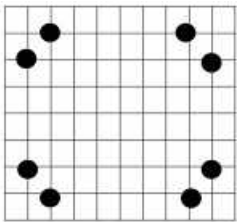
B



C



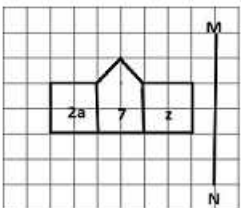
D

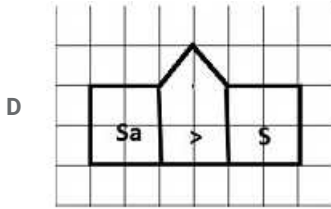
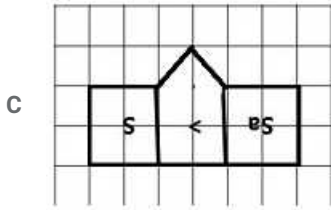
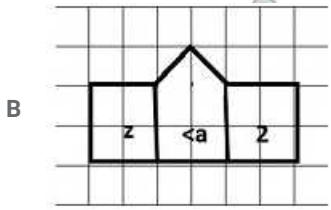
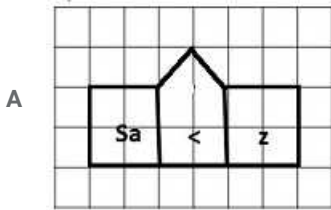


Answer: C

Question 99

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





Answer: B

Question 100

In the question, a word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. 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., G can be represented by 03, 12, etc., and 'L' can be represented by 57, 65, etc. Similarly you have to identify the set for the word 'DATE'

Matrix - I

	0	1	2	3	4
0	D	T	S	G	N
1	T	S	G	N	D
2	S	G	N	D	T
3	G	N	D	T	S
4	N	D	T	S	G

Matrix - II

	5	6	7	8	9
5	A	E	L	K	I
6	L	K	I	A	E
7	K	I	A	E	L
8	E	L	K	I	A
9	I	A	E	L	K

A 23, 68, 24, 97

B 14, 96, 11, 85

C 23, 96, 40, 85

D 32, 89, 10, 68

Answer: A

Explanation:

(A) : 23, 68, 24, 97 = DATE

(B) : 14, 96, 11, 85 = DASE

(C) : 23, 96, 40, 85 = DANE

(D) : 32, 89, 10, 68 = DATA

=> Ans - (A)

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