

SSC CPO 05 June 2016 Morning Shift

Reasoning

Instructions

For the following questions answer them individually

Question 1

In the following question, a series is given with one or more alphabet missing. Choose the correct alternative from the given options.
ACF, BEI, CGL, DIO, ?

- A EGJ
- B EKQ
- C EHL
- D EKR

Answer: D

Explanation:

Expression : ACF, BEI, CGL, DIO, ?

The pattern followed in each letter of the terms is :

1st letter : A (+1) = B (+1) = C (+1) = D (+1) = E

2nd letter : C (+2) = E (+2) = G (+2) = I (+2) = K

3rd letter : F (+3) = I (+3) = L (+3) = O (+3) = R

Thus, missing term : **EKR**

=> Ans - (D)

Question 2

In the following questions, a series is given with one or more terms missing. Choose the correct alternative from the given options.
Cube > Square > ?

- A Line
- B Triangle
- C Rectangle
- D Circle

Answer: A

Explanation:

Expression : Cube > Square > ?

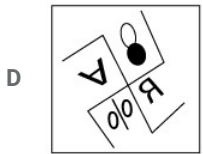
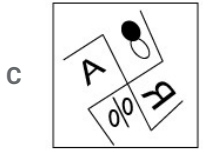
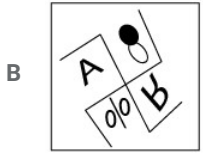
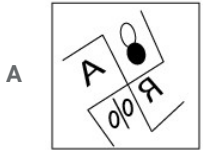
Cubes are made by combination of squares (6), similarly a square is a made of lines (4).

=> Ans - (A)

Question 3

In the following questions, a mirror is placed on the line MN, then which of the answers figures is the right images of the given figure ?

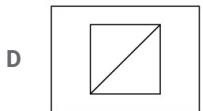
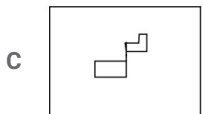
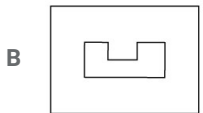
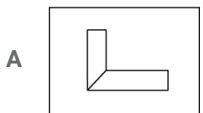
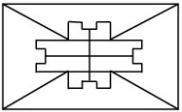




Answer: C

Question 4

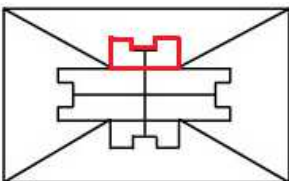
Which of the given answer figures is hidden in the question figure ?



Answer: B

Explanation:

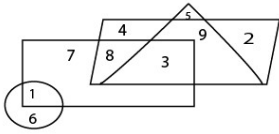
The above figure is represented by 'red' color and is hidden in :



=> Ans - (B)

Question 5

Study the given figure and answer the following question



- A 15
- B 13
- C 26
- D 14

Answer: A

Question 6

In the following question, a word is represented by only one set of numbers as given in any one of the alternatives. The set of numbers given in the alternatives are represented by two classes of alphabet as in two matrices given below. The columns and rows of Matrix A are numbered 0 to 4 and that of Matrix II are numbered 5 to 9. A letter from these matrices can be represented first by its row and then by its column, for example, P can be represented by 55, 69 etc. and L can be represented by 59, 68 etc. Similarly, you have to identify the set for the word MASTER.

Matrix - I

	0	1	2	3	4
0	S	M	A	R	T
1	M	A	R	T	S
2	A	R	T	S	M
3	R	T	S	M	A
4	T	S	M	A	R

Matrix - II

	5	6	7	8	9
5	P	E	R	I	L
6	E	R	I	L	P
7	R	I	L	P	E
8	I	L	P	E	R
9	L	P	E	R	I

- A 01, 43, 41, 04, 65, 44
- B 33, 11, 23, 41, 79, 98
- C 01, 43, 00, 42, 65, 44
- D 33, 11, 32, 03, 79, 98

Answer: A

Explanation:

- (A) : 01, 43, 41, 04, 65, 44 : MASTER
- (B) : 33, 11, 23, 41, 79, 98 : MASSER
- (C) : 01, 43, 00, 42, 65, 44 : MASMER
- (D) : 33, 11, 32, 03, 79, 98 : MASRER

=> Ans - (A)

Question 7

Select the odd letters from the given alternatives.

- A KMO
- B UXA

C CEG

D LNP

Answer: B

Explanation:

(A) : $K (+2) = M (+2) = O$

(B) : $U (+3) = X (+3) = A$

(C) : $C (+2) = E (+2) = G$

(D) : $L (+2) = N (+2) = P$

=> Ans - (B)

Question 8

Select the odd number-pair from the given alternatives.

A 36-145

B 16-63

C 91-363

D 64-255

Answer: A

Explanation:

Except the first option, the numbers are of the form $n : 4n - 1$

(A) : $(4 \times 36) - 1 = 143 \neq 145$

(B) : $(4 \times 16) - 1 = 63$

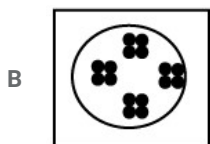
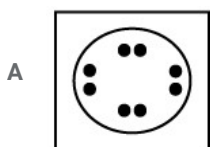
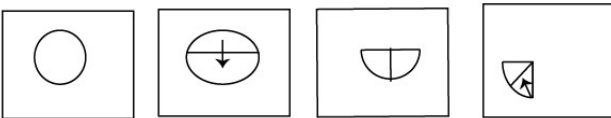
(C) : $(4 \times 91) - 1 = 363$

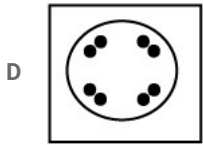
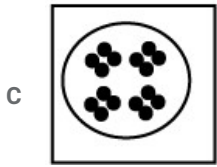
(D) : $(4 \times 64) - 1 = 255$

=> Ans - (A)

Question 9

A circular piece of paper is folded and punched as shown in the question figure. How will it appear when opened ?





Answer: B

Question 10

In the following question, a series is given with one or more word missing. Choose the correct alternatives from the given options.

Leaves, Twig, Branches, Trunk, ?

- A Soil
- B Roots
- C Fruits
- D Grass

Answer: B

Explanation:

Roots grow to develop trunk, Trunk gives rise to branches and twig. Leaves grow on twig.

Thus, the missing word is **roots**.

=> Ans - (B)

Question 11

Select the odd letters from the given alternatives.

- A AJDG
- B KTNQ
- C JMSP
- D UDXA

Answer: C

Explanation:

(A) : A (+9) = J (-6) = D (+3) = G

(B) : K (+9) = T (-6) = N (+3) = Q

(C) : J (+3) = M (+6) = S (-3) = P

(D) : U (+9) = D (-6) = X (+3) = A

=> Ans - (C)

Question 12

Select the related letters from the given alternatives.

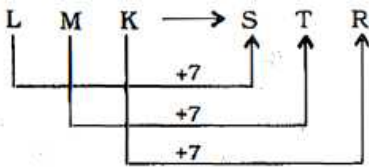
LMK : STR :: IJH : ?

- A QSR
- B SUT
- C ZAY
- D ADC

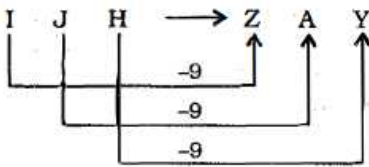
Answer: C

Explanation:

Expression = LMK : STR :: IJH : ?



There is uniform distance between the letters, this is possible only in IJH : ZAY



=> Ans - (C)

Question 13

Select the missing number from the given responses.

- 8 5 4
- 7 6 8
- 12 20 12
- 44 10 ?

- A 40
- B 30
- C 20
- D 35

Answer: C

Explanation:

The pattern followed in each column is :

1st : $(8 \times 7) - 12 = 44$

2nd : $(5 \times 6) - 20 = 10$

3rd : $(4 \times 8) - 12 = 20$

=> Ans - (C)

Question 14

Select the odd word from the given alternatives

- A Green

- B Black
- C Laterite
- D Alluvial

Answer: A

Explanation:

Black, Laterite and Alluvial represent different types of soils. Thus, **green** (a colour) is different from the other three.

=> Ans - (A)

Question 15

Select the related letters from the given alternatives.

PRT : QSU :: VXZ : ?

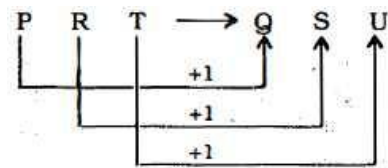
- A WYB
- B WYA
- C ACE
- D VYB

Answer: B

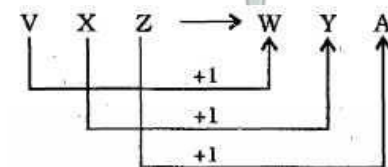
Explanation:

Expression = PRT : QSU :: VXZ : ?

The pattern followed is :



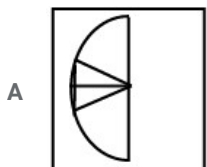
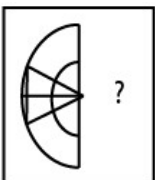
Similarly, for VXZ : WYA

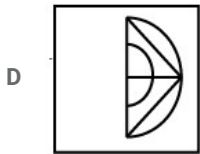
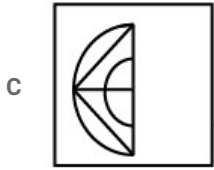


=> Ans - (B)

Question 16

Find the answer figure which will complete the pattern in the question figure.





Answer: B

Explanation:

The answer image must have two vertical concentric semi circles, thus the first option is eliminated.

Also, it will have a triangle, with one vertex at the centre and the other two vertices at the circumference (not at the ends of diameter), hence the last two options are also not possible.

=> Ans - (B)

Question 17

The set of numbers below follows a particular pattern. Which of the numbers in the options does not follow the pattern?

Number set:

60, 120, 210, 336, 1716

A 720

B 990

C 504

D 1310

Answer: D

Explanation:

The sum of digits in the numbers are multiples of 3

$$60; 6 + 0 = 6$$

$$120; 1 + 2 + 0 = 3$$

$$210; 2 + 1 + 0 = 3$$

$$336; 3 + 3 + 6 = 12$$

$$1716; 1 + 7 + 1 + 6 = 15$$

Similarly, sum of digits 720, 990 and 504 is also divisible by 3.

But 1310; $1 + 3 + 1 + 0 = 4$ is not divisible by 3.

=> Ans - (D)

Question 18

If $x \% y = y^2 - x^2$, $x \div y = x \div y^2$, $x \# y = 2xy$, then value of $\{(13 \% 5) \# 6\} \# 15$ is

- A 480
- B 720
- C -360
- D -120

Answer: D

Explanation:

Expression : $\{(13 \div 5) \times 6\} \times 15$

$$\equiv [(5^2 - 13^2) \div 6^2] \times 2 \times 15$$

$$= [(25 - 169) \div 36] \times 30$$

$$= \frac{-144}{36} \times 30$$

$$= -4 \times 30 = -120$$

=> Ans - (D)

Question 19

Six friends are sitting in a circle and are facing the centre of the circle. Runa, Charu and Pari are females. Varun, Manu and Prakash are males. Manu is between Varun and Prakash, Charu is between Pari and Runa. Varun and Pari are opposite to each other. Person sitting to the right of Runa is male. Who is sitting just right to Prakash ?

- A Manu
- B Charu
- C Pari
- D Varun

Answer: C

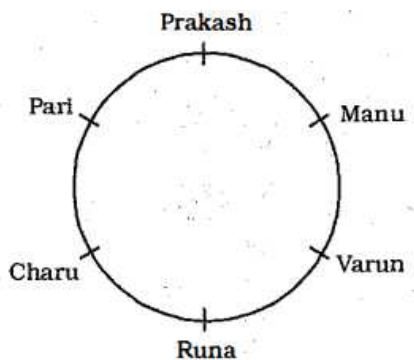
Explanation:

Charu is between Pari and Runa, also person sitting to the right of Runa is male, => Pari is sitting to the immediate left of Charu and Runa to the immediate right of Charu.

Varun and Pari are opposite to each other, => Varun is sitting to the immediate right of Runa.

Manu is between Varun and Prakash, => Manu is sitting to the immediate right of Varun and Prakash is sitting opposite to Runa.

Hence, final arrangement :



Thus, **Pari** is sitting just right to Prakash.

=> Ans - (C)

Question 20

If \div means $+$, $+$ means \times , \times means $-$ and $-$ means \div , then what is the value of :
 $[(1440 - 36 \times 16) + 15] + 5 \div (144 - 12) + 25 = ?$

- A 1500
- B 2100
- C 1200
- D 4800

Answer: B

Explanation:

$+$ \Rightarrow $+$	$+$ \Rightarrow \times
\times \Rightarrow $-$	$-$ \Rightarrow \div

Expression : $[(1440 - 36 \times 16) + 15] + 5 \div (144 - 12) + 25 = ?$

$$\equiv [(1440 \div 36 - 16) \times 15] \times 5 + (144 \div 12) \times 25$$

$$= [(40 - 16) \times 15] \times 5 + (12 \times 25)$$

$$= (360 \times 5) + 300$$

$$= 1800 + 300 = 2100$$

\Rightarrow Ans - (B)

Question 21

In the following question, a series is given with one or more alphabet missing. Choose the correct alternative from the given options.
A, ?, I, O, ?

- A D, T
- B F, V
- C E, U
- D C, W

Answer: C

Explanation:

Expression : A, ?, I, O, ?

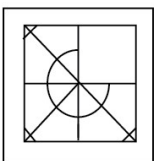
The above series is the combination of vowels.

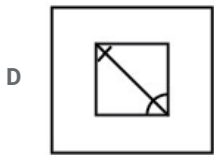
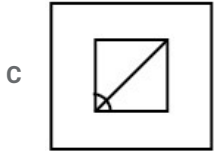
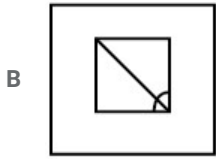
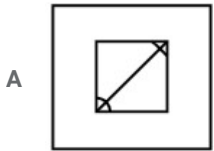
Hence, missing vowels = E, U

\Rightarrow Ans - (C)

Question 22

Find the answer figure which will complete the pattern in the question figure.

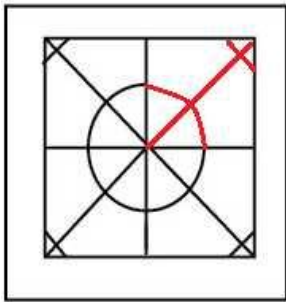




Answer: A

Explanation:

The question figure will be completed by :



=> Ans - (A)

Question 23

Select the odd number from the given alternatives.

A 169

B 196

C 255

D 289

Answer: C

Explanation:

Except 255, all other perfect squares.

$(13)^2 = 169$, $(14)^2 = 196$ and $(17)^2 = 289$

=> Ans - (C)

Question 24

The set of alphabets below follows a particular pattern. Which option does not follow the pattern ?

Alphabet set:

AE, GK, YC, MQ

A XB

B WZ

C RV

D LP

Answer: B

Explanation:

The pattern followed is :

A $\xrightarrow{+4}$ E

G $\xrightarrow{+4}$ K

Y $\xrightarrow{+4}$ C

M $\xrightarrow{+4}$ Q

X $\xrightarrow{+4}$ B

R $\xrightarrow{+4}$ V

L $\xrightarrow{+4}$ P

(A) : X (+4) = B

(B) : W (+3) = Z

(C) : R (+4) = V

(D) : L (+4) = P

=> Ans - (B)

Question 25

In a certain language "REKHA" is written as "NOPST", "RESHAM" is written as "NOHSTQ" and "SHYAM" is written as "HSLTQ". What will be "SHAME" written as ?

A SHQTO

B HSTQO

C HSTOQ

D SHQOT

Answer: B

Explanation:

The codes for each letter is given :

S -> H

H -> S

A -> T

M -> Q

E -> O

Thus, SHAME : HSTQO

=> Ans - (B)

Question 26

In the following question, a word is represented by only one set of numbers as given in any one of the alternatives. The set of numbers given in the alternatives are represented by two classes of alphabet as in two matrices given below. The columns and rows of Matrix I are numbered 0 to 4 and that of Matrix II are numbered 5 to 9. A letter from these matrices can be represented first by its row and then by its column, for example, C can be represented by 55, 69 etc. and D can be represented by 59, 68 etc. Similarly, you have to identify the set for the word given in the question. **ROUND**

	0	1	2	3	4
0	B	N	R	T	H
1	N	R	T	H	B
2	R	T	H	B	N
3	T	H	B	N	R
4	H	B	N	R	T

	5	6	7	8	9
5	C	L	O	U	D
6	L	O	U	C	D
7	O	U	D	C	L
8	U	D	C	L	O
9	D	C	L	O	U

- A 02, 57, 67, 23, 95
- B 34, 66, 58, 33, 95
- C 20, 56, 99, 33, 77
- D 11, 75, 59, 42, 86

Answer: B

Explanation:

- (A) : 02, 57, 67, 23, 95 : ROUBD
 - (B) : 34, 66, 58, 33, 95 : **ROUND**
 - (C) : 20, 56, 99, 33, 77 : RLUND
 - (D) : 11, 75, 59, 42, 86 : RODND
- => Ans - (B)

Question 27

Two statements are given, followed by two conclusions, You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any follow from the given statements.

Statements:

No pencil is eraser

All erasers are sharpeners

Conclusions:

I. All sharpeners are pencils

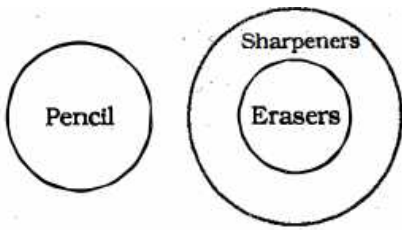
II. All sharpeners are erasers

- A Only conclusions I follows
- B Only conclusion II follows
- C Either conclusion I or conclusion II follows
- D Neither conclusion I nor conclusion II follows

Answer: D

Explanation:

The venn diagram for above statements is :



Conclusions :

I : All sharpeners are pencils = false

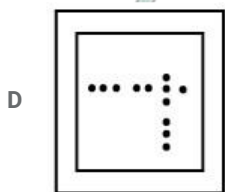
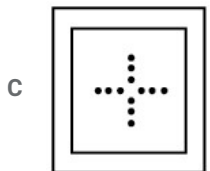
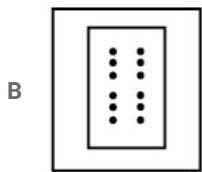
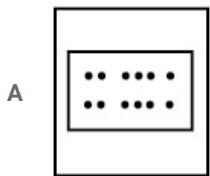
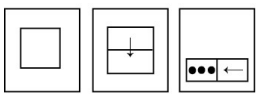
II : All sharpeners are erasers = false

Thus, neither conclusion I nor conclusion II follows.

=> Ans - (D)

Question 28

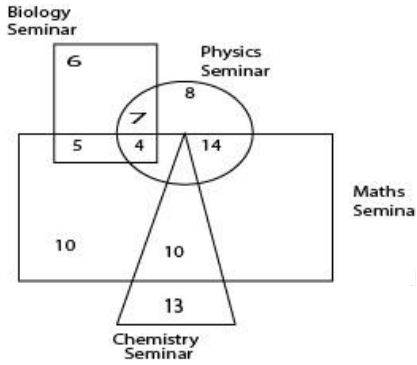
A square sheet of paper is folded and punched as shown in the question figures. You have to figure out from amongst the four answer figures how it will appear when unfolded.



Answer: A

Question 29

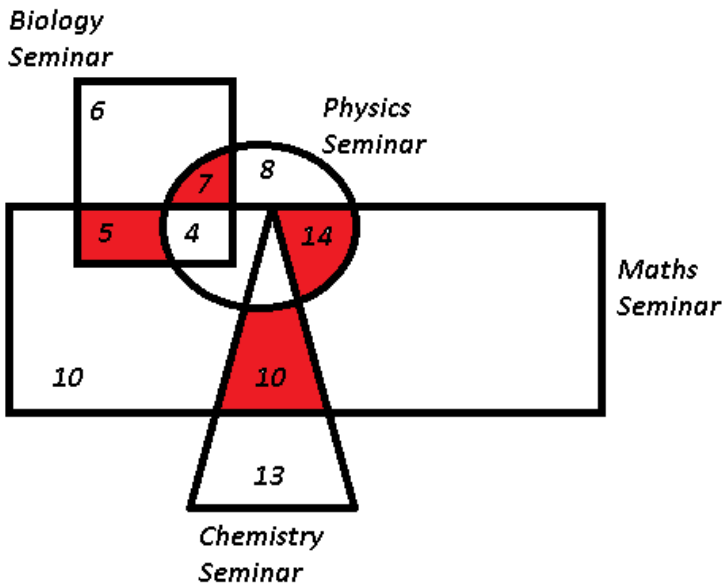
The Venn diagram below who attended seminars on Physics, Chemistry, Maths and Biology. What is the number of people who attended exactly any two seminars?



- A 21
- B 36
- C 38
- D 42

Answer: B

Explanation:



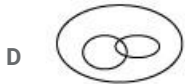
Number of people who attended exactly any two seminars = $7 + 5 + 14 + 10 = 36$

=> Ans - (B)

Question 30

Which of the following represents the relationship between Science, Biology and Zoology ?

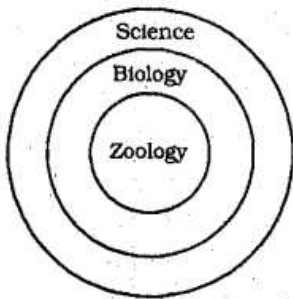




Answer: A

Explanation:

Zoology is a part of Biology and, in turn, Biology is a branch of Science. Hence the venn diagram that best describes above relationship is :



=> Ans - (A)

Question 31

In the following question, a series is given with one or more number (s) missing. Choose the correct alternative from the given options.
0.2, 0.16, 0.072, 0.0256, ?

A 0.0016

B 0.004

C 0.00512

D 0.008

Answer: D

Question 32

Select the related word from the given alternatives.

Colour : Red :: Language : ?

A Grammar

B English

C Lingual

D History

Answer: B

Explanation:

The second term is a type of the first. Red is a colour. Similarly, **English** is a language.

=> Ans - (B)

Question 33

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

A TREND

B THERMAL

C MODERN

D RANDOM

Answer: B

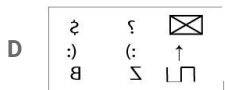
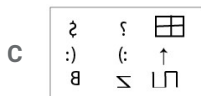
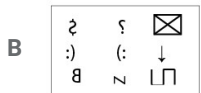
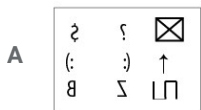
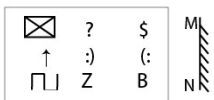
Explanation:

The word GRANDMOTHER does not contain any 'L', thus the term **Thermal** cannot be formed.

=> Ans - (B)

Question 34

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



Answer: D

Explanation:

A vertical mirror is placed, so the object on the left will appear right in reverse position and vice-versa.

So the square with 'X' sign at top left will now appear at top right, thus the third option will be eliminated. Also, the arrow underneath it will still face upwards, and thus the second option is also eliminated.

Also, in the question figure, in the middle row, at rightmost side, '(' will be changed to ')', hence fourth option is the right image.

=> Ans - (D)

Question 35

Two statements are given followed by two conclusions. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any follows from the given statements.

Statements:

Some monkeys are dogs.

All dogs are cats.

Conclusions:

I. Some monkeys are cats

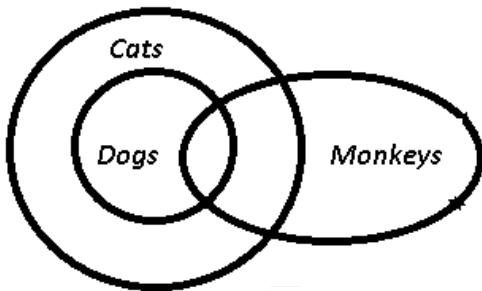
II. No dog is cat

- A Only conclusion I follows
- B Only conclusion II follows
- C Either conclusion I nor conclusion II follows
- D Neither conclusion I nor conclusion II follows

Answer: A

Explanation:

The venn diagram for above statements is :



Conclusions:

I. Some monkeys are cats = true

II. No dog is cat = false

Thus, only conclusion I follows.

=> Ans - (A)

Question 36

In a certain code language ABSOLUTE is written as ESBLOTUA. How will CALENDAR to written in that code language ?

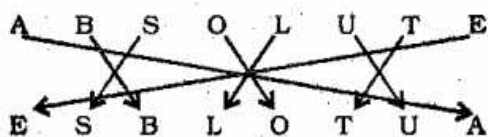
- A RLAENADC
- B RLANEADC
- C RALNEADC
- D RANLAEDC

Answer: B

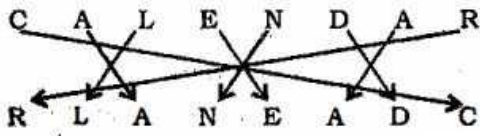
Explanation:

ABSOLUTE is written as ESBLOTUA

The pattern followed is :



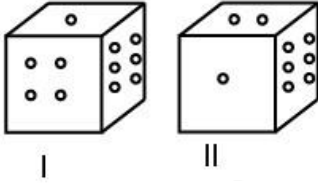
Similarly, CALENDAR : RLANEADC



=> Ans - (B)

Question 37

In the diagrams below, faces of dice are shown from two different directions. Which number will be opposite to 4 ?



A 2

B 3

C 1

D 5

Answer: A

Explanation:

It is clear from the two views of the same dice that from first figure to second figure, the dice has been rotated downward. Therefore, the number 2 lies opposite the number 4.

=> Ans - (A)

Question 38

Select the related word from the given alternatives.

Baking : Bread :: ? : Curd

A Brewing

B Coagulation

C Fermentation

D Boiling

Answer: C

Explanation:

Bread is prepared by baking the dough. Similarly, curd is manufactured by the **fermentation** of milk.

=> Ans - (C)

Question 39

Mr. A travelled from a point 'X' straight towards east at a distance 80 m. He turned to his right and walked 40 m. He again turned to his right and again walked 80 m. He then turned his left and walked 20 m and took left and again walked 80m. Now he turned towards his left and walked 60 m and stopped. How far and in which direction is he from the starting point 'X' ?

A 80 m towards North

B 60 m towards East

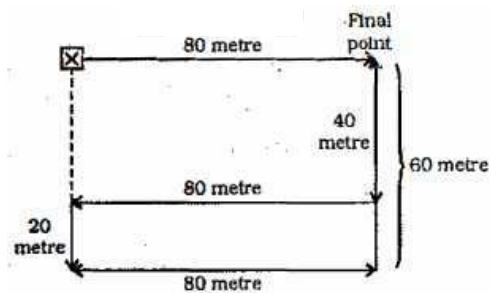
C 80 m towards West

D 80 m towards East

Answer: D

Explanation:

Mr. A started from point X and travelled 80 m towards east, his entire movement is shown by :



Thus, his final position is 80 m towards East from his starting point.

=> Ans - (D)

Question 40

In the following question, a series is given with one or more number (s) missing. Choose the correct alternative from the given options.
7, 51, 8, 65, 9, ?

A 79

B 80

C 81

D 82

Answer: C

Explanation:

The pattern followed is :

$$(7)^2 + 2 = 51$$

$$(8)^2 + 1 = 65$$

$$(9)^2 + 0 = 81$$

=> Ans - (C)

Question 41

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

A STARDOM

B TRAITOR

C DORMANT

D MINISTER

Answer: D

Explanation:

The word ADMINISTRATORS does not contain any 'E', thus the term **Minister** cannot be formed.

=> Ans - (D)

Question 42

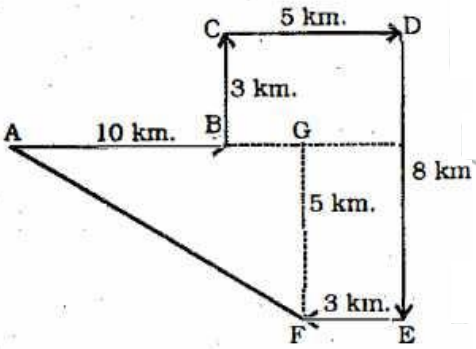
Rahul travels 10 km towards East, then he takes left turn and travels 3 km. He then takes right turn and travels 5 km, he again takes right turn and travels 8 km and finally takes right turn one more time and travels 3 km. How far is he from his starting point and in which direction ?

- A 12 km towards South-East
- B 13 km towards North-West
- C 12 km towards North-West
- D 13 km towards South-East

Answer: D

Explanation:

Let Rahul start from point A and travels 10 km towards East to reach point B, then he takes left turn and travels 3 km towards north point C. He then takes right turn and travels 5 km and reaches D, he again takes right turn and travels 8 km south to reach point E and finally takes right turn one more time and travels 3 km to stop at point F.



Thus, distance $(AF)^2 = (AG)^2 + (GF)^2$

=> $(AF)^2 = (12)^2 + (5)^2$

=> $(AF)^2 = 144 + 25 = 169$

=> $AF = \sqrt{169} = 13$

∴ Rahul is **13 km towards South-East** from his starting position.

=> Ans - (D)

Question 43

If + means x, - means ÷, x means ÷, ÷ means -, then what is the value of $50 + 10 - 50 \times 10 \div 125$?

- A 380
- B 56
- C 180
- D -125

Answer: A

Explanation:

Expression : $50 + 10 - 50 \times 10 \div 125$?

$\equiv 50 \times 10 + 50 \div 10 - 125$

$$= (50 \times 10) + \binom{50}{10} - 125$$

$$= 500 + 5 - 125 = 380$$

=> Ans - (A)

Question 44

If $34 = 39304$, $27 = 19683$, then $13 = ?$

A 2197

B 10648

C 56743

D 17576

Answer: A

Explanation:

The number on the right is the cube of first number.

$$(34)^3 = 39304$$

$$(27)^3 = 19683$$

$$(13)^3 = 2197$$

=> Ans - (A)

Question 45

Select the odd word from the given alternatives ?

A Cardiology

B Psychology

C Neurology

D Nephrology

Answer: B

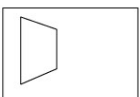
Explanation:

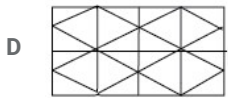
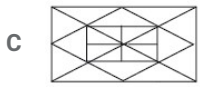
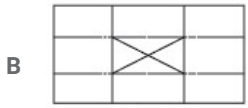
Except Psychology, all others are related to medical science. Psychology is related with study of mind.

=> Ans - (B)

Question 46

Find out the correct alternatives figure which contains the given question figure.

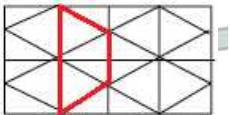




Answer: D

Explanation:

The above figure is represented by 'red' color and is hidden in :



=> Ans - (D)

Question 47

Select the related letters from the given alternatives.

YAC: CEG :: NOQ: ?

A RSU

B RUS

C STV

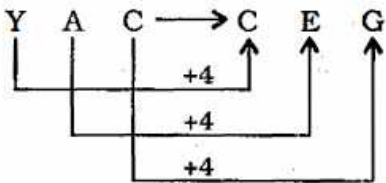
D SVT

Answer: A

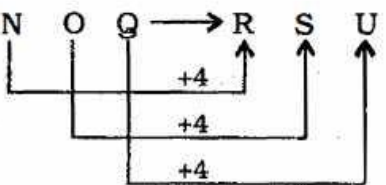
Explanation:

Expression = YAC: CEG :: NOQ: ?

The pattern followed is :



Similarly, for NOQ : RSU



=> Ans - (A)

Question 48,

In the following question, a series is given in which one or more alphabet is missing. Choose the correct alternatives from the given options.

ADC, EHC, ILK, ?

A MNO

B MPO

C MON

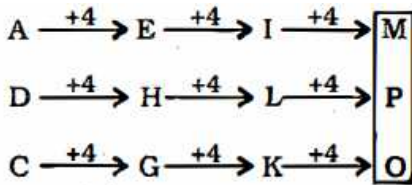
D MPQ

Answer: B

Explanation:

Expression : ADC, EHC, ILK, ?

The pattern followed in each letter of the terms is :



Thus, missing term = MPO

=> Ans - (B)

Question 49

Select the odd number from the given alternatives.

A 95

B 145

C 114

D 152

Answer: B

Explanation:

Except 145, all other numbers are multiples of 19.

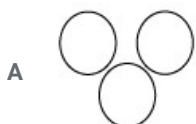
$19 \times 5 = 95$, $19 \times 6 = 114$ and $19 \times 8 = 152$

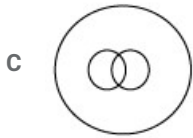
=> Ans - (B)

Question 50

Which of the following Venn diagrams represents the given information ?

Sea, Fish, Boat

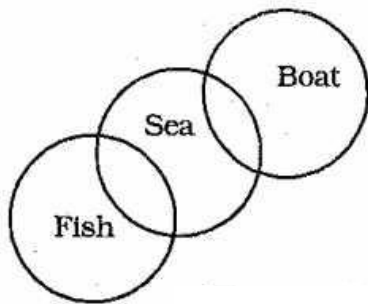




Answer: D

Explanation:

Fish is different from boat, but both can be found in sea. Hence, the venn diagram that best describes above relationship is :



=> Ans - (D)

English

Instructions

In the following question, a part of the sentence is printed in bold. Below are given alternatives to the bold part which may improve the sentence. Choose the correct alternative. In case no improvement is required. Choose "No Improvement" option.

Question 51

It is normal part of growth and development for a young child to be wary with **strangers**.

- A of
- B from
- C at
- D No improvement

Answer: A

Instructions

Choose the word opposite in meaning to the given word.

Question 52

Pliable

- A rigid
- B friendly
- C flexible
- D applicable

Answer: A

Instructions

In the following question, a part of the sentence is printed in bold. Below are given alternatives to the bold part which may improve the sentence. Choose the correct alternative. In case no improvement is required, choose "No Improvement" option.

Question 53

She told me she has a headache.

- A had
- B is having
- C will have
- D No improvement

Answer: A

Instructions

In the following question, some part of the sentence has errors and some are correct. Find out of which part of the sentence has an error and choose corresponding to the appropriate option. If sentence is free from error choose corresponding to "No Error".

Question 54

The scissors, which (1)/ are on the table, (2)/ belongs to Radha (3)/ No error (4)

- A The scissors, which
- B are on the table,
- C belongs to Radha
- D No error

Answer: C

Instructions

For the following questions answer them individually

Question 55

A sentence is given with blanks to be filled in with appropriate words. Four alternatives are suggested. Choose the correct alternative out of the four. Mr. Naimi, the chief secretary, was unceremoniously_____after party's_____ defeat in general elections.

- A exiled, predictable

- B ousted, disastrous
- C recommended, unexpected
- D honoured, stupendous

Answer: B

Question 56

Four alternatives are given for the Idiom/Phrase printed in bold. Choose the alternatives which best expresses the meaning of Idiom/Phrase.

To beat the rap

- A to destroy stereotypes
- B to be more successful than others
- C to be acquitted of a crime
- D to involve someone in a crime

Answer: C

Question 57

In the following question, some part of the sentence has errors and some are correct. Find out of which part of a sentence has an error and choose corresponding to the appropriate option. If the sentence is free from error choose corresponding to 'No Error'.

My brother, along with his friends, have gone to watch a movie at the nearest cinema hall.

- A at the nearest cinema hall
- B My brother, along with his friends
- C have gone to watch a movie
- D No Error

Answer: C

Question 58

In the following question, a part of the sentence is printed in bold. Below are given alternatives to the bold part which may improve the sentence. Choose the correct alternative. In case no improvement is required, choose "No Improvement" option.

Finished my homework, I went out to play.

- A The work was finished
- B Homework completed
- C Having completed my homework
- D No improvement

Answer: C

Question 59

Four words are given, out of which only one word is correctly spelt. Find the correctly spelt word.

- A heirachy
- B hierarchy
- C heirarchy
- D hairarrchy

Answer: B

Question 60

Four words are given, out of which only one word is correctly spelt. Find the correctly spelt word.

- A liaison
- B liason
- C laison
- D liaizon

Answer: A

Question 61

Out of the four alternatives, choose the one which best expresses the meaning of the given word.

Altruistic

- A hostile
- B outdated
- C selfish
- D philanthropic

Answer: D

Question 62

A sentence is given with blanks to be filled in with appropriate words. Four alternatives are suggested. Choose the correct alternative out of the four.

The king plans to move the kingdom away from ___ domestic energy consumption, a change that will allow the Saudis to ___ oil exports in the years to come.

- A extravagant. Decrease
- B wasteful. Increase
- C unnecessary. Minimize
- D substantial. moderate

Answer: B

Question 63

A sentence is given with blanks to be filled in with appropriate words. Four alternative out of the four.

I ___ his contribution to my book ___ it was substantial.

- A admitted; although
- B confessed to; but
- C debunked; and
- D acknowledged; because

Answer: D

Question 64

Out of the four alternatives, choose the one which best expresses the meaning of the given word.
Arcane

- A ancient
- B new
- C simple
- D mysterious

Answer: D

Question 65

Out of the four alternatives, choose the one which can be substituted for the given words/sentence.
To send someone back to his or her own country

- A Extirpate
- B Repatriate
- C Expropriate
- D Exile

Answer: B

Question 66

Out of the four alternatives, choose the one which can be substituted for the given words/sentence.
A person of great learning in several languages.

- A Polycarp
- B Polyglot
- C Polychrome
- D Polymath

Answer: B

Question 67

Four alternatives are given for the Idiom/Phrase printed in bold. Choose the Alternative which best expresses the meaning of Idiom/Phrase.

The team captain was at **sixes and sevens** regarding his winning strategy.

- A careless
- B confident
- C confused
- D courageous

Answer: C

Question 68

Four alternatives are given for the Idiom/Phrase printed in bold. Choose the alternative which best expresses the meaning of Idiom/Phrase.

Many of us have seen the dog who is full of beans outside the ring but, after stepping across the threshold of the ring, walks as if his feet are made of lead.

- A successful
- B popular
- C lacks energy
- D energetic

Answer: D

Question 69

Four words are given, out of which only one word is correctly spelt. Find the correctly spelt word.

- A rhapsodic
- B rapsodic
- C rapcodic
- D rapsodich

Answer: A

Question 70

Out of the four alternatives, choose the one which best expresses the meaning of the given word.

Contrite

- A concise
- B regretful
- C compassionate
- D unapologetic

Answer: B

Question 71

A sentence is given with blanks to be filled in with appropriate words. Four alternatives are suggested. Choose the correct alternative out of the four.

He is _____ rich, yet he _____ about high taxes.

- A obscenely; whines
- B very; is careless
- C newly; is calm
- D not; worries

Answer: A

Question 72

Out of the four alternatives choose the one which best expresses the meaning of the given word.

Bashful

- A shy
- B extrovert
- C courageous
- D broad-minded

Answer: A

Instructions

Out of the four alternatives, choose the one which can be substituted for the given words/sentences.

Question 73

One who hates people.

- A Misandrist
- B Misologist
- C Misanthrope
- D Misogynist

Answer: C

Question 74

A person with strong desire to steal.

- A Nelomania
- B Kleptomania
- C Kosmomania

D Melomania

Answer: B

Question 75

Four words are given, out of which only one word is correctly spelt. Find the correctly spelt word.

A challenge

B chalenge

C challenge

D chalange

Answer: C

Instructions

In the following questions, some parts of the sentences have errors and part of a sentence has an error and choose corresponding to the appropriate option. If a sentence is free from error choose corresponding to 'No Error' option.

Question 76

The teachers, who I worked with, were very insensitive towards children's needs.

A The teachers, who I worked with

B were very insensitive

C towards children's needs

D No Error

Answer: A

Question 77

Bradbury, one of the most versatile writer ever lived, was a school dropout.

A Bradbury, one of the most

B versatile writer ever lived,

C was a school dropout.

D No Error

Answer: B

Instructions

For the following questions answer them individually

Question 78

Choose the word opposite in meaning to the given word.

Alacrity

A liveliness

- B indifference
- C promptness
- D doubt

Answer: B

Question 79

Out of the four alternatives, choose the one which can be substituted for the given words.
To renounce one's throne

- A Abdicate
- B Arrogate
- C Abstain
- D Abrogate

Answer: A

Question 80

Out of the four alternatives, choose the one which best expresses the meaning of the given word.
Belligerent

- A peaceful
- B noisy
- C hostile
- D cautious

Answer: C

Question 81

In the following questions, a part of the sentence is printed in bold. Below are given alternatives to the bold part which may improve the sentence. Choose the correct alternative. In case no improvement is required, choose "No Improvement" option.

We waited in six option.

- A within
- B for
- C during
- D No improvement

Answer: B

Question 82

In the following questions, some part of the sentence has errors and some are correct. Find out of which part of the sentence has an error and choose corresponding to the appropriate option. If a sentence is free from error choose corresponding to 'No Error' option. Each of the girls in my class sing well.

- A Each of the girls
- B sing well
- C in my class
- D No Error

Answer: B

Question 83

In the following questions, a part of the sentence is printed in bold. Below are given alternatives to the bold part which may improve the sentence. Choose the correct alternative. In case no improvement is required, choose "No Improvement" option.

- A go
- B had gone
- C gone
- D No improvement

Answer: D

Question 84

A sentence is given with blanks to be filled in with an appropriate word. Four alternatives are suggested. Choose the correct alternative out of the four.

A BBC reporter was ____ for what North Korea deemed a disrespectful portrayal of the country and its leader.

- A welcomed
- B recognized
- C celebrated
- D expelled

Answer: D

Question 85

Four words are given, out of which only one word is correctly spelt. Find the correctly spelt word.

- A rambunktious
- B rumbanctious
- C rambuncsious
- D rambunctious

Answer: D

Instructions

Four alternatives are given for the Idiom/Phrase printed in bold. Choose the alternative which best expresses the meaning of Idiom/Phrase.

Question 86

The only good news in this tale is that Hinson, who could be an all hat and no cattle poster boy, ultimately lost his job.

- A one who puts others in trouble
- B one who is hardworking
- C one who doesn't want to spend his own money
- D one who is full of big talk but lacks substance and action

Answer: D

Question 87

At twenty, he was already going as bald as a cue ball.

- A partially bald
- B not bald
- C completely bald
- D crazy

Answer: C

Instructions

For the following questions answer them individually

Question 88

Choose the word opposite in meaning to the given word.

Impeccable

- A perfect
- B rude
- C inexact
- D predict

Answer: C

Instructions

In the following passage some of the words have been left out. Read the passage carefully and choose the correct answer to each question out of the four alternatives and fill in the blanks.

The Dalmatian of the sole surviving (semi-) speaker, Tuone Udaina, was surveyed in the late 1870s and again towards the end of his life in the late 1890s. These fairly extensive records curiously suggest that a systematic 189 change took place in those two decades such that by the 1980s the distinction between present and imperfect indicative had largely been neutralized (a development unique among Romance languages) in favour of the imperfect tense forms. I argue that the data are authentic and that the change, whether it occurred just in Udaina's head or was already underway in the last years of Dalmatian as a spoken language, is purely 'internal' and not 190 by contact with other languages. I explore its internal mechanisms and show that what is involved is a kind of analogical form-meaning levelling whose signatum is an 'empty' element of 191 structure. Reinforcement of this essentially 'nonsensical' 192 of paradigmatic

structure constitutes further evidence for my general view that intrapadigmatic coherence may be no less important than extra morphological transparency. It also suggests that such a development can as easily 193 in a dying language as anywhere else.

Question 89

- A morphological
- B misleading
- C nonsensical
- D common

Answer: A

Question 90

- A deters
- B motivated
- C encourages
- D restores

Answer: B

Question 91

- A vulnerable
- B paradigmatic
- C indifferent
- D unsuitable

Answer: B

Question 92

- A hazard
- B aberration
- C fluke
- D oddity

Answer: D

Question 93

- A occur
- B defy
- C ensured

D occurrence

Answer: A

Instructions

In the following questions, you have two passages with 5 questions in each passage. Read the passages carefully and choose the best answer top each question out of the four alternatives.

A dolphin is an aquatic mammal. Dolphins are extremely intelligent and sociable animals and have their own way to communicate with each other using special sounds.

Although they are often mistaken for fis, dolphins are actually mammals. They are members of the Cetacea (pronounced se-ayshia) family, which also contains whales and porpoises.

One way of telling the difference between a cetacean and a fish is by looking at their tails. You can tell a cetacean because their tail fins (called flukes) are horizontal and move up and down. Fish have vertical tails which move from side to side.

A dolphin's body is designed to help them move quickly and easily through water. On its back is a curved dorsal fin and on each side of the dolphin is a pectoral fin. The bump on a dolphins head is known as the melon. They trap their prey by using their teeth.

Dolphins use a type of sonar to detect where objects are around them. This is called echolocation. Echolocation works when a dolphin bounces a high pitched sound off an object and then listens for the echo to come back. It is a very useful way for dolphins to find food and navigate.

Dolphins communicate with each other through clicks, squeaks and whistles. They use these special sounds to greet each other and to indicate if they are in distress.

Dolphins live in the sea, but they can't breathe under water. They breathe through a blowhole and have to come up for air every 15 minutes.

Question 94

Cetacea does not include:

- A whales
- B sharks
- C dolphins
- D purposes

Answer: B

Question 95

To breathe dolphins use:

- A fins
- B echolocation
- C flippers
- D blowhole

Answer: D

Question 96

Dolphins use their teeth;

- A to eat their pray
- B to trap their prey

C to scare their prey

D for aesthetic purposes

Answer: B

Question 97

Which of these help dolphins to navigate through the water ?

A echolocation

B blowhole

C fluke

D smooth skin

Answer: C

Question 98

Dolphins use echolocation to

A breathe

B navigate

C communicate

D hunt

Answer: C

Question 99

Four words are given, out of which only one word is correctly spelt. Find the correctly spelt word.

A Lucious

B Luscious

C Lucsious

D Luscioucs

Answer: B

Question 100

Out of the four alternatives, choose the one which best expresses the meaning of the given word.

A Different

B Identical

C Parallel

D Unfit

Answer: B

Quant

Instructions

For the following questions answer them individually

Question 101

Find the value of $8 \cos 10^\circ \cos 20^\circ \cos 40^\circ$

A $\tan 80^\circ$

B $\tan 10^\circ$

C $\tan 80^\circ$ or $\cot 10^\circ$

D None of these

Answer: C

Explanation:

Expression : $8 \cos 10^\circ \cos 20^\circ \cos 40^\circ$

Multiply $\sin(10^\circ)$ in numerator and denominator.

$$= (2 \sin 10^\circ \cos 10^\circ) \times (4 \cos 20^\circ \cos 40^\circ) \times \frac{1}{\sin 10^\circ}$$

Similarly,

$$= (2 \sin 10^\circ \cos 10^\circ) \times (2 \sin 20^\circ \cos 20^\circ) \times (2 \sin 40^\circ \cos 40^\circ) \times \frac{1}{\sin 10^\circ \sin 20^\circ \sin 40^\circ}$$

Using, $2 \sin A \cos A = \sin 2A$

$$= (\sin 20^\circ) \times (\sin 40^\circ) \times (\sin 80^\circ) \times \frac{1}{\sin 10^\circ \sin 20^\circ \sin 40^\circ}$$

$$= \frac{\sin(80^\circ)}{\sin(10^\circ)}$$

Also, $\sin(90^\circ - \theta) = \cos \theta$

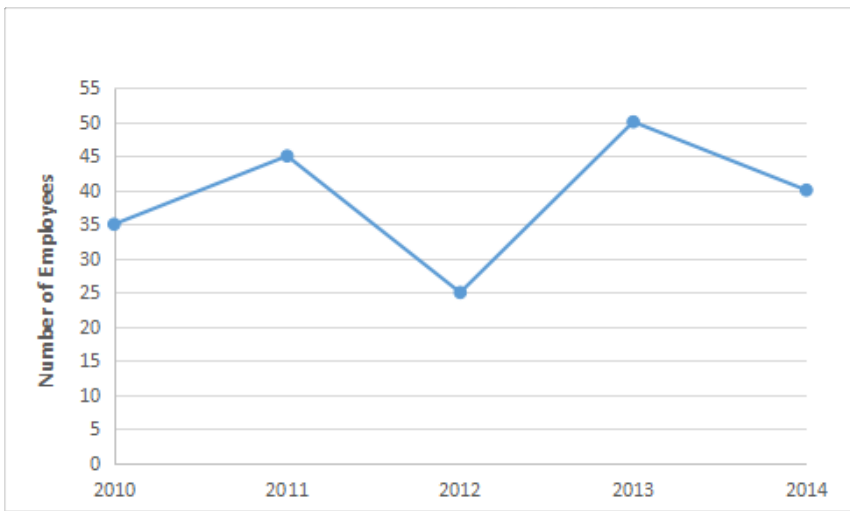
$$= \frac{\sin(90^\circ - 10^\circ)}{\sin(10^\circ)} = \frac{\cos 10^\circ}{\sin 10^\circ}$$

$$= \cot 10^\circ = \tan 80^\circ$$

=> Ans - (C)

Instructions

Study the following line chart carefully and answer the questions given below it. The following line chart represents the number of employees recruited in different years in a company.



Question 102

What was the ratio of number of employees recruited in the year 2010 and 2012

- A 2 : 3
- B 7 : 5
- C 5 : 7
- D 5 : 9

Answer: B

Question 103

The number of employees recruited in the year 2012 was what percent of the number employees recruited in the year 2014 ?

- A 50%
- B 60%
- C 62.55%
- D 70%

Answer: C

Question 104

If the total number of employees before the year 2010 was 640, then the total number of employees after 2014 was:

- A 820
- B 835
- C 815
- D 845

Answer: B

Question 105

If the number of employees before 2010 was 640, what was percentage increased in 2010 ?

- A 5%
- B 5.5%
- C 4%
- D 4.5%

Answer: B

Question 106

The number of employees recruited in 2015 was 40% more than that recruited in 2014. How many employees were recruited in 2015 ?

- A 56
- B 16
- C 64
- D 60

Answer: A

Instructions

For the following questions answer them individually

Question 107

In a cricket match there are three types of tickets say A, B and C each costing Rs. 1000, Rs. 500 and Rs. 200 respectively. The ratio of the tickets sold of categories A, B and C is 3:2:5. If the total collection from selling the tickets is Rs. 2.5 crore, find the total number of tickets sold ?

- A 5000
- B 4800
- C 50000
- D 52000

Answer: C

Explanation:

Let tickets sold of category $A = 3x$, $B = 2x$ and $C = 5x$

Total cost of tickets = $(3x \times 1000) + (2x \times 500) + (5x \times 200)$

$$\Rightarrow 3000x + 1000x + 1000x = 2,50,00,000$$

$$\Rightarrow x = \frac{2,50,00,000}{5000} = 5,000$$

$$\therefore \text{Total tickets sold} = 3x + 2x + 5x = 10x$$

$$= 10 \times 5000 = 50,000$$

\Rightarrow Ans - (C)

Question 108

A prism with a right triangular base is 25 cm high. If the shorter sides of the triangle are in the ratio of 1 : 2 and the volume of the prism is 100cm^3 , what is the length of the longest side of the triangle?

- A $\sqrt{5}$ cm
- B $2\sqrt{5}$ cm
- C $5\sqrt{2}$ cm
- D 5 cm

Answer: B

Question 109

Arun buys one kilogram of apples for Rs. 120 and sells it to Swati gaining 25%. Swati sells it to Divya who again sells it for Rs. 198, making a profit of 10%. What is the profit percentage made by Swati ?

- A 25%
- B 20%
- C 16.67%
- D 15%

Answer: B

Explanation:

In 1st transaction,

Cost price for Arun = Rs. 120

Profit % = 25%

$$\Rightarrow \text{Selling price} = 120 + \left(\frac{25}{100} \times 120\right)$$

$$= 120 + 30 = \text{Rs. } 150$$

In 3rd transaction,

Selling price by Divya = Rs. 198

\Rightarrow Profit % = 10%

$$\Rightarrow \text{Cost price for Di ya} = \left(\frac{198}{100+10}\right) \times 100$$

$$= \frac{198}{11} \times 10 = \text{Rs. } 180$$

Now, in 2nd transaction,

Cost price for Swati = Rs. 150

Selling price for Swati = Rs. 180

$$\Rightarrow \text{Profit \%} = \frac{(180-150)}{150} \times 100$$

$$= \frac{30}{150} = 20\%$$

\Rightarrow Ans - (B)

Question 110

If $a + \frac{1}{b} = 1$ and $b + \frac{1}{c} = 1$ then $c + \frac{1}{a}$ is equal to

- A 1

B 0

C -1

D 2

Answer: A

Explanation:

Given : $a + \frac{1}{b} = 1$

$$\Rightarrow \frac{1}{b} = 1 - a$$

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

Also, $b + \frac{1}{c} = 1$

Substituting value from equation (i) in above equation,

$$\Rightarrow \frac{1}{1-a} = 1 - \frac{1}{c}$$

$$\Rightarrow \frac{1}{1-a} = \frac{c-1}{c}$$

$$\Rightarrow c = c - 1 - ac + a$$

$$\Rightarrow ac + 1 = a$$

$$\Rightarrow \frac{ac}{a} + \frac{1}{a} = 1$$

$$\Rightarrow c + \frac{1}{a} = 1$$

$$\Rightarrow \text{Ans - (A)}$$

Question 111

Two concentric circles are drawn with radii 12 cm and 13 cm. What will be the length of any chord of the larger circle that is tangent to the smaller circle ?

A 5 cm

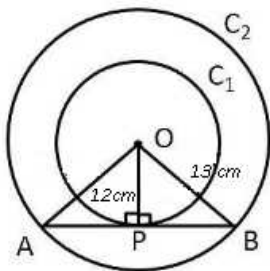
B 8 cm

C 10 cm

D 25 cm

Answer: C

Explanation:



Given : C_1 and C_2 be the two concentric circles having radius $r_1 = 13$ cm and $r_2 = 12$ cm respectively.

To find : $AB = ?$

Solution : AB is the the tangent to the circle C_1 , hence $\angle OPB = 90^\circ$

Also, the perpendicular from the centre of a circle to a chord bisects the chord.

Thus, in $\triangle OPB$,

$$\Rightarrow (PB)^2 = (OB)^2 - (OP)^2$$

$$\Rightarrow (PB)^2 = (13)^2 - (12)^2$$

$$\Rightarrow (PB)^2 = 169 - 144 = 25$$

$$\Rightarrow PB = \sqrt{25} = 5 \text{ cm}$$

$$\therefore AB = 2 \times 5 = 10 \text{ cm}$$

\Rightarrow Ans - (C)

Question 112

If $(2a - 3)^2 + (3b + 4)^2 + (6c + 1)^2 = 0$, then value of $\frac{a^3 + b^3 + c^3 - 3abc}{a^2 + b^2 + c^2} + 3$ is:

A $abc + 3$

B 6

C 0

D 3

Answer: C

Explanation:

$$\text{Given: } (2a - 3)^2 + (3b + 4)^2 + (6c + 1)^2 = 0$$

Sum of three positive terms is zero, iff all the three terms are zero.

$$\Rightarrow 2a - 3 = 0$$

$$\Rightarrow a = \frac{3}{2}$$

$$\text{Similarly, } b = -\frac{4}{3} \text{ and } c = -\frac{1}{6}$$

$$\text{Now, } a + b + c = \frac{3}{2} - \frac{4}{3} - \frac{1}{6} = 0 \text{ -----(i)}$$

$$\text{Also, } a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ac)$$

Substituting value from equation (i), we get :

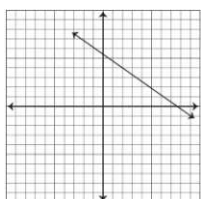
$$\Rightarrow a^3 + b^3 + c^3 - 3abc = 0 \text{ -----(ii)}$$

$$\therefore \frac{a^3 + b^3 + c^3 - 3abc}{a^2 + b^2 + c^2} = 0$$

\Rightarrow Ans - (C)

Question 113

The slope of the given line is:



A Positive

B Negative

C Undefined

D Zero

Answer: B

Question 114

Two pipes can independently fill a bucket in 20 minutes and 25 minutes. Both are turned on together for 5 minutes after which the second pipe is turned off. What is the time taken by the first pipe alone to fill the remaining portion of the bucket ?

A 11 minutes

B 16 minutes

C 20 minutes

D 15 minutes

Answer: A

Explanation:

Let capacity of bucket = L.C.M. (20,25) = 100 litres

First pipe can fill it in 20 minutes, => first pipe's efficiency = $\frac{100}{20} = 5$ l/min

Similarly, second pipe's efficiency = $\frac{100}{25} = 4$ l/min

=> Volume of bucket filled by both in five minutes = $(5 + 4) \times 5 = 45$ litres

∴ Time taken by the first pipe alone to fill the remaining portion of the bucket = $\frac{(100-45)}{5} = 11$ minutes

=> Ans - (A)

Question 115

Which of the following statements is not correct ?

A For a given radius and height, a right circular cone has the lesser volume among a right circular cone and a right circular cylinder.

B If side of a cube is increased by 10%, the volume will increase by 33.1%.

C If the radius of a sphere is increased by 20%, the surface area will increase by 40%.

D Cutting a sphere into 2 parts does not change the total volume.

Answer: C

Explanation:

(A) : Volume of cylinder = $\pi r^2 h$

Volume of cone = $\frac{1}{3} \pi r^2 h$

=> Volume of cone is lesser (one-third) than the volume of cylinder. Above statement is correct.

(B) : Let side of cube = $a = 10$ cm

=> Volume of cube = $(10)^3 = 1000 \text{ cm}^3$

New side after 10% increase = $10 + \left(\frac{10}{100} \times 10\right) = 11$ cm

Thus, new volume = $(11)^3 = 1331 \text{ cm}^3$

$$\therefore \text{Increase in volume} = \frac{(1331-1000)}{1000} \times 100 = 33.1\%$$

Thus, above statement is correct.

(C) : Let radius of sphere = $r = 10$ cm

$$\text{Surface area of sphere} = 4\pi r^2 = 4\pi(10)^2 = 400\pi \text{ cm}^2$$

$$\text{After increasing the radius by 20\%, new radius} = r' = 10 + \left(\frac{20}{100} \times 10\right) = 12 \text{ cm}$$

$$\Rightarrow \text{New surface area} = 4\pi(12)^2 = 576\pi \text{ cm}^2$$

$$\therefore \text{Increase in surface area} = \frac{(576-400)}{400} \times 100 = 44\%$$

Thus, above statement is **not correct**.

(D) : Cutting a sphere into 2 parts does not change the total volume because the sum of volume of the two hemispheres will be equal to the volume of sphere. Hence, it is also correct.

\Rightarrow Ans - (C)

Question 116

A shopkeeper purchases two items for Rs. 520. One of them is sold gaining 16% and the other at a loss of 10%, thus making no profit or loss. What is the selling price of the item sold at loss ?

A Rs. 288

B Rs. 232

C Rs. 320

D Rs. 200

Answer: A

Explanation:

Let cost price of first item = Rs. $100x$ and of second item = Rs. $(520 - 100x)$

Profit % on first item = 16%

$$\Rightarrow \text{Selling price} = 100x + \left(\frac{16}{100} \times 100x\right) = \text{Rs. } 116x$$

Similarly, selling price of item sold at 10% loss = $(520 - 100x) - \frac{10}{100} \times (520 - 100x)$

$$= (520 - 100x) - 52 + 10x = \text{Rs. } (468 - 90x) \text{ -----(i)}$$

Since, there is no profit and no loss, hence total cost price = total selling price

$$\Rightarrow 116x + 468 - 90x = 520$$

$$\Rightarrow 26x = 520 - 468 = 52$$

$$\Rightarrow x = \frac{52}{26} = 2$$

\therefore Selling price of the item sold at loss [from equation (i)] = $468 - (90 \times 2)$

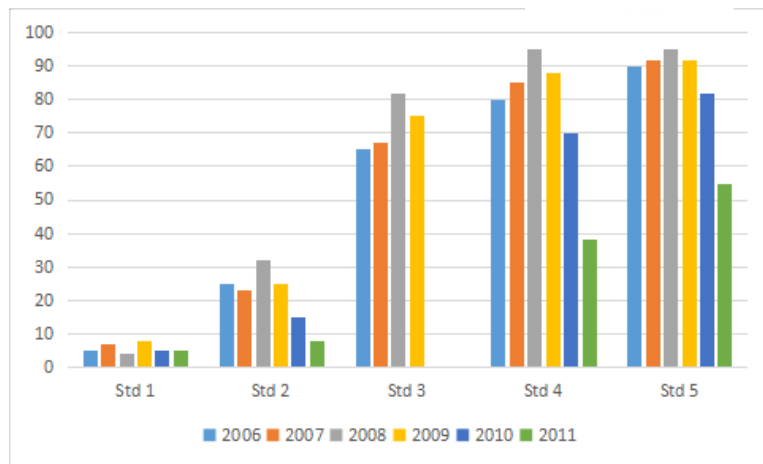
$$= 468 - 180 = \text{Rs. } 288$$

\Rightarrow Ans - (A)

Instructions

Direction: Study the following bar graph showing the percentage of children who can read at the first grade level, grouped by their grade level in an Indian state.

For example, in 2008, 82% of the children from Standard 3 could read a text from Standard 1. Now answer the following question based on this graph.



Question 117

In the year 2010, what is the approximate value of average of all Std 1, 2, 3, 4, 5 children who could read the Std 1 text ?

- A 49.2%
- B 57%
- C 33%
- D Data Insufficient

Answer: D

Instructions

For the following questions answer them individually

Question 118

The diagonals of two squares are in the ratio of 3: 7. What is the ratio of their areas ?

- A 3 : 7
- B 9 : 49
- C 4 : 7
- D 7 : 3

Answer: B

Explanation:

Ratio of square of diagonal to area of square = 2 : 1

Let diagonal of first square = $d_1 = 3$ cm and $d_2 = 7$ cm

Thus, ratio of areas = $\frac{A_1}{A_2} = \left(\frac{d_1}{d_2}\right)^2$

$$= \frac{3^2}{7^2} = \frac{9}{49}$$

=> Ans - (B)

Question 119

A store has an offer 'Buy 4 Get 1 Free'. What is the net percentage of discount ?

- A 25%
- B 33.3%
- C 20%
- D Insufficient Data

Answer: C

Explanation:

The store is giving 1 item free on purchase of 4, i.e. we get 5 items and pay for 4.

$$\Rightarrow \text{Net discount \%} = \frac{1}{5} \times 100$$

$$= 20\%$$

\Rightarrow Ans - (C)

Question 120

If $a + b + c = 1$, $ab + bc + ca = -1$ and $abc = -1$, then the value of $a^3 + b^3 + c^3$ is

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

Answer: A

Explanation:

Given : $(a + b + c) = 1$ -----(i) and $(ab + bc + ca) = -1$ and $abc = -1$ -----(ii)

Squaring equation (i), we get :

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

$$\Rightarrow (1)^2 = (a^2 + b^2 + c^2) + 2(-1)$$

$$\Rightarrow a^2 + b^2 + c^2 = 1 + 2 = 3$$
 -----(iii)

$$\text{Also, } a^3 + b^3 + c^3 = 3abc + (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ca)$$

$$= 3(-1) + (1) \times [3 - (-1)]$$

$$= -3 + 4 = 1$$

\Rightarrow Ans - (A)

Question 121

The average of the first 7 integers in a series of 13 consecutive odd integers is 37. What is the average of the entire series ?

- A 37
- B 39
- C 41
- D 43

Answer: D

Explanation:

Average of first 7 consecutive odd integers in the series = 37

=> 4th integer is 37

Thus, series of integers = 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55

Average of 13 integers is the 7th integer = **43**

=> Ans - (D)

Question 122

A sum of Rs. 2800 is divided into two parts in such a way that the interest on both the parts is equal. If the first part is lent at 9% p.a for 5 years and second part is for 6 years at 10% p.a., find the two sums.

A Rs. 1800, Rs. 1000

B Rs. 1600, Rs. 1200

C Rs. 1400, Rs. 1400

D Rs. 1300, Rs. 1500

Answer: B

Explanation:

Let the principal sum for first part = Rs. x and for second part = Rs. $(2800 - x)$

Simple interest = $\frac{P \times R \times T}{100}$

First part is lent at 9% for 5 years and second part at 10% for 6 years

According to ques,

$$\Rightarrow \frac{x \times 9 \times 5}{100} = \frac{(2800 - x) \times 10 \times 6}{100}$$

$$\Rightarrow 45x = (2800 - x) \times 60$$

$$\Rightarrow 3x = (2800 - x) \times 4$$

$$\Rightarrow 3x = 11200 - 4x$$

$$\Rightarrow 3x + 4x = 7x = 11200$$

$$\Rightarrow x = \frac{11200}{7} = 1600$$

Other sum = $2800 - 1600 = 1200$

∴ The two sums are = **Rs. 1600** and **Rs. 1200**

=> Ans - (B)

Question 123

On a certain sum of money, the simple interest for 2 years is Rs. 350 at the rate of 4% per annum. It was invested at compound interest at the same rate for the same duration as before, how much more interest would be earned ?

A Rs. 3.50

B Rs. 7

C Rs. 14

D Rs. 35

Answer: B

Explanation:

Rate of interest = 4% and time period = 2 years

Let principal sum = Rs. x

$$\text{Simple interest} = \frac{P \times R \times T}{100}$$

$$\Rightarrow \frac{x \times 4 \times 2}{100} = 350$$

$$\Rightarrow x = \frac{35000}{8} = 4375$$

Now, interest earned under compound interest = $P[(1 + \frac{R}{100})^T - 1]$

$$= 4375[(1 + \frac{4}{100})^2 - 1]$$

$$= 4375[(\frac{26}{25})^2 - 1]$$

$$= 4375 \times \frac{676 - 625}{625}$$

$$= 7 \times 51 = \text{Rs. } 357$$

$$\therefore \text{Difference in interest} = 357 - 350 = \text{Rs. } 7$$

\Rightarrow Ans - (B)

Question 124

The average marks of a class of 35 children is 35. The marks of one of the students, who got 35, was incorrectly entered as 65. What is the correct average of the class ?

A 33.76

B 34.14

C 35.24

D 36.50

Answer: B

Explanation:

Average marks of 35 children = 35

$$\Rightarrow \text{Sum of marks of 35 children} = 35 \times 35 = 1225$$

$$\text{After correcting the mistake new sum} = 1225 - 65 + 35 = 1195$$

$$\Rightarrow \text{Correct average} = \frac{1195}{35} = 34.14$$

\Rightarrow Ans - (B)

Question 125

In $\triangle ABC$, D is the mid-point of BC and G is the centroid. If $GD = 5$ cm, then the length of AD is:

A 10 cm

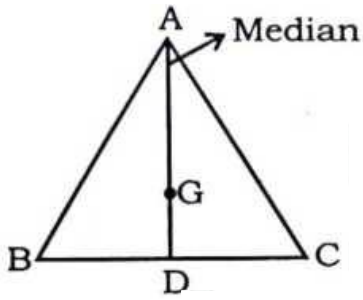
B 12 cm

C 15 cm

D 20 cm

Answer: C

Explanation:



Given : G is the centroid of $\triangle ABC$ and $GD = 5$ cm

To find : $AD = ?$

Solution : A centroid divides a median in the ratio 2 : 1

$$\Rightarrow AG : GD = 2 : 1$$

$$\Rightarrow AG = \frac{2}{1} \times 5 = 10 \text{ cm}$$

$$\therefore AD = AG + GD$$

$$= 10 + 5 = 15 \text{ cm}$$

\Rightarrow Ans - (C)

Question 126

What is the value of $\frac{(\cot \theta + \operatorname{cosec} \theta - 1)}{(\cot \theta - \operatorname{cosec} \theta + 1)}$?

A $\cot \theta + \operatorname{cosec} \theta$

B 1

C -1

D 0

Answer: A

Explanation:

Expression : $\frac{(\cot \theta + \operatorname{cosec} \theta - 1)}{(\cot \theta - \operatorname{cosec} \theta + 1)}$

$$= \left(\frac{\cos \theta}{\sin \theta} + \frac{1}{\sin \theta} - 1 \right) \div \left(\frac{\cos \theta}{\sin \theta} - \frac{1}{\sin \theta} + 1 \right)$$

$$= \left(\frac{\cos \theta - \sin \theta + 1}{\sin \theta} \right) \div \left(\frac{\cos \theta + \sin \theta - 1}{\sin \theta} \right)$$

Rationalizing the denominator, we get :

$$= \frac{\cos \theta - (\sin \theta - 1)}{\cos \theta + (\sin \theta - 1)} \times \frac{\cos \theta - (\sin \theta - 1)}{\cos \theta - (\sin \theta - 1)}$$

$$= \frac{[\cos \theta - (\sin \theta - 1)]^2}{\cos^2 \theta - (\sin \theta - 1)^2}$$

$$= \frac{\cos^2 \theta + (\sin \theta - 1)^2 - 2\cos \theta(\sin \theta - 1)}{\cos^2 \theta - \sin^2 \theta - 1 + 2\sin \theta}$$

$$= \frac{\cos^2 \theta + \sin^2 \theta + 1 - 2\sin \theta - 2\cos \theta \sin \theta + 2\cos \theta}{\cos^2 \theta - \sin^2 \theta - 1 + 2\sin \theta}$$

$$= \frac{2 - 2\sin \theta - 2\sin \theta \cos \theta + 2\cos \theta}{-\sin^2 \theta - \sin^2 \theta + 2\sin \theta}$$

$$= \frac{1 - \sin \theta - \sin \theta \cos \theta + \cos \theta}{-\sin^2 \theta + \sin \theta}$$

$$= \frac{(1 - \sin \theta) + \cos \theta(1 - \sin \theta)}{\sin \theta(1 - \sin \theta)}$$

$$= \frac{1+\cos\theta}{\sin\theta}$$

$$= \cot\theta + \operatorname{cosec}\theta$$

=> Ans - (A)

Question 127

If $\sqrt{5} = 2.236$, then what is the value of $\frac{\sqrt{5}}{2} + 3\sqrt[5]{5} - \sqrt{45}$?

A -8.571

B -4.845

C -2.987

D -6.261

Answer: B

Explanation:

Given : $\sqrt{5} = 2.236$

To find : $\frac{\sqrt{5}}{2} + 3\sqrt[5]{5} - \sqrt{45}$

$$= \frac{\sqrt{5}}{2} + \frac{\sqrt{5}}{3} - 3\sqrt{5}$$

$$= \sqrt{5}\left(\frac{1}{2} + \frac{1}{3} - 3\right)$$

$$= \sqrt{5}\left(\frac{3+2-18}{6}\right)$$

$$= 2.236 \times \frac{-13}{6} \approx -4.845$$

=> Ans - (B)

Question 128

If $\frac{a}{b} = \frac{1}{2}$, find the value of the expression $\frac{(2a-5b)}{(5a+3b)}$

A -32

B 11

C $\frac{-8}{11}$

D 17

Answer: C

Explanation:

Given : $\frac{a}{b} = \frac{1}{2}$

Let $a = 1$ and $b = 2$

To find : $\frac{(2a-5b)}{(5a+3b)}$

$$= \frac{2(1)-5(2)}{5(1)+3(2)}$$

$$= \frac{2-10}{5+6} = \frac{-8}{11}$$

=> Ans - (C)

Question 129

A merchant marks an article 20% above cost price. He then sells it at a discount of 20%. The sale given him.

- A No loss or gain
- B 4% loss
- C 2% gain
- D 4% gain

Answer: B

Explanation:

Let cost price = Rs. 100

$$\Rightarrow \text{Marked price} = 100 + \left(\frac{20}{100} \times 100\right)$$

$$= 100 + 20 = \text{Rs. } 120$$

Discount % = 20%

$$\Rightarrow \text{Selling price} = 120 - \left(\frac{20}{100} \times 120\right)$$

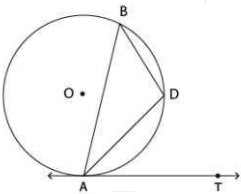
$$= 120 - 24 = \text{Rs. } 96$$

$$\therefore \text{Loss \%} = \frac{(100-96)}{100} \times 100 = 4\%$$

\Rightarrow Ans - (B)

Question 130

In the figure below, AB is a chord of a circle with center O. A tangent AT is drawn at point A so that $\angle BAT = 50^\circ$. Then $\angle ADB = ?$



- A 120°
- B 130°
- C 140°
- D 150°

Answer: B

Question 131

Anil started a business with an investment of Rs. 25,000. After 3 months, Vishal joined his business with a capital of Rs. 30,000. At the end of the year, they have made a profit of Rs. 19,000. What will be Anil's share in the profit ?

- A Rs. 10,000
- B Rs. 12,500
- C Rs. 10,250
- D Rs. 14,000

Answer: A

Explanation:

Anil invested Rs. 25,000 for 12 months and Vishal invested Rs. 30,000 for 9 months

$$\Rightarrow \text{Ratio of profits} = (25,000 \times 12) : (30,000 \times 9)$$

$$= 300 : 270 = 10 : 9$$

Total profit = Rs. 19,000

$$\therefore \text{Anil's share in the profit} = \frac{10}{10+9} \times 19,000$$

$$= 10 \times 1000 = \text{Rs. } 10,000$$

\Rightarrow Ans - (A)

Question 132

Find the value of $\frac{(243)^{\frac{n}{5}} \times 3^{2n+1}}{9^n \times 3^{n-1}}$

A 3

B 9

C 27

D 4

Answer: B

Explanation:

$$\text{Expression : } \frac{(243)^{\frac{n}{5}} \times 3^{2n+1}}{9^n \times 3^{n-1}}$$

$$= \frac{(3^5)^{\frac{n}{5}} \times 3^{2n+1}}{3^{2n} \times 3^n \times 3^{-1}}$$

$$= \frac{3^{n+2n} \times 3}{3^{n+2n} \times 3^{-1}}$$

$$= 3^{3n} \times 3 \times \frac{1}{3}$$

$$= 3 \times 3 = 9$$

\Rightarrow Ans - (B)

Question 133

If for a non-zero x , $3x^2 + 5x + 3 = 0$, then the value of $x^3 + \frac{1}{x^3}$ is:

A $\frac{10}{27}$

B $-\left(\frac{10}{27}\right)$

C $\frac{2}{3}$

D $-\left(\frac{2}{3}\right)$

Answer: A

Explanation:

$$\text{Given : } 3x^2 + 5x + 3 = 0$$

$$\text{Divide by } x, \Rightarrow 3x + \frac{3}{x} = -5$$

$$\Rightarrow x + \frac{1}{x} = \frac{-5}{3} \text{ -----(i)}$$

Cubing both sides, we get :

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

$$\Rightarrow x^3 + \frac{1}{x^3} + 3\left(x\right)\left(\frac{1}{x}\right)\left(x + \frac{1}{x}\right) = \frac{-125}{27}$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3(1)\left(x + \frac{1}{x}\right) = \frac{-125}{27}$$

$$\Rightarrow x^3 + \frac{1}{x^3} + 3\left(\frac{-5}{3}\right) = \frac{-125}{27}$$

$$\Rightarrow x^3 + \frac{1}{x^3} = \frac{-125}{27} + 5$$

$$\Rightarrow x^3 + \frac{1}{x^3} = \frac{-125+135}{27}$$

$$\Rightarrow x^3 + \frac{1}{x^3} = \frac{10}{27}$$

\Rightarrow Ans - (A)

Question 134

The ratio of the volume of a cube to that of a sphere which will fit inside the cube is

A $4 : \pi$

B $4 : 3\pi$

C $6 : \pi$

D $2 : \pi$

Answer: C

Explanation:

Let edge of cube be $2a$ cm and thus diameter of sphere = $2a$ cm

$$\Rightarrow \text{Radius of sphere} = \frac{2a}{2} = a \text{ cm}$$

$$\text{Volume of cube} = (2a)^3 = 8a^3 \text{ cm}^3 \text{ -----(i)}$$

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

$$= \frac{4}{3}\pi \times (a)^3 = \frac{4a^3\pi}{3} \text{ cm}^3 \text{ -----(ii)}$$

Dividing equation (i) by (ii), we get :

$$\Rightarrow \text{Required ratio} = \frac{8a^3}{\frac{4a^3\pi}{3}}$$

$$= \frac{8 \times 3}{4\pi} = \frac{6}{\pi}$$

\therefore Ratio of the volume of a cube to that of a sphere which will fit inside the cube = $6 : \pi$

\Rightarrow Ans - (C)

Question 135

A string of length 24 cm is bent first into a square and then into a right-angled triangle by keeping one side of the square fixed as its base. Then the area of triangle equals to:

A 24 cm^2

B 60 cm^2

C 40 cm^2

D 28 cm^2

Answer: A

Explanation:

String of length 24 cm is bent into square, \Rightarrow Perimeter of square = 24 cm

Let side of square = a cm

$$\Rightarrow 4a = 24$$

$$\Rightarrow a = \frac{24}{4} = 6 \text{ cm}$$

Let the other side of triangle be b and hypotenuse be c cm

$$\Rightarrow \text{Perimeter of triangle} = a + b + c = 24$$

$$\Rightarrow b + c = 24 - 6 = 18$$

$$\Rightarrow c = 18 - b \text{ -----(i)}$$

Also, using Pythagoras Theorem

$$\Rightarrow 6^2 + b^2 = c^2$$

$$\Rightarrow c^2 - b^2 = 36 \text{ -----(ii)}$$

Solving equations (i) and (ii), we get : $b = 8$ cm and $c = 10$ cm

$$\therefore \text{Area of triangle} = \frac{1}{2}ab$$

$$= \frac{1}{2} \times 6 \times 8 = 24 \text{ cm}^2$$

\Rightarrow Ans - (A)

Question 136

The red blood cells in a blood sample grows by 10% per hour in first two hours, decreases by 10% in next one hour, remains constant in next one hour and again increases by 5% per hour in next two hours. If the original count of the red blood cells in the sample is 40000, find the approximate red blood cell count at the end of 6 hours.

A 40000

B 45025

C 48025

D 50025

Answer: C

Explanation:

Original count = 40,000

In the next 2 hours, it increases by 10%

$$\Rightarrow \text{Blood cell count after 2 hours} = 40,000 \left(1 + \frac{10}{100}\right)^2 = 40,000 \left(\frac{11}{10}\right)^2$$

$$= 40,000 \times \frac{121}{100} = 48,400$$

It decreases by 10% in next hour

$$\Rightarrow \text{Blood cell count after 3 hours} = 48,400 \left(1 - \frac{10}{100}\right)^1$$

$$= 48,400 \times \frac{9}{10} = 43,560$$

It remains constant in the next hour, \Rightarrow Blood cell count after 4 hours = 43,560

In the next 2 hours, it increases by 5%

$$\Rightarrow \text{Blood cell count after 6 hours} = 43,560 \left(1 + \frac{5}{100}\right)^2 = 43,560 \left(\frac{21}{20}\right)^2$$

$$= 43,560 \times \frac{441}{400} = 48,024.9 \approx 48,025$$

\Rightarrow Ans - (C)

Question 137

The compound interest on a sum of Rs. 5000 at 8% per annum for 9 months when interest is compound quarterly is:

- A Rs. 300
- B Rs. 300.12
- C Rs. 306.04
- D Rs. 308

Answer: C

Explanation:

Principal sum = Rs. 5000

Rate of interest = 8% and time period = $\frac{9}{12} = \frac{3}{4}$ years

Compound interest when interest is compound quarterly = $P \left[\left(1 + \frac{R}{400}\right)^{4T} - 1 \right]$

$$= 5000 \left[\left(1 + \frac{8}{400}\right)^{3 \times 4} - 1 \right]$$

$$= 5000 \left[\left(1 + \frac{1}{50}\right)^3 - 1 \right]$$

$$= 5000 \left[\left(\frac{51}{50}\right)^3 - 1 \right]$$

$$= 5000 \times \left(\frac{132651 - 125000}{125000} \right)$$

$$= \frac{7651}{25} = \text{Rs. } 306.04$$

\Rightarrow Ans - (C)

Question 138

A man rows to a place 35 km in distant and back in 10 hours 30 minutes. He found that he could row 5 km with the flow of stream in the same time as he can row 4 km against the stream. Find the rate of flow of the stream.

- A 1 km/hr
- B 0.5 km/hr
- C 0.75 km/hr
- D 1.5 km/hr

Answer: C

Explanation:

Let speed of man in still water = x km/hr and speed of stream = y km/hr

Speed downstream = $(x + y)$ km/hr and speed upstream = $(x - y)$ km/hr

The man can row 35 km to and back in 10 hours 30 minutes

Using, time = distance/speed

$$\Rightarrow \frac{35}{x+y} + \frac{35}{x-y} = 10.5$$

$$\Rightarrow \frac{1}{x+y} + \frac{1}{x-y} = \frac{10.5}{35}$$

$$\Rightarrow \frac{1}{x+y} + \frac{1}{x-y} = 0.3 \text{-----(i)}$$

$$\text{Also, } \frac{5}{x+y} = \frac{4}{x-y}$$

$$\Rightarrow 5x - 5y = 4x + 4y$$

$$\Rightarrow 5x - 4x = 4y + 5y$$

$$\Rightarrow x = 9y \text{-----(ii)}$$

Substituting above value in equation (i), we get :

$$\Rightarrow \frac{1}{9y+y} + \frac{1}{9y-y} = 0.3$$

$$\Rightarrow \frac{1}{10y} + \frac{1}{8y} = 0.3$$

$$\Rightarrow \frac{10+8}{80} = 0.3y$$

$$\Rightarrow 0.3y \times 80 = 18$$

$$\Rightarrow y = \frac{18}{24} = 0.75$$

∴ Rate of flow of the stream = **0.75 km/hr**

⇒ Ans - (C)

Question 139

On a rainy day, 60 cm of rain is recorded in a region. What is the volume of water collected in an open and empty rectangular water tank that measures 12 m (length) x 10 m (width) and 50 cm (depth) ?

A 120 m³

B 72 m³

C 60 m³

D 48 m³

Answer: C

Question 140

A ladder is placed along a wall such that its upper end is touching the top of the wall. The foot of the ladder is 10 ft away from the wall and the ladder is making an angle of 60° with the ground. When a man starts climbing on it, it slips and now ladder makes an angle of 30° with ground. How much did the ladder slip from the top of the wall?

A 12 ft

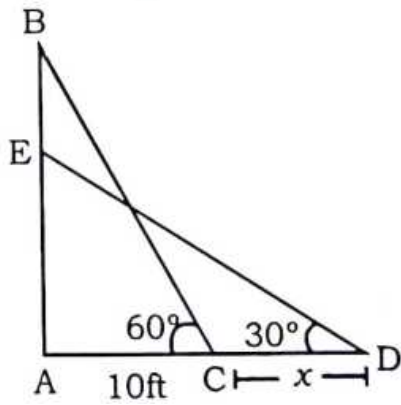
B 20 ft

C 7.32 ft

D 18 ft

Answer: C

Explanation:



Given : BC is the initial position of the ladder, and DE is its final position, So, $DE = BC$ (as both are the same ladders)

To find : $CD = x = ?$

Solution : In $\triangle ABC$,

$$\Rightarrow \cos(60^\circ) = \frac{AC}{BC}$$

$$\Rightarrow \frac{1}{2} = \frac{10}{BC}$$

$$\Rightarrow BC = 10 \times 2 = 20$$

Thus, $DE = BC = 20$

Similarly, in $\triangle ADE$,

$$\Rightarrow \cos(30^\circ) = \frac{AD}{DE}$$

$$\Rightarrow \frac{\sqrt{3}}{2} = \frac{x+10}{20}$$

$$\Rightarrow x + 10 = 10\sqrt{3}$$

$$\Rightarrow x = 10(\sqrt{3} - 1)$$

$$\Rightarrow x = 10 \times 0.732 = 7.32$$

\therefore The ladder slipped **7.32 ft**

\Rightarrow Ans - (C)

Question 141

A group of workers can complete a piece of work in 50 days, when they are working individually. On the first day one person works, on the second day another person joins him, on the third day one more person joins them and this process continues till the work is completed. How many approximate days are needed to complete the work ?

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

Answer: C

Explanation:

Let a man complete '1' piece of work in a day.

\Rightarrow Total work = 50 units

Then on 1st day, work done = 1 unit

On 2nd day = 2 units and so on.

Let the whole work will be completed in n days.

$$\Rightarrow \text{Total work} = 1 + 2 + 3 + \dots + n = 50$$

$$\Rightarrow \frac{n(n+1)}{2} = 50$$

$$\Rightarrow n(n+1) = 100$$

\therefore Number of days ≈ 10

\Rightarrow Ans - (C)

Question 142

Find out the wrong number in the series

190 166 145 128 112 100 91

A 100

B 166

C 145

D 128

Answer: D

Explanation:

In the above series, consecutive multiples of 3 in decreasing order are subtracted.

$$190 - 24 = 166$$

$$166 - 21 = 145$$

$$145 - 18 = 127$$

$$127 - 15 = 112$$

$$112 - 12 = 100$$

$$100 - 9 = 91$$

\Rightarrow Ans - (D)

Question 143

ABCD is a square. Draw an equilateral triangle PBC on side BC considering BC is a base and an equilateral triangle QAC on diagonal AC considering AC is a base. Find the value of $\frac{\text{Area of } \triangle PBC}{\text{Area of } \triangle QAC}$

A $\frac{1}{2}$

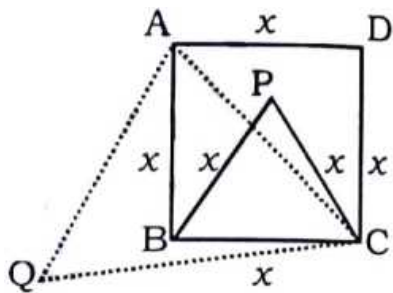
B 1

C $\frac{1}{3}$

D $\frac{1}{4}$

Answer: A

Explanation:



Let side of the square be x cm

\Rightarrow Side of equilateral $\triangle PBC = x$ cm

In right $\triangle ABC$,

$$\Rightarrow (AC)^2 = (AB)^2 + (BC)^2$$

$$\Rightarrow (AC)^2 = (x)^2 + (x)^2 = 2x^2$$

$$\Rightarrow AC = \sqrt{2}x$$

$$\therefore \frac{\text{ar}(\triangle PBC)}{\text{ar}(\triangle QAC)}$$

$$= \left[\frac{\sqrt{3}}{4} \times (x)^2 \right] \div \left[\frac{\sqrt{3}}{4} \times (\sqrt{2}x)^2 \right]$$

$$= \frac{x^2}{2x^2} = \frac{1}{2}$$

\Rightarrow Ans - (A)

Question 144

What will be the value of $x^3 + y^3 + z^3 - 3xyz$ when $x + y + z = 9$ and $x^2 + y^2 + z^2 = 31$?

A 27

B 3

C 54

D 9

Answer: C

Explanation:

Given : $x + y + z = 9$ -----(i)

and $x^2 + y^2 + z^2 = 31$ -----(ii)

Squaring equation (i), we get :

$$\Rightarrow (x + y + z)^2 = (9)^2$$

$$\Rightarrow (x^2 + y^2 + z^2) + 2(xy + yz + zx) = 81$$

$$\Rightarrow 31 + 2(xy + yz + zx) = 81$$

$$\Rightarrow 2(xy + yz + zx) = 81 - 31 = 50$$

$$\Rightarrow xy + yz + zx = \frac{50}{2} = 25$$
 -----(iii)

To find : $x^3 + y^3 + z^3 - 3xyz = (x + y + z)(x^2 + y^2 + z^2 - xy - yz - zx)$

$$= (9) \times (31 - 25)$$

$$= 9 \times 6 = 54$$

\Rightarrow Ans - (C)

Question 145

A trader purchased a gift box for Rs. 150. What should be the marked price on the gift box so that after allowing a discount of 10%, he makes a profit of 10% ?

- A Rs. 180
- B Rs. 183.3
- C Rs. 186.6
- D Rs. 190

Answer: B

Explanation:

Cost price of gift = Rs. 150

Profit % = 10%

$$\Rightarrow \text{Selling price} = 150 + \left(\frac{10}{100} \times 150\right)$$

$$= 150 + 15 = \text{Rs. } 165$$

Discount % = 10%

$$\Rightarrow \text{Marked price} = \left(\frac{165}{100-10}\right) \times 100$$

$$= \frac{1650}{9} = \text{Rs. } 183.3$$

\Rightarrow Ans - (B)

Question 146

A vegetable seller sells his vegetables at 20% profit. At the same time he uses false weights, which is 10% less than the actual weight. What will be his total gain percentage ?

- A 25%
- B 30%
- C 33.33%
- D $18\frac{7}{9}\%$

Answer: C

Explanation:

Let cost price of vegetables = Re 1/gm = Rs. 1000/kg

$$\text{Selling price} = \text{after 20\% profit} = 1000 + \left(\frac{20}{100} \times 1000\right) = \text{Rs. } 1200$$

$$\text{Similarly, weight used while selling} = 1000 - \left(\frac{10}{100} \times 1000\right) = 900 \text{ gm}$$

$$\Rightarrow \text{Selling price} = \text{Rs. } \frac{1200}{900} = 1.33 \text{ per gm}$$

$$\therefore \text{Profit \%} = \frac{(1.33-1)}{1} \times 100 = 33.33\%$$

\Rightarrow Ans - (C)

Question 147

How many hemispherical balls can be made from a cylinder 56 cm high and 12 cm diameter, when every ball being 0.75 cm in radius ?

- A 1792
- B 3584
- C 4824
- D 7168

Answer: D

Explanation:

Radius of cylinder = $r = 6$ cm and height = $h = 56$ cm

$$\Rightarrow \text{Volume of cylinder} = \pi r^2 h$$

$$= \pi \times (6)^2 \times 56 = 2016\pi \text{ cm}^3$$

Radius of hemisphere = $R = 0.75$ cm

$$\Rightarrow \text{Volume of hemisphere} = \frac{2}{3}\pi(R)^3$$

$$= \frac{2}{3}\pi \times (0.75)^3 = 0.28125\pi \text{ cm}^3$$

$$\therefore \text{Number of balls made} = \frac{2016\pi}{0.28125\pi} = 7168$$

\Rightarrow Ans - (D)

Question 148

The population of a town is 9000. If the number of females increases by 5% and the males by 7.5%, what will be the total population after increase. The number of females currently is 3000.

- A 9600
- B 9200
- C 10500
- D 9540

Answer: A

Explanation:

Number of females = 3000 and number of males = 6000

Females increase by 5% and the males by 7.5%

$$\Rightarrow \text{Total population after increase} = [3000 + (\frac{5}{100} \times 3000)] + [6000 + (\frac{7.5}{100} \times 6000)]$$

$$= (3000 + 150) + (6000 + 450)$$

$$= 9600$$

\Rightarrow Ans - (A)

Question 149

What is the digit in the unit's place in the number $\frac{15!}{100}$

- A 5
- B 7
- C 3
- D 1

Answer: D

Explanation:

$$\text{Number} = \frac{151}{100}$$

$$= 1.51$$

Thus, the unit digit is 1

=> Ans - (D)

Question 150

The cliff of a mountain is 180 m high and the angles of depression of two ships on the either side of cliff are 30° and 60° . What is the distance between the two ships ?

A 400 metre

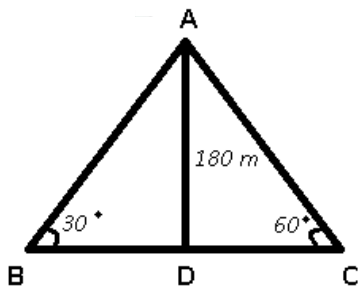
B $400\sqrt{3}$ metre

C 415.68 metre

D 398.6 metre

Answer: C

Explanation:



Given : AD is the mountain = 180 m

To find : Distance between the ships = BC = ?

Solution : In $\triangle ADC$

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

$$\Rightarrow \sqrt{3} = \frac{180}{DC}$$

$$\Rightarrow DC = \frac{180}{\sqrt{3}} \text{ m}$$

Similarly, in $\triangle ABD$

$$\Rightarrow \tan(30^\circ) = \frac{AD}{BD}$$

$$\Rightarrow \frac{1}{\sqrt{3}} = \frac{180}{BD}$$

$$\Rightarrow BD = 180\sqrt{3} \text{ m}$$

$$\therefore BC = BD + DC$$

$$= (180\sqrt{3} + \frac{180}{\sqrt{3}})$$

$$= \frac{540+180}{\sqrt{3}} = \frac{720}{\sqrt{3}}$$

$$= 240\sqrt{3} = 240 \times 1.732 = 415.68 \text{ m}$$

=> Ans - (C)

General Awareness

Instructions

For the following questions answer them individually

Question 151

The maximum biodiversity is found in

- A Tropical rain forests
- B Temperate forests
- C Coniferous forests
- D Arctic forest

Answer: A

Question 152

Who holds the highest law office in India ?

- A Attorney General
- B Accountant General
- C Lieutenant General
- D Solicitor General

Answer: A

Question 153

In the Union Government, the Council of Ministers is collectively responsible for the:

- A President
- B Prime Minister
- C Lok Sabha
- D Parliament

Answer: C

Question 154

Which international organisation observed the 125th birth anniversary of Shri. B. R. Ambedkar ?

- A International Monetary Fund (IMF)
- B United Nations
- C Asian Development Bank

D World Bank

Answer: B

Question 155

Cryogenics is:

- A A scientific study of dust
- B Study of heat
- C Scientific study of very low temperatures
- D Study of genesis

Answer: C

Question 156

Which one of the following schedules of the Constitution of India contains provisions regarding anti-defection Act ?

- A Second Schedule
- B Fifth Schedule
- C Eighth Schedule
- D Tenth Schedule

Answer: D

Question 157

Which of these statements is correct with regard to appointment of the Chairperson of the National Human Rights Commission ?

- A He/She has to be a retired Chief Justice of India
- B He/She has to be a retired Supreme Court Judge
- C He/She has to be a serving/retired Chief Justice of a High Court
- D He/She should have demonstrated experience as a Human Rights activist

Answer: A

Question 158

Who was the first Chairman of Indian Constitutions Drafting Committee ?

- A B L Mitter
- B Madhav Rao
- C Dr B R Ambedkar
- D T T Krishnamachari

Answer: C

Question 159

Which is the largest blood vessel in human body ?

- A Aorta
- B Anatomises
- C Tunica Intima
- D Atrium

Answer: A

Question 160

'El Nino' that affects our Monsoons, has its origins in

- A The Indian Ocean
- B The Himalayan Plateau
- C The Pacific Ocean
- D The Arabian Peninsula

Answer: C

Question 161

When a ship enters the sea from a river what will be the effect ?

- A It lowers
- B It sways
- C It rises a little
- D It jolts

Answer: C

Question 162

What is the brain of the computer called

- A CPU
- B Motherboard
- C HDD
- D Hardware

Answer: A

Question 163

Name the first woman Chief Minister of Jammu and Kashmir ?

- A Sakina Itoo
- B Mehbooba Mufti
- C Asiya Naqash
- D Hina Shafi Bhat

Answer: B

Question 164

If in the east it is Guhar Moti, in north it is Siachen Glacier, then in south it is:

- A Kuttanad
- B Kanyakumari
- C Rameshwaram
- D Indira point

Answer: D

Question 165

The person known for "Communication Revolution in India" is:

- A Prannoy Roy
- B Petroda Ericson
- C Craig wigginton
- D Sam Pitroda

Answer: D

Question 166

Which of the following countries has recently superseded

- A India
- B Bangladesh
- C China
- D Indonesia

Answer: A

Question 167

Name the Indian State with the highest tax revenue.

- A Assam
- B Sikkim
- C Karnataka
- D Maharashtra

Answer: D

Question 168

The chief constituent of natural gas is:

- A Methane
- B Helium
- C Nitrogen
- D Propane

Answer: A

Question 169

How many bits are equal to one byte?

- A 8
- B 10
- C 12
- D 14

Answer: A

Question 170

Who was the 1st President of South Africa after apartheid ?

- A Zuma
- B Nelson Mandela
- C Kofi Anan
- D Booker T. Washington

Answer: B

Question 171

When was RBI established ?

- A 1943
- B 1935

C 1939

D 1936

Answer: B

Question 172

Hydroscope is an instrument that shows changes in:

A Sound under water

B Atmospheric humidity

C Density of liquid

D Elevation of land

Answer: A

Question 173

Which Article of the Indian Constitution provides free legal aid and equal justice ?

A 30

B 25

C 39-A

D 33-B

Answer: C

Question 174

Which one of the following reflects back more sunlight s compared to other three ?

A Sand desert

B Land covered with fresh snow

C Prairie land

D Paddy crop land

Answer: B

Question 175

The magnitude of current flowing between two end points of a conductor is proportional to the potential difference between them and is called as:

A Avogadro's law

B Rault's law

C Ohms law

D Faraday's law

Answer: C

Question 176

The quintessence of Gandhian thought is:

- A Satyagraha
- B Metaphysics
- C Spirtialism
- D Moksha

Answer: A

Question 177

Abbreviation of Doctor of Philosophy is:

- A PH.D
- B D Phil
- C PH D
- D Ph. D

Answer: A

Question 178

Which monument is in pink colour ?

- A Taj Mahal
- B Hawa Mahal
- C Moti Mahal
- D Mumtaz Mahal

Answer: B

Question 179

Copper is associated with ____ mitochondrial enzymes

- A Cytochrome oxidase
- B Succinic dehydrogenase
- C Catalase
- D Acid phosphatase

Answer: A

Question 180

The second lightest of all gases is:

- A Nitrogen
- B Hydrogen
- C Helium
- D Oxygen

Answer: C

Question 181

Which of the following vitamins is generally excreted by human in urine ?

- A Vitamin B
- B Vitamin C
- C Vitamin D
- D Vitamin E

Answer: B

Question 182

Metals can be ____ at room temperature.

- A Liquid only
- B Solid only
- C Solid or liquid
- D Solid, liquid or gas

Answer: C

Question 183

Which Article of the Indian Constitution provides free and compulsory education to children ?

- A 21-A
- B 46
- C 39
- D 15

Answer: A

Question 184

Which of the following public sector banks would receive the loans from New Development Bank of BRICS countries ?

- A Punjab National Bank

- B Canara Bank
- C Bank of Baroda
- D State Bank of India

Answer: B

Question 185

According to World Happiness Index what is the rank of India ?

- A 156
- B 123
- C 141
- D 118

Answer: D

Question 186

An Equinox is when :

- A Day and night are of equal length
- B Day is of the shortest duration during the year
- C Day is of the longest duration in the year
- D Day when maximum rainfall of the year occurs

Answer: A

Question 187

The constitutional amendment through which the four regional languages namely Bodo, Dogri, Maithali and Santhali were included in the constitution is:

- A 72nd
- B 92nd
- C 93rd
- D 94th

Answer: D

Question 188

Who is the Chairman of BRICS ?

- A M.V Kamath

- B K.V kamath
- C Sudeep Kamath
- D Sudhish Kamath

Answer: B

Question 189

What is the name of the project launched by the Government of India for AIDS prevention in North-Eastern states in February 2016 ?

- A Sunrise
- B Ujala
- C Surya
- D Sunshine

Answer: A

Question 190

Which of these straits separates Asia from Africa ?

- A Malacca
- B Hormuz
- C Bab-al-Mandeb
- D Bosphorus

Answer: C

Question 191

Processors contain a control unit and a/an:

- A Expansion slot
- B Port
- C Arithmetic logic unit (ALU)
- D CD drive

Answer: C

Question 192

Which of the following was used as circuitry for first generation of computers ?

- A Vacuum tube
- B Transistors
- C Integrated circuits

D Microprocessors

Answer: A

Question 193

In which pact, warm relations were established between "Garam dal" and "Naram dal", the two groups of the Indian National Congress ?

- A Gandhi-Irwin Pact
- B Lucknow Pact
- C Karachi agreement
- D Lahore

Answer: B

Question 194

Name the body which was established to provide safety and security of SC's and SC's social, economic, cultural and educational concerns after an amendment in the Indian constitution ?

- A Law Commission of India
- B National Commission for SC and ST
- C Special officer for Linguistic Minorities
- D Central Vigilance Commission

Answer: B

Question 195

Which among the following city was given as guru dakshina by Pandavas to Guru Dronacharya ?

- A Rawalpindi
- B Nainital
- C Hastinapur
- D Gurgaon

Answer: D

Question 196

Which one of the following is also called as milk sugar ?

- A Glucose
- B Fructose
- C Maltose
- D Lactose

Answer: D

Question 197

If Hwang Ho is the sorrow of China which river is sorrow of Bihar

- A Damodar river
- B Koshi River
- C Yamuna river
- D Ravi river

Answer: B

Question 198

In which year did the first amendment of Indian Constitution take place ?

- A 1951
- B 1950
- C 1948
- D 1949

Answer: A

Question 199

Under which of the following amendment, education was made a fundamental right ?

- A 83rd amendment in 2003
- B 83rd amendment in 2002
- C 86rd amendment in 2002
- D 87rd amendment in 2003

Answer: C

Question 200

What is the Statutory Liquidity Ratio (SLR) and Cash Reserve Ratio (CRR) for Indian banks in first two quarters of 2016?

- A 21.25%, 4%
- B 22.25%, 4%
- C 21.25%, 3%
- D 22.25%, 3%

Answer: A