Exampapers247

SSC CHSL 6 December 2015 Morning Shift

Reasoning

Instructions
For the following questions answer them individually

Question 1

If x stands for÷, ÷ stands for +, + stands for -, and - stands for x, then what is the value of (30+20)-5(7÷3) x 25 = ?

A 100

B 20

C 10

D 25

Answer: B

Explanation:
Expression : (30+20)-5(7÷3) x 25 = ?

$\equiv (30 - 20) \times 5(7 + 3) \div 25$

$= 10 \times \frac{5(10)}{25}$

$= 10 \times 2 = 20$

=> Ans - (B)

Instructions

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

Question 2

POLYTHEISM

A THESIS

B HOTELS

C PISTOL

D SMIT

Answer: A

Explanation:
The word 'POLYTHEISM' contains only 1 'S', thus the word '*Thesis*' cannot be formed.

=> Ans - (A)

Question 3

EMANCIPATE

A MENACE

B MANIAC

C PAINT

D PATENT

Answer: D

Explanation:
The word 'EMANCIPATE' contains only 1 'T', thus the word '*Patent*' cannot be formed.

=> Ans - (D)

Instructions
For the following questions answer them individually

Question 4

If + means ÷, ÷ means-, - means x, x means +, then 12 - 8 x 6 - 4 ÷ 6 + 3 = ?

A 92

B -33

C -122

D 118

Answer: D

Explanation:
Expression : 12 - 8 x 6 - 4 ÷ 6 + 3 = ?

$\equiv 12 \times 8 + 6 \times 4 - 6 \div 3$

$= (12 \times 8) + (6 \times 4) - (6 \div 3)$

$= 96 + 24 - 2 = 118$

=> Ans - (D)

Instructions

Select the missing number from the given responses.

Question 5

43	48	41
42	44	?
47	?	?

A 49, 45, 46

B 40, 48, 46

C 46, 40, 45

D 45, 48, 46

Answer: A

Explanation:
The pattern followed is that it is a group of numbers between 40 and 50

6 numbers are present in random order = 41, 42, 43, 44, __ , __ , 47, 48, __

Thus, missing numbers are = 45, 46, 49

=> Ans - (A)

Question 6

5	4	9
6	3	?
7	2	4
65	20	45

A 4

B 2

C 1

D 3

Answer: C

Explanation:
In each column, the number at the end is the product of first number to the sum of second and third number.

Eg :- $(6+7) \times 5 = 13 \times 5 = 65$

and $(3+2) \times 4 = 5 \times 4 = 20$

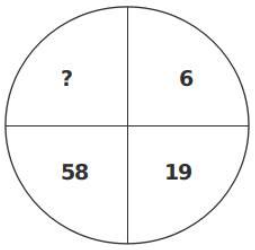
Similarly, $(x+4) \times 9 = 45$

=> $(x+4) = \frac{45}{9} = 5$

=> $x = 5 - 4 = 1$

=> Ans - (C)

Question 7



A 417

B 147

C 175

D 171

Answer: C

Explanation:
The pattern followed is that starting from top right and moving in clockwise direction, each number is multiplied by 3 and then 1 is added.

$(6 \times 3) + 1 = 19$

$(19 \times 3) + 1 = 58$

$(58 \times 3) + 1 = 175$

=> Ans - (C)

Instructions

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

Question 8

A 163

B 131

C 137

D 166

Answer: D

Explanation:
Apart from 166, all numbers are prime and odd, hence 166 is the odd one.

=> Ans - (D)

Question 9

A MOQ

B BDF

C XYZ

D RTV

Answer: C

Explanation:
(A) : M (+2 letters) = O (+2 letters) = Q

(B) : B (+2 letters) = D (+2 letters) = F

(C) : X (**+1** letter) = Y (**+1** letter) = Z

(D) : R (+2 letters) = T (+2 letters) = V

=> Ans - (C)

Question 10

A Oil : Lamp

B Oxygen : Life

C Water : Tap

D Power : Machine

Answer: C

Explanation:

Second requires the first to function. Oil is needed to burn a lamp, oxygen is used to live and a machine needs power, hence *Water : Tap* is the odd one out.

=> Ans - (C)

Question 11

A Glucose

B Chlorophyll

C Nitrogen

D Photosynthesis

Answer: D

Explanation:
Photosynthesis is a chemical process by which plants make their food in the presence of sun light and certain constituents, hence it is the odd one out.

=> Ans - (D)

Question 12

A 126

B 215

C 28

D 65

Answer: B

Explanation:
The pattern followed is :

$(5)^3 + 1 = 126$

$(6)^3 + 1 = 217 \neq 215$

$(3)^3 + 1 = 28$

$(4)^3 + 1 = 65$

=> Ans - (B)

Question 13

A 51530

B 2610

C 41220

D 3915

Answer: A

Explanation:
Apart from 51530, all numbers are divisible by 3, hence it is the odd one out.

$51530 = 5 + 1 + 5 + 3 + 0 = 14$

=> Ans - (A)

Question 14

A RQCB

B HIXY

C LMVW

D NODE

Answer: A

Explanation:
The pattern followed is :

(A) : R (**-1** letter) = Q and C (**-1** letter) = B

(B) : H (+1 letter) = I and X (+1 letter) = Y

(C) : L (+1 letter) = M and V (+1 letter) = W

(D) : N (+1 letter) = O and D (+1 letter) = E

=> Ans - (A)

Question 15

A EIHL

B CGFJ

C GKJN

D IMNR

Answer: D

Explanation:
The pattern followed is :

(A) : E (+4 letters) = I (-1 letter) = H (+4 letters) = L

(B) : C (+4 letters) = G (-1 letter) = F (+4 letters) = J

(C) : G (+4 letters) = K (-1 letter) = J (+4 letters) = N

(D) : I (+4 letters) = M (**+1** letter) = N (+4 letters) = R

=> Ans - (D)

Question 16

A Arunachal Pradesh

B Maharashtra

C Gujarat

D Karnataka

Answer: A

Explanation:
Arunachal Pradesh is located in the north-east India but rest are located in the South-West India, hence the odd state is Arunachal Pradesh.

=> Ans - (A)

Instructions
For the following questions answer them individually

Question 17

16, 30, ?, 79, 114

A 45

B 49

C 51

D 63

Answer: C

Explanation:
Consecutive multiples of '7' are added.

16 + 14 = 30

30 + 21 = **51**

51 + 28 = 79

79 + 35 = 114

=> Ans - (C)

Question 18

1, 48, 4, 24, 7, ? 10, 2

A 2

B 12

C 8

D 18

Answer: C

Explanation:
2 alternate series are there.

Odd series : Difference of '3' in each terms.

= 1 (+3) = 4 (+3) = 7 (+3) = 10

Even series : The pattern is :

48 $\div 2$ = 24

24 $\div 3$ = **8**

8 $\div 4$ = 2

=> Ans - (C)

Question 19

T, R, P, N, ?

A V

B E

C L

D M

Answer: C

Explanation:
The pattern followed is :

T (-2 letters) = R

R (-2 letters) = P

P (-2 letters) = N

N (-2 letters) = **L**

=> Ans - (C)

Question 20

4, __ , 19, 39, 79, 159

A 12

B 10

C 8

D 9

Answer: D

Explanation:
The pattern followed is that number of the form (5×2^n) is added where n is whole number.

$4 + (5 \times 2^0) =$ **9**

$9 + (5 \times 2^1) = 19$

$19 + (5 \times 2^2) = 39$

$39 + (5 \times 2^3) = 79$

$79 + (5 \times 2^4) = 159$

=> Ans - (D)

Question 21

Z, X, V, T, R, ?, N

A Q

B S

C R

D P

Answer: D

Explanation:
The pattern followed is :

Z (-2 letters) = X

X (-2 letters) = V

V (-2 letters) = T

T (-2 letters) = R

R (-2 letters) = **P**

P (-2 letters) = N

=> Ans - (D)

Question 22

Jais and his father has an age difference of 35 years now, After 5 years, the sum of their age is 125. What will be the age of jais and his father after 12 years from now ?

A 40 & 75

B 45 & 70

C 51 & 85

D 52 & 87

Answer: D

Explanation:
Let Jais's present age = x years

=> Jais's father's present age = $(x + 35)$ years

Sum of their ages after 5 years = $(x + 5) + (x + 35 + 5) = 125$

=> $2x + 45 = 125$

=> $2x = 125 - 45 = 80$

=> $x = \frac{80}{2} = 40$

$\therefore$ Age of jais and his father after 12 years from now = $(x + 12)$ and $(x + 35 + 12)$

= 52 and 87 years

=> Ans - (D)

Question 23

Which one set of letters when sequentially placed at the gaps in the given letter series shall complete ?
_bcc_aabc_baab_

A abac

B acac

C acbc

D abcc

Answer: D

Explanation:
Expression : _bcc_aabc_baab_

In groups of 3, the term 'abc' is written and in reverse at alternate positions.

Eg :- **a**bc c**b**a abc **c**ba ab**c**

≡ abcc

=> Ans - (D)

Instructions

Arrange the following words as per order in the dictionary.

Question 24

1. Extortioner
2. Extemporize
3. Extinction
4. Extermination
5. Extinguisher

A 2, 4, 3, 5, 1

B 2, 4, 5, 3, 1

C 1, 2, 3, 4, 5

D 4, 5, 2, 1, 3

Answer: A

Explanation:
As per the order of dictionary :

= Extemporize -> Extermination -> Extinction -> Extinguisher -> Extortioner

≡ 2, 4, 3, 5, 1

=> Ans - (A)

Question 25

1. Launderette
2. Laughter
3. Laundry
4. Launch

A 2, 4, 1, 3

B 4, 2, 1, 3

C 1, 3, 2, 4

D 4, 1, 2, 3

Answer: A

Explanation:
As per the order of dictionary :

= Laughter -> Launch -> Launderette -> Laundry

≡ 2, 4, 1, 3

=> Ans - (A)

Question 26

1. Complicate
2. Complicity
3. Complication
4. Compliant

A 4, 2, 3, 1

B 4, 2, 1, 3

C 4, 1, 3, 2

D 2, 1, 3, 4

Answer: C

Explanation:
As per the order of dictionary :

= Compliant -> Complicate -> Complication -> Complicity

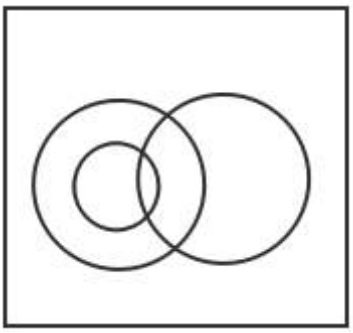
≡ 4, 1, 3, 2

=> Ans - (C)

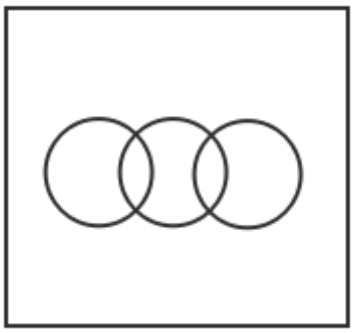
Question 27

Which of the following diagrams best represents cousins, nieces and females ?

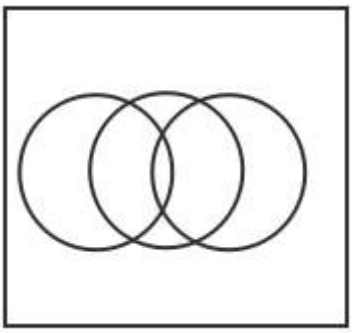
A



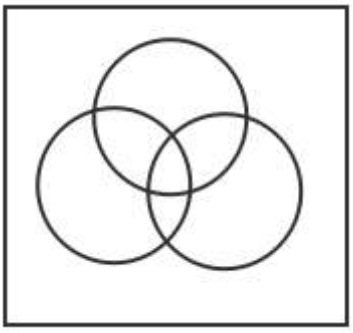
B



C

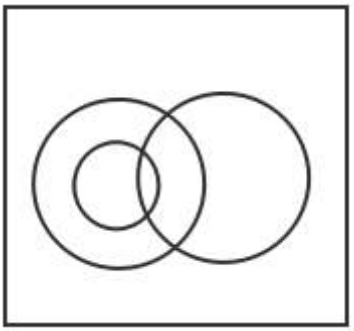


D



Answer: A

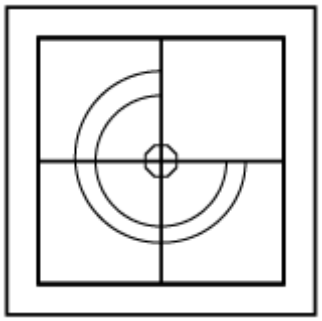
Explanation:
All nieces are females, and some cousins can be both females and cousins, hence the diagram that best represents the relation : cousins, nieces and females is :



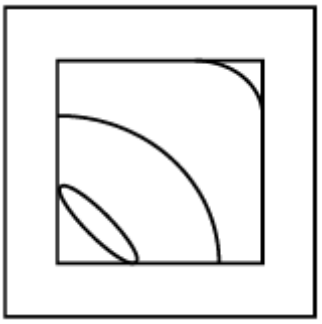
=> Ans - (A)

Question 28

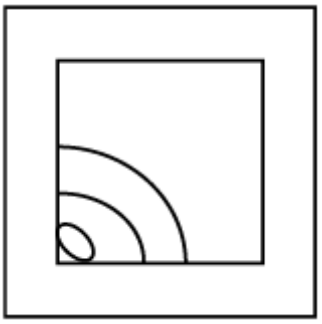
Which answer figure will complete the pattern in the question figure ?



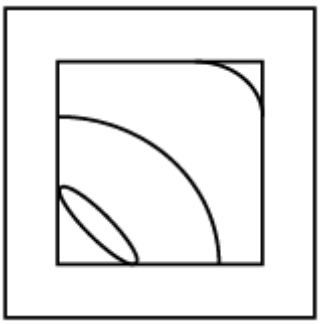
A



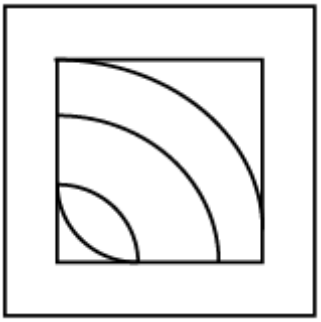
B



C



D



Answer: E

Instructions

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

Question 29

RORRIM : MIRROR : : TNESERP : ?

A PRESENT

B TNERESP

C STNERPE

D CRESENT

Answer: A

Explanation:
Expression = RORRIM : MIRROR : : TNESERP : ?

The letters are written in revere order, i.e. first letter is written at end, 2nd at 2nd last.

Similarly, TNESERP : **PRESENT**

=> Ans - (A)

Question 30

12593 : 35291
29684 : 46982
72936 : ?

A 69237

B 62793

C 62973

D 92637

Answer: A

Explanation:
Given = 12593 : 35291

Position of the digits is shuffled, i.e. first digit is written at last, second in the middle, third at second, fourth at second last and last at the first position.

Eg :- 29684 => First and last are swapped, second in the middle (4_9_2) and the remaining in the left over positions, => 46982

Similarly, 72936 : **69237**

=> Ans - (A)

Question 31

6 : 18 :: 4 : ?

A 15

B 2

C 6

D 8

Answer: D

Explanation:
Expression = 6 : 18 :: 4 : ?

The pattern followed is = $n : \frac{n^2}{2}$

Eg :- $\frac{(6)^2}{2} = \frac{36}{2} = 18$

Similarly, $\frac{(4)^2}{2} = \frac{16}{2} = 8$

=> Ans - (D)

Question 32

Mathematics : Logic :: Science : ?

A Laboratory

B Scientists

C Experiments

D Facts

Answer: C

Explanation:
Logic is the foundation of Mathematics, and science is based on experiments.

=> Ans - (C)

Question 33

EAC : KGI :: HDF ?

A PLN

B NJL

C KIJ

D FBD

Answer: B

Explanation:
Expression : EAC : KGI :: HDF ?

The pattern followed is :

E	A	C
(+6)	(+6)	(+6)
K	G	I

Similarly, for HDF :

H	D	F
(+6)	(+6)	(+6)
N	J	L

=> Ans - (B)

Question 34

Window : Pane :: Book : ?

A Novel

B Page

C Cover

D Glass

Answer: B

Explanation:
A window is made up of pane, similarly a book is made up of pages.

=> Ans - (B)

Question 35

Fan : Wings :: Wheel ?

A Air

B Spokes

C Cars

D Round

Answer: B

Explanation:
Wings are the parts of Fan. Likewise Spokes are the parts of Wheel.

=> Ans - (B)

Question 36

4845 : 45^2 **: : 5964 : ?**

A 96^2

B 59^2

C 54^2

D 94^2

Answer: C

Explanation:
Expression = 4845 : 45^2: : 5964 : ?

First and last digit of 4845 = 45 $\equiv$ $(45)^2$

Similarly, first and last digit of 5964 = 54 $\equiv$ $(54)^2$

=> Ans - (C)

Question 37

BUT : TUB :: NET : ?

A LET

B PET

C TEN

D TWO

Answer: C

Explanation:
Expression = BUT : TUB :: NET : ?

The letters are written in revere order, i.e. first letter is written at end, 2nd at 2nd last.

Similarly, NET : **TEN**

=> Ans - (C)

Instructions
For the following questions answer them individually

Question 38

After walking 200 meters, I turned right and covered a distance of 100 mtrs, then turned left and covered a distance of 300 mtrs. In the end I am facing towards North. From which direction did I start my journey ?

A East

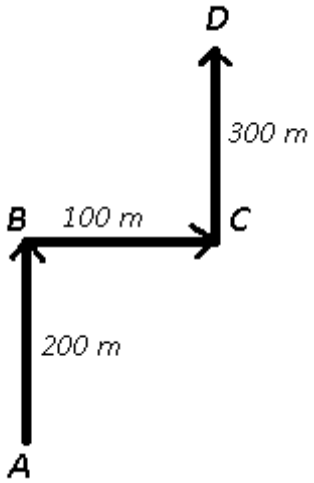
B South

C North

D West

Answer: C

Explanation:



Let I start from point A and head north for 200 m, then turned right towards east and reached C after walking 100 m. Finally turned left towards north and stopped at point D after walking 300 m.

Thus, I started my journey in **North** direction.

=> Ans - (C)

Question 39

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers given in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix I are numbered from 0 to 4 and that of Matrix II are numbered from 5 to 9. A letter from these matrices can be represented first by its row and next by its column, e.g., 'B' can be represented by 00,23 etc., and 'P' can be represented by 56,65 etc. Similarly, you have to identify the set for the word 'DEBRIS'

Matrix-I

	0	1	2	3	4
0	B	U	I	L	D
1	U	I	L	D	B
2	I	L	D	B	U
3	L	D	B	U	I
4	D	B	U	I	L

Matrix-II

	5	6	7	8	9
5	S	P	A	R	E
6	P	A	R	E	S
7	A	R	E	S	P
8	R	E	S	P	A
9	E	S	P	A	R

A 22, 95, 59, 30, 14, 69

B 22, 59, 42, 59, 34, 69

C 40, 95, 14, 59, 30, 69

D 40, 95, 14, 58, 34, 69

Answer: D

Explanation:
(A) : 22, 95, 59, 30, 14, 69 = DEELBS

(B) : 22, 59, 42, 59, 34, 69 = DEUEIS

(C) : 40, 95, 14, 59, 30, 69 = DEBELS

(D) : 40, 95, 14, 58, 34, 69 = **DEBRIS**

=> Ans - (D)

Question 40

If 'MOTHER' is coded as 'TOMREH', what should be the code for the word 'NEPHEW' ?

A ENHPWE

B HPENWE

C WEHPEN

D PENWEH

Answer: D

Explanation:
'MOTHER' is coded as 'TOMREH'

The pattern followed is that the word is divided into two parts, and each part is written in reverse order.

Eg :- MOTHER is divided into MOT and HER

Then, MOT -> TOM and HER -> REH

and thus, MOTHER : TOMREH

Similarly, NEPHEW : **PENWEH**

=> Ans - (D)

Question 41

Raheja started from a point. He walked 3 km to the North, then turned East and walked 4km, then turned West walked 2 km and then turned West walked 3km and stopped. In which direction is Raheja from his starting point ?

A East

B West

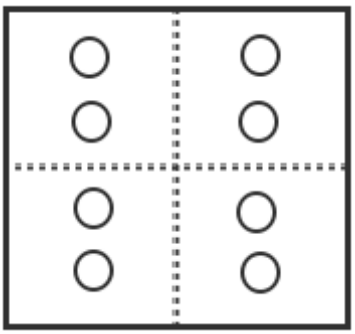
C North

D South

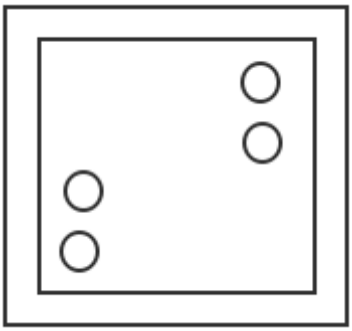
Answer: E

Question 42

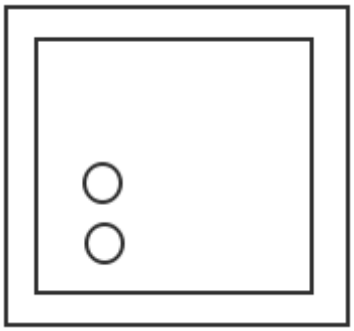
If a paper is folded in a particular manner and punch is made, when, unfolded this paper appears as given below in the question figure. Find out the manner in which the paper is folded and the punch is made from the answer figures given.



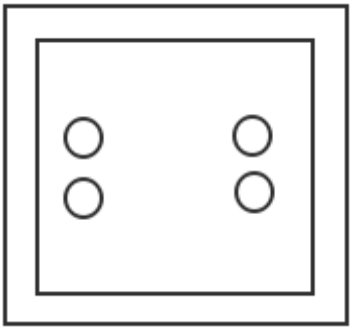
A



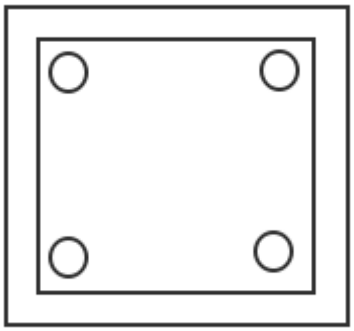
B



C



D



Answer: E

Question 43

In the question one statement is given, followed by two conclusion/assumption, I and II. You have to consider the statement to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusion/assumptions, if any, follows from the given statements.

Statement: An advertisement in the paper says 'Consume pure organic boney of Company A".
Conclusion:
I. Artificial boney can be prepared.
II. People don't mind paying more for pure organically

A Assumption I is implicit.

B Both I and II are implicit

C Neither I nor II is implicit

D Assumption II is implicit

Answer: E

Question 44

Adam who is 20 years old is 4 times as old as Mary. What will be Mary's age when Adam is twice as old as her ?

A 17 years

B 30 years

C 35 years

D 15 years

Answer: D

Explanation:

Adam's age = 20 years

=> Mary's age = $\frac{20}{4} = 5$ years

Since, difference between their ages = $20 - 5 = 15$ years

$\therefore$ Mary's age will be 15 years when Adam is twice as old as her. (i.e. after 10 years)

=> Ans - (D)

Question 45

In a certain code 0, 1, 2……..9 is coded as a,b,c.....j then find baf ÷ bf x d

A df

B be

C d

D cb

Answer: D

Explanation:
Expression : baf ÷ bf x d

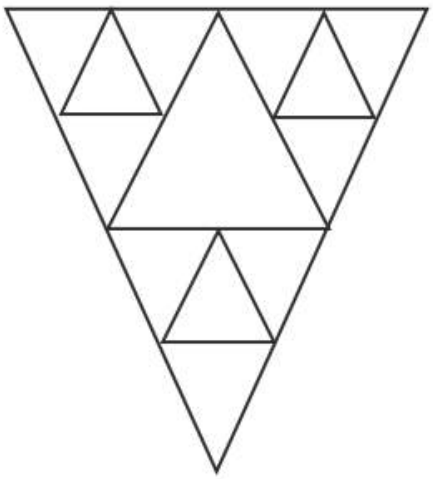
$\equiv 105 \div 15 \times 3$

= $7 \times 3 = 21 \equiv cb$

=> Ans - (D)

Question 46

The number of triangles in the following diagram



A 13

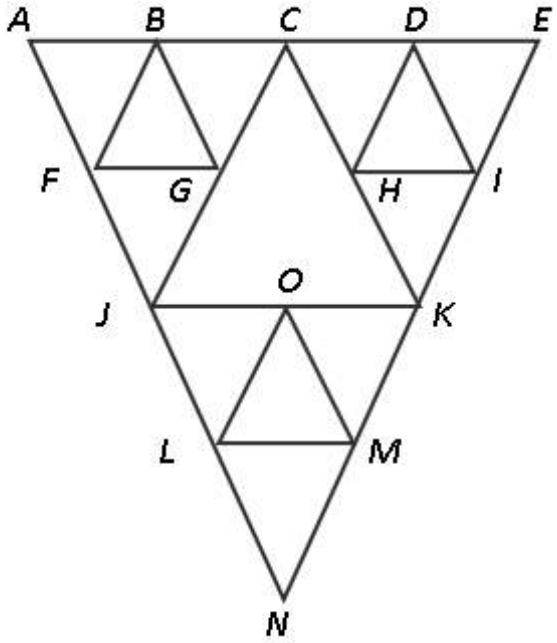
B 14

C 17

D None

Answer: C

Explanation:



Small triangles = ABF, BFG, CBG, FGJ, CDH, DHI, DEI, HIK, JOL, OLM, KOM, LMN = 12

Medium triangles = ACJ, CEK, CJK, JKN = 4

Big triangle = AEN = 1

Total number of triangles = 12 + 4 +1 = 17

=> Ans - (C)

Question 47

In a certain language, PRAYER is coded as MOXVBO, then how SALUTE will be coded in the same language ?

A PIXRQB

B PXIQRB

C PIXQRB

D PXIRQB

Answer: D

Explanation:
PRAYER is coded as MOXVBO

The pattern followed is :

P	R	A	Y	E	R
(-3)	(-3)	(-3)	(-3)	(-3)	(-3)
M	O	X	V	B	O

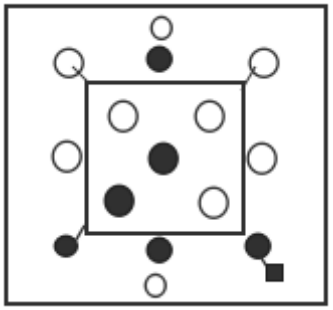
Similarly, for SALUTE :

S	A	L	U	T	E
(-3)	(-3)	(-3)	(-3)	(-3)	(-3)
P	X	I	R	Q	B

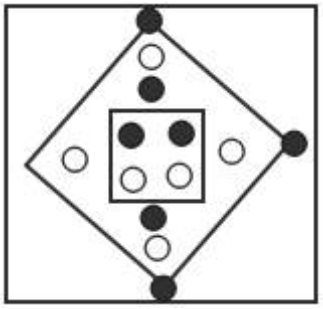
=> Ans - (D)

Question 48

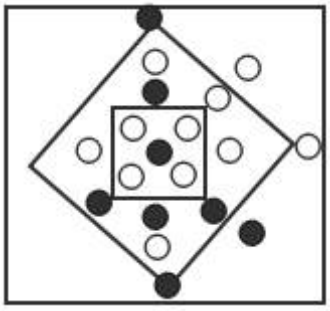
From the given answer figures, select the one in which the question figure is hidden/embedd



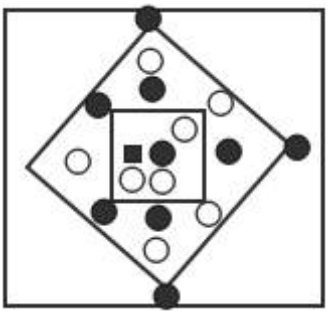
A

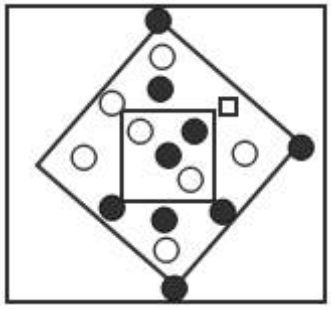


B



C



D 

Answer: E

Question 49

In the question one statement is given. You have to answer considering the statement to be true, even if it seem to be at variance from commonly known facts.
Statement: Students go to school in uniforms.

A Uniforms are compulsory

B Students look smart in uniforms

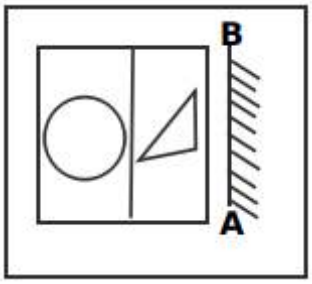
C Uniforms are easily

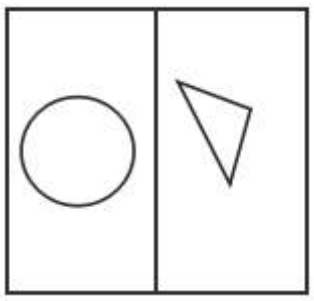
D Uniforms create a sense of belongingness

Answer: E

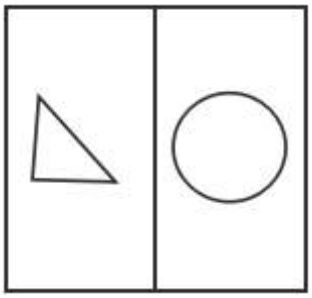
Question 50

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

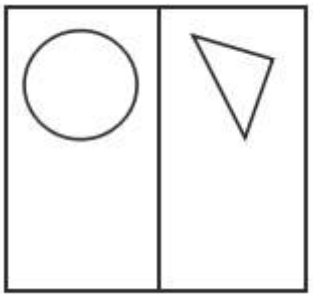


A 

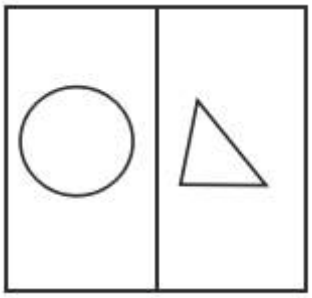
B



C



D



Answer: B

Explanation:
A vertical mirror is placed , thus the object on the left will appear at right hand side, and vice-versa.

The circle on the left side will appear on the right hand side in the mirror, hence first, third and fourth options are eliminated.

=> Ans - (B)

English

Instructions

A sentence has been given in Active/Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice and mark you answer in the Answer Sheet.

Question 51

I was obliged to leave.

A Circumstances obliged me to leave

B Circumstances have obliged me to leave

C Circumstance was obliged me to leave

D Circumstance will oblige me to leave

Answer: E

Question 52

Close the door

A Let the door is closed

B Let the door be closed

C Let the door closed

D Let the door is being closed

Answer: E

Instructions

The 1st and the last part of the sentence are numbered 1 and 6. The rest of the sentence is split into four parts and named P,Q,R & S. These four parts are not given in their proper order. Read the sentence and find out which of the four combinations is correct. Then Find the correct answer and indicate it by blackening the appropriate circle in the Answer Sheet.

Question 53

It was a Friday morning and
P. the lieutenant scanned the horizon
Q. just as the desert haze
R. with his binoculars
S. was clearing
6. And focused on many enemy tanks

A RPSQ

B PRSQ

C QSPR

D SPQR

Answer: E

Question 54

Earth is the borne
P. to our future
Q. we all share
R. generations as their
S. and would pass on
6. Legacy

A QPRS

B QSPR

C PRQS

D SPQR

Answer: E

Question 55

A man
P. with yellow, red, green
Q. stood helding
R. balloons
S. a pole
6. Flying from it

A PRQS

B PRSQ

C QSPR

D QRSP

Answer: E

Question 56

Margaret Noblc
P. became a disciple
Q. of Swami Vivekananda
R. a remarkable Irish lady,
S. and dedicated her life
6. To the service of the Indian people.

A RPQS

B SRQP

C SQPR

D PQRS

Answer: E

Instructions

Sentence are given with blanks to be filled in with an appropriate word(s). Four alternatives are suggested for each question. Choose the correct alternative out of the four and indicate it by blackening the appropriate circles in the Answer Sheet.

Question 57

I have no _____ office work

A experience on

B experience of

C experience to

D experience in

Answer: E

Question 58

solar panels are used to ___ Satellites.

A powers

B powerful

C power

D powerless

Answer: E

Question 59

His words were _____ for the occasion

A suit

B appropriately

C suitably

D appropriate

Answer: E

Question 60

Ten dollars _____ too much to pay

A were

B could

C are

D is

Answer: E

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 foiur alternative and fill in the blanks.

Squirrels are I animals in the world. They have the II for rainy days. Autumn can be very entertaining for them. That is the time III the great harvest collection for their winter store. You can IV here and there, collecting outs of all sorts. Walnuts, beechnuts, chestnuts, dried berries…..
They are not fussy. Relentlessly, they run from their storage point, usually a tree hollow, to the vast amount of wild nuts to be found in the forest.
These beautiful animals are house proud. They lake great pains to ensure that V and warm enough to tide them over the harsh winter. You VI busily collecting soft pieces of bark, wood and leaves to line their nests. After all their VII and when the first, cold hard frost arrives, they VIII inside their nests for the duration/rest of the cold spell. There, IX till it is warm enough to bring out their stored food. Ah but then again, they are the most forgetful little animals, and it is not unusual to see squirrels x their boards.

Question 61

A (I) the more resource

B (I) the most resourceful

C (I) the most resource

D (I) this most resourceful

Answer: E

Question 62

A (II) knack of saving up

B (II) knack of saving down

C (II) knack of saving on

D (Ii) knack of saved up

Answer: E

Question 63

A (III) when they begin

B (III) when their begin

C (III) when them begin

D (III) what they begin

Answer: E

Question 64

A (IV) seeing them scampered

B (IV) see their scampering

C (IV) seen them scampering

D (IV) see them scampering

Answer: E

Question 65

A (V) their nest is securing

B (V) their nest is secure

C (V) they nest is secure

D (V) there nest is secure

Answer: E

Question 66

A (VI) Is saw them

B (VI) will saw them

C (VI) will see them

D (VI) will seen them

Answer: E

Question 67

A (VII) scavenging is done

B (VII) scavenged is done

C (VII) seavenging is doing

D (VII) scavenged was done

Answer: E

Question 68

A (VIII) are seal themselves

B (VIII) will seal themselves

C (VIII) will be seal themselves

D (VIII) will sealing themselves

Answer: E

Question 69

A (IX) they will hibernate

B (IX) them will hibernate

C (IX) they are hibernsted

D (IX) they will hibernating

Answer: E

Question 70

A (X)search desperate at

B (X)searching desperates

C (X)searching desperately for

D (X)Searched desperately

Answer: E

Instructions

A part of the sentence is underlined. Below are given alternatives to the underlined pat which may improve the sentence. Choose the correct alternative. In case no improvement is needed choose 'No improvement.

Question 71

A greedy man always <u>bankers after</u> money

A No improvement

B Runs after

C Wanted

D Greeds after

Answer: E

Question 72

It is not difficult to forgive someone who <u>says sorry</u>

A Is apologising

B No improvement

C apologies

D Is asking sorry

Answer: E

Question 73

ours is a <u>joined</u> family

A join

B joint

C jointed

D No improvement

Answer: E

Question 74

Be quick <u>otherwise you would</u> miss the train

A Otherwise you will

B No improvement

C Otherwise you could have

D Otherwise you will have

Answer: E

Instructions

Four alternatives are given for the Idiom/Phrase underlined. Choose the alternative which best expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

Question 75

<u>Take the bull by the horns</u> is

A to be sensitive

B To win the battle

C To face a difficulty courageously

D To be helpful

Answer: E

Question 76

Sail in the same boat.

A Be in a different situation

B Suspect something wrong

C Be in the same situation

D To be helpful uncanny

Answer: E

Question 77

A false friend never hesitates to shed crocodile tears

A To pretend to be sympathetic

B To feel disappointed

C To move from one place to another

D To show false happiness

Answer: E

Question 78

to be in a quandary

A To be in a confusing situation

B To be in an unenviable position

C To be in a commanding

D To show false happiness

Answer: E

Instructions

Some parts of the sentence have errors and some are correct. Find out which part of a sentence has an error and blacken the circle corresponding to the appropriate correct option. If a sentence is free from error, blacken the circle corresponding to 'No Error' option in the Answer Sheet.

Question 79

She made the child to study hard

A She made

B No error

C To study hard

D The child

Answer: E

Question 80

The door should be keep closed

A The door

B No error

C Keep closed

D Should be

Answer: E

Question 81

The promise was broken by him

A Was broken

B No error

C By him

D The promise

Answer: E

Question 82

Rakesh founds the newspaper very dull

A The newspaper

B Very dull

C Rakesh founds

D No error

Answer: E

Instructions

Choose the word opposite in meaning to the given word and mark it in the answer sheet

Question 83

Traitor

A patriot

B member

C officer

D migrant

Answer: E

Question 84

Detest

A adore

B withhold

C Assist

D injure

Answer: E

Question 85

Ascend

A Climb

B deseend

C soar

D rise

Answer: E

Question 86

Repel

A dnnoy

B drag

C attract

D coax

Answer: E

Instructions

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

Question 87

A legal agreement that allows someone to use a building or land for a period of time, usually in return for rent

A Assurance

B Deal

C Bond

D Lease

Answer: E

Question 88

A person who helps another to commit a crime

A Colleague

B Accomplice

C Assistant

D Supporter

Answer: E

Question 89

A person who worships only one God

A Philogymist

B Theist

C Monotheist

D Polytheist

Answer: E

Question 90

The act of killing one's own brother or sister

A Suicide

B Fratricide

C Homicide

D Patricide

Answer: E

Instructions

Four words are given in each question, out of which only one word is correctly spelt. Find the correctly spelt word and mark your answer in the answer Sheet.

Question 91

A Jewillery

B Jewellery

C Jevelry

D Jewelery

Answer: E

Question 92

A Obeydient

B Obedient

C Oblidient

D obediemt

Answer: E

Question 93

A Diffuse

B Difuse

C Difusse

D diffusse

Answer: E

Question 94

A Patritism

B Pattriotism

C Patrotism

D Patriotism

Answer: E

Instructions

Out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the answer sheet.

Question 95

Result

A Data

B Decision

C Cause

D outcome

Answer: E

Question 96

lousy

A awful

B aura

C awesome

D awry

Answer: E

Question 97

Invincible

A yielding

B unassailable

C fallible

D vulnerable

Answer: E

Question 98

Crusade

A flatten

B angry

C campaign

D critical

Answer: E

Instructions

A sentence has been given in Direct/Indirect. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct and mark your answer in the Answer Sheet.

Question 99

The men said, “We are going to fly kites.”

A The men said that they are going to fly kites

B The men said that they were going to fly kites

C The men said that we were going to fly kites

D The men said that we are going to fly kites

Answer: E

Question 100

Kumar says, “It dosen’t rain in January”

A Kumar said that it dosen’t rain in January

B Kumar said that it didn’t rain in January

C Kumar says that it dosen’t rain in January

D Kumar says that it didn’t rain in January

Answer: E

Quant

Instructions
For the following questions answer them individually

Question 101

150 workers were engaged to finish a piece of work in a certain number of days. Four workers dropped on the second day, four more workers dropped on third day and so on. It takes 8 more days to finish the work no. Find the number of days in which the work was completed ?

A 28

B 30

C 24

D 25

Answer: D

Explanation:
Let 1 worker does 1 unit work in a day.

Let 150 workers can finish the work in $(n-8)$ days, if all workers work all the days.

Then, total work = $150(n-8)$ ----------(i)

Also, 150 workers work on day 1, 146 workers work on day 2, ... and so on. Work is completed in n days.

Thus, total work = $150+146+....(n \text{ terms})$

This is an arithmetic progression with first term, $a=150, d=-4$.

Thus, total work = $\frac{n}{2}[2a+(n-1)d]$

= $\frac{n}{2}[2(150)+(n-1)(-4)]$

= $\frac{n}{2}[300-4n+4]$

= $\frac{n}{2}[304-4n]=n(152-2n)$ ----------(ii)

Comparing equations (i) and (ii),

=> $150(n-8)=n(152-2n)$

=> $75(n-8)=n(76-n)$

=> $75n-600=76n-n^2$

=> $n^2-n-600=0$

=> $(n-25)(n+24)=0$

=> $n=25,-24$

$\because n$ cannot be negative, => $n=25$

=> Number of days in which the work was completed = 25

=> Ans - (D)

Question 102

A mixture contains milk and water in the ratio 5 : 1. On adding 5 litres of water, the ratio of milk and water becomes 5 : 2. The quantity of milk in the mixture is

A 25 litres

B 16 litres

C 22.75 litres

D 32.5 litres

Answer: A

Explanation:
Let quantity of water in mixture = x litres, => Quantity of milk = $5x$ litres

According to ques, => $\frac{5x}{x+5} = \frac{5}{2}$

=> $\frac{x}{x+5} = \frac{1}{2}$

=> $2x = x + 5$

=> $2x - x = 5$

=> $x = 5$

$\therefore$ Quantity of milk = $5 \times 5 = 25$ litres

=> Ans - (A)

Question 103

The average of all the odd integers between 2 and 22 is

A 11

B 14

C 13

D 12

Answer: D

Explanation:
Odd integers between 2 and 22 = 3, 5, 7,....., 21

This is an A.P. with first term = $a = 3$ and $d = 2$

Let number of terms = n

=> Last term = $a + (n-1)d$

=> $3 + (n-1)2 = 21$

=> $(n-1)2 = 21-3 = 18$

=> $(n-1) = \frac{18}{2} = 9$

=> $n = 9+1 = 10$

Sum of series = $\frac{n}{2}(a+l)$

= $\frac{10}{2}(3+21)$

= $5 \times 24 = 120$

$\therefore$ Average = $\frac{120}{10} = 12$

=> Ans - (D)

Question 104

The least number that should be subtracted from the number 32146 to make it a perfect square is:

A 205

B 405

C 105

D 305

Answer: C

Explanation:
Since, $32146 < 32400 = (18)^2$

Thus, the least number that should be subtracted from the number 32146 to make it a perfect square = $32146 - (179)^2$

= $32146 - 32041 = 105$

=> Ans - (C)

Question 105

The diameter of a 120 cm long roller is 84 cm. It takes 500 complete revolutions of the roller to level a ground. The cost of levelling the ground at ₹1.50 per sq.m. is:

A ₹2376

B ₹6000

C ₹3762

D ₹5750

Answer: A

Explanation:
Radius of cylinderical roller = 42 cm and height = 120 cm

=> Distance covered in 1 revolution by the roller = Curved surface area of the roller = $2\pi rh$

= $2 \times \frac{22}{7} \times 42 \times 120$

= $44 \times 6 \times 120 = 31680\, cm^2 = 3.168\, m^2$

=> Total distance covered in 500 revolutions = $500 \times 3.168 = 1584\, m^2$

Now, cost of levelling the $1\, m^2$ ground = Rs. 1.50

$\therefore$ Total cost required = $1584 \times 1.50 = Rs.\, 2376$

=> Ans - (A)

Question 106

Mr. Dutta desired to deposit his retirement benefit of ₹3 lacs partly to a post office and partly to a bank at 10% and 6 % interests respectively. If his monthly interest income was ₹2000, then the difference of his deposits in the post office and in the bank was:

A Nil

B ₹1,00,000

C ₹50,000

D ₹40,000

Answer: A

Explanation:
Let the amount deposited in bank = Rs. $100x$ and in post office = Rs. $(3,00,000 - 100x)$

Time period = $\frac{1}{12}$ years

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

According to ques,

=> $(\frac{100x \times 6 \times 1}{12 \times 100}) + (\frac{(3,00,000 - 100x) \times 10 \times 1}{12 \times 100}) = 2000$

=> $(\frac{x}{2}) + (2500 - \frac{5x}{6}) = 2000$

=> $\frac{5x}{6} - \frac{x}{2} = 2500 - 2000$

=> $\frac{x}{3} = 500$

=> $x = 500 \times 3 = 1500$

Thus, amount deposited in bank = $100 \times 1500 = Rs.\, 1,50,000$

Amount deposited in post office = $3,00,000 - 1,50,000 = Rs.\, 1,50,000$

$\therefore$ Difference of his deposits in the post office and in the bank = 0

=> Ans - (A)

Question 107

Volume of a right circular cylinder of height 21 cm and base radios 5 cm is:

A $1255\ cm^3$

B $1650\ cm^3$

C $1175\ cm^3$

D $1050\ cm^3$

Answer: B

Explanation:
Radius of cylinder = 5 cm and height = 21 cm

Volume of cylinder = $\pi r^2 h$

= $\frac{22}{7} \times (5)^2 \times 21$

= $22 \times 25 \times 3 = 1650\ cm^3$

=> Ans - (B)

Question 108

A right triangle with sides 9 cm, 12 cm and 15 cm is rotated about the side of 9 cm to form a cone. The volume of the cone so formed is:

A $324\pi cm^3$

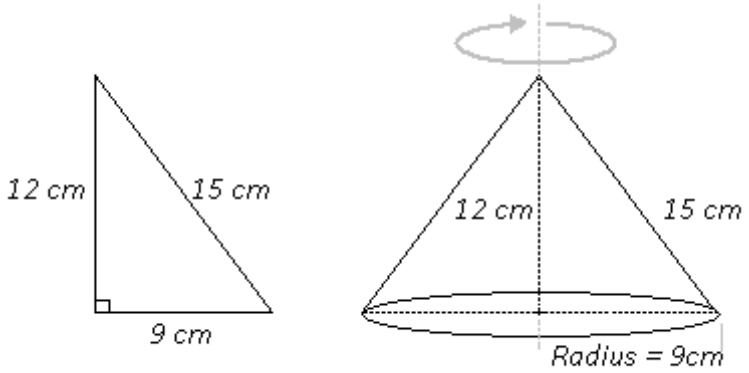
B $330\pi cm^3$

C $334\pi cm^3$

D $327\pi cm^3$

Answer: A

Explanation:



Clearly, we have radius $r = 9$ cm and height $h = 12cm$

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

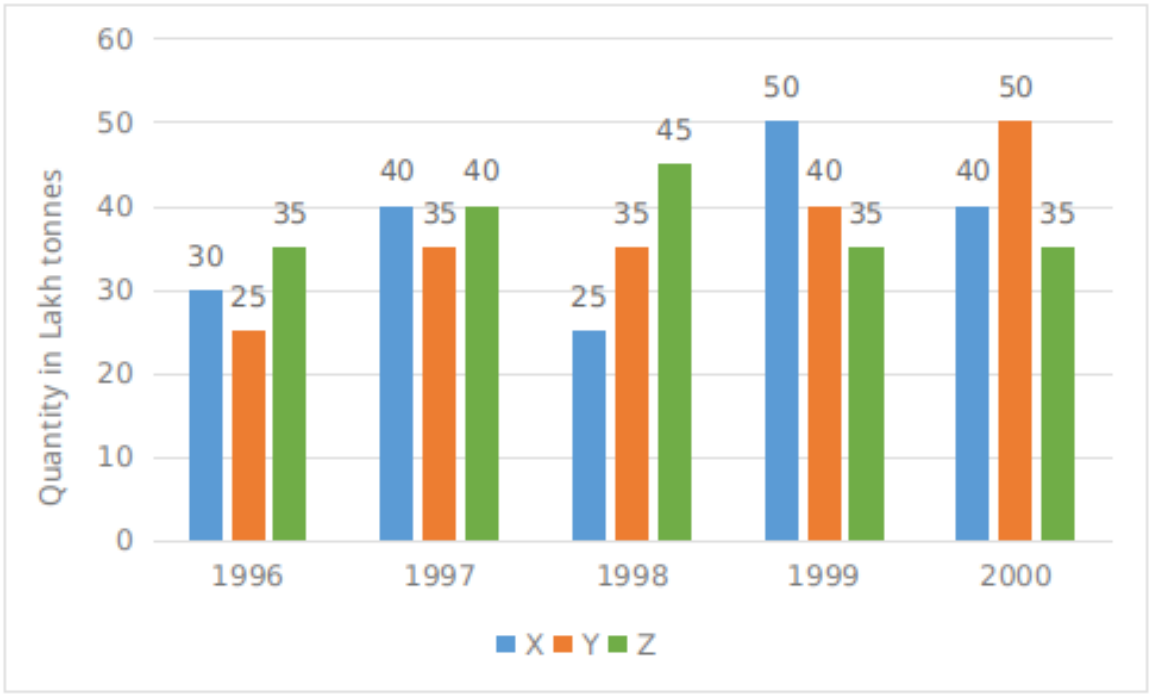
= $\frac{1}{3}\pi \times (9)^2 \times 12$

= $81 \times 4 \times \pi = 324\pi\ cm^3$

=> Ans - (A)

Instructions

The bar graph provided below gives the data of the production of paper (in lakh tonnes) by three different companies X, Y, Z over the years. Study the bar chart and answer the following question



Question 109

The difference between the production of company Z in 1998 and company Y in 1996 is:

A 15,00,000 tonnes

B 25,00,000 tonnes

C 20,00,000 tonnes

D 10,00,000 tonnes

Answer: C

Explanation:
Production of company Z in 1998 = 45,00,000 tonnes

Production of company Y in 1996 = 25,00,000 tonnes

=> Required difference = $45,00,000 - 25,00,000 = 20,00,000$ tonnes

=> Ans - (C)

Question 110

The average production for five years is maximum for company ?

A Z

B X and Z

C Y

D X

Answer: A

Explanation:
Average production for five years (in lakhs tonnes) for company :

X = $\frac{(30+40+25+50+40)}{5} = \frac{185}{5} = 37$

Y = $\frac{(25+35+35+40+50)}{5} = \frac{185}{5} = 37$

Z = $\frac{(35+40+45+35+35)}{5} = \frac{190}{5} = 38$ **[MAX]**

=> Ans - (A)

Question 111

The percentage increase in the production of company Y from 1996 to 1999 is:

A 60%

B 55%

C 50%

D 40%

Answer: A

Explanation:
Production of company Y in 1996 (in lakhs tonnes) = 25

Production of company Y in 1999 (in lakhs tonnes) = 40

=> Required % increase = $\frac{(40-25)}{25} \times 100$

= $15 \times 4 = 60\%$

=> Ans - (A)

Question 112

The ratio of the average production of company X in the period 1998-2000 to the average production of company Y in the same period is

A 27 : 29

B 23 : 25

C 25 : 26

D 24 : 27

Answer: B

Explanation:
Average production (in lakhs tonnes) for company X in the period 1998-2000

= $\frac{(25+50+40)}{3} = \frac{115}{3}$

Average production (in lakhs tonnes) for company Y in the period 1998-2000

= $\frac{(35+40+50)}{3} = \frac{125}{3}$

=> Required ratio = $\frac{115}{3} : \frac{125}{3} = 23 : 25$

=> Ans - (B)

Question 113

The percentage of production of company Z to the production of company Y is maximum in:

A 1999

B 2000

C 1996

D 1998

Answer: C

Explanation:
Ratio of production of company Z to company Y (in lakhs tonnes) in the year :

(A) : 1999 = $\frac{35}{40} = 0.875$

(B) : 2000 = $\frac{35}{50} = 0.7$

(C) : 1996 = $\frac{35}{25} = 1.4$ **[MAX]**

(D) : 1998 = $\frac{45}{35} = 1.28$

=> Ans - (C)

Instructions
For the following questions answer them individually

Question 114

If 12 men working 8 hours a day complete the work in 10 days, how long would 16 men working 7 1/2 hours a day take to complete the same work ?

A 8

B 6

C 7

D 10

Answer: A

Explanation:
Using, $M_1 D_1 H_1 = M_2 D_2 H_2$, where M is number of men, D is number of days and H is number of hours

According to ques,

=> $12 \times 10 \times 8 = 16 \times D_2 \times \frac{15}{2}$

=> $120 = 15 D_2$

=> $D_2 = \frac{120}{15} = 8$

=> Ans - (A)

Question 115

The average age of mother and her six children is 12 years, which is reduced by 5 years if the age of the mother is excluded. The age of the mother (in yrs) is:

A 48

B 40

C 42

D 50

Answer: C

Explanation:
Average age of mother and her six children = 12 years

=> Total age of 7 persons = $12 \times 7 = 84$ years

Let mother's age = x years

According to ques,

=> $\frac{(84-x)}{6} = 7$

=> $84 - x = 7 \times 6 = 42$

=> $x = 84 - 42 = 42$ years

=> Ans - (C)

Question 116

If $x = a(sin\ \theta + cos\ \theta)$ and $y = (sin\ \theta - cos\ \theta)$, then the value of $\frac{x^2}{a^2} + \frac{y^2}{b^2}$ is:

A 3

B 4

C 2

D 1

Answer: C

Explanation:
Given : $x = a(sin\ \theta + cos\ \theta)$ and $y = (sin\ \theta - cos\ \theta)$

Squaring both sides, we get :

=> $x^2 = a^2(sin\ \theta + cos\ \theta)^2$

=> $x^2 = a^2(sin^2\ \theta + cos^2\ \theta + 2sin\ \theta.cos\ \theta)$

=> $x^2 = a^2(1 + 2sin\ \theta.cos\ \theta)$

=> $\frac{x^2}{a^2} = 1 + 2sin\ \theta.cos\ \theta$ ----------(i)

Similarly, $\frac{y^2}{b^2} = 1 - 2sin\ \theta.cos\ \theta$ ----------(i)

Adding both equations (i) and (ii),

=> $\frac{x^2}{a^2} + \frac{y^2}{b^2} = (1 + 2sin\ \theta.cos\ \theta) + (1 - 2sin\ \theta.cos\ \theta)$

= $1 + 1 = 2$

=> Ans - (C)

Question 117

If $a^2+b^2+c^2=2(a-b-c)-3$, then the value of a+b+c is;

A 1

B -1

C -2

D 2

Answer: B

Explanation:
Given : $a^2+b^2+c^2=2(a-b-c)-3$

=> $a^2+b^2+c^2=2a-2b-2c-3$

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

=> $(a^2-2a+1)+(b^2+2b+1)+(c^2+2c+1)=0$

=> $(a-1)^2+(b+1)^2+(c+1)^2=0$

∵ Sum of all positive terms is '0', then each term is equal to zero.

=> $(a-1)=0$ and $(b+1)=0$ and $(c+1)=0$

=> $a=1, b=-1, c=-1$

$\therefore (a+b+c)=1+(-1)+(-1)=-1$

=> Ans - (B)

Question 118

If x+y=4, x^2+y^2 = 14 and x > y, Then the correct value of x and y is:

A 3, 1

B $2-\sqrt{2}, \sqrt{3}$

C $2+\sqrt{3}, 2-\sqrt{3}$

D $2+\sqrt{3}, 2\sqrt{3}$

Answer: C

Explanation:
Given : $x+y=4$ and $x^2+y^2=14$ ----------(i)

Squaring both sides, we get :

=> $(x+y)^2 = (4)^2$

=> $x^2 + y^2 + 2xy = 16$

=> $14 + 2xy = 16$

=> $2xy = 16 - 14 = 2$

=> $xy = 1$

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

Substituting it in equation (i), => $x + \frac{1}{x} = 4$

=> $x^2 - 4x + 1 = 0$

=> $x = \frac{4 \pm \sqrt{(-4)^2 - 4(1)(1)}}{2}$

=> $x = \frac{4 \pm \sqrt{12}}{2}$

=> $x = \frac{4 \pm 2\sqrt{3}}{2}$

=> $x = 2 \pm \sqrt{3}$

$\because x > y$ => $x = 2 + \sqrt{3}$ and $y = 2 - \sqrt{3}$

=> Ans - (C)

Question 119

If $Cos\ \theta + Sin\ \theta$ = m and $Sec\ \theta + Cosec\ \theta$= n then the value of n($m^2 - 1$) is equal to:

A 2n

B 4mn

C mn

D 2m

Answer: D

Explanation:

Given : $cos\ \theta + sin\ \theta = m$ ----------(i)

Squaring both sides, we get :

=> $(cos\ \theta + sin\ \theta)^2 = (m)^2$

=> $cos^2\ \theta + sin^2\ \theta + 2sin\ \theta.cos\ \theta = m^2$

=> $1 + 2sin\ \theta.cos\ \theta = m^2$

=> $sin\ \theta.cos\ \theta = \frac{m^2 - 1}{2}$ ----------(ii)

Also, it is given that : $sec\ \theta + cosec\ \theta = n$

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

=> $\frac{sin\,\theta+cos\,\theta}{sin\,\theta.cos\,\theta} = n$

Using equations (i) and (ii), => $m = \frac{m^2-1}{2} \times n$

=> $n(m^2 - 1) = 2m$

=> Ans - (D)

Question 120

The value of $\frac{1}{1+\sqrt{2}+\sqrt{3}} + \frac{1}{1-\sqrt{2}+\sqrt{3}}$ is:

A 1

B $4(\sqrt{3} + \sqrt{2})$

C $\sqrt{3}$

D $\sqrt{2}$

Answer: A

Explanation:
Expression : $\frac{1}{1+\sqrt{2}+\sqrt{3}} + \frac{1}{1-\sqrt{2}+\sqrt{3}}$

Rationalizing the denominator, we get :

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

= $[\frac{1+\sqrt{3}-\sqrt{2}}{(1+\sqrt{3})^2-(\sqrt{2})^2}] + [\frac{1+\sqrt{3}+\sqrt{2}}{(1+\sqrt{3})^2-(\sqrt{2})^2}]$

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

= $\frac{2+2\sqrt{3}}{2+2\sqrt{3}} = 1$

=> Ans - (A)

Question 121

If the radius of a sphere is increased by 2 cm, then its surface area increases by 352 cm^2. The radius of the sphere initially was: (use $\pi = \frac{22}{7}$)

A 3 cm

B 4 cm

C 6 cm

D 5 cm

Answer: C

Explanation:
Let initial radius = r cm

Initial surface area = $4\pi r^2$

New radius = $(r + 2)$ cm

=> New surface area = $4\pi(r + 2)^2 = 4\pi r^2 + 352$

=> $4\pi r^2 + 16\pi r + 16\pi = 4\pi r^2 + 352$

=> $16\pi(r + 1) = 352$

=> $(r + 1) = \frac{352}{16} \times \frac{7}{22}$

=> $(r + 1) = 7$

=> $r = 7 - 1 = 6$ cm

=> Ans - (C)

Question 122

The ratio of two numbers is 3: 4 and their HCF is 15. Then the sum of the two numbers is:

A 105

B 120

C 115

D 110

Answer: A

Explanation:
Let the numbers be $3x$ and $4x$. Since, the numbers are co-prime, their H.C.F. = x

According to ques, => $x = 15$

$\therefore$ Sum of numbers = $3x + 4x = 7x$

= $7 \times 15 = 105$

=> Ans - (A)

Question 123

A shopkeeper fixes the price of an article at 30% higher than its actual cost. If he sells it at 10% discount on marked price then, the profit is:

A 18%

B 17%

C 19%

D 20%

Answer: B

Explanation:
Let cost price = Rs. 100

Markup % = 30%

=> Marked price = $100 + (\frac{30}{100} \times 100)$

= $100 + 30 = Rs. 130$

Discount % = 10%

=> Selling price = $130 - (\frac{10}{100} \times 130)$

= $130 - 13 = Rs. 117$

$\therefore$ Profit % = $\frac{(117-100)}{100} \times 100 = 17\%$

=> Ans - (B)

Question 124

The three successive angles of a cyclic quadrilateral are in the ratio 1:3:4, find the measure of the fourth angle ?

A 30°

B 72°

C 36°

D 108°

Answer: B

Explanation:
Let the angles be $x, 3x$ and $4x$ respectively.

Sum of opposite angles in a cyclic quadrilateral = 180°

=> $x + 4x = 5x = 180^\circ$

=> $x = \frac{180}{5} = 36^\circ$

=> 2nd angle = $3 \times 36 = 108^\circ$

$\therefore$ 4th angle (opposite 2nd angle) = $180^\circ - 108^\circ = 72^\circ$

=> Ans - (B)

Question 125

If the Cost Price of 25 chairs is equal to the Selling Price of 30 chairs, then the loss % is:

A $16\ \frac{2}{3}\%$

B 25%

C 20%

D 5%

Answer: A

Explanation:
Let C.P. of 1 chair = Rs. x and S.P. of 1 chair = Rs. y

According to ques, => $25x = 30y$

=> $\frac{x}{y} = \frac{30}{25} = \frac{6}{5}$

Let $x = 6$ and $y = 5$

$\therefore$ Loss % = $\frac{(x-y)}{x} \times 100$

= $\frac{(6-5)}{6} \times 100 = \frac{50}{3}$

= $16\ \frac{2}{3}\%$

=> Ans - (A)

Question 126

The liquids, X and Y are mixed in the ratio of 3: 2 and the mixture is sold at ₹11 per litre at a profit of 10%. If the liquid X costs ₹2 more per litre then Y, the cost of X per litre is (in ₹):

A 9.50

B 10.80

C 11.75

D 11

Answer: B

Explanation:
Selling price of mixture = Rs. 11 at 10% profit

=> Cost price of 1 litre of mixture = $\frac{11}{100+10} \times 100 = Rs.\ 10$

Let cost of liquid X = Rs. x, => Cost of liquid Y = Rs. $(x - 2)$

The liquids are mixed in the ratio of 3 : 2. In 5 liters of the mixture, 3 liters will be first liquid and 2 liters will be the second liquid.

Thus, cost of 5 litres of mixture = $3x + 2(x - 2) = 5 \times 10$

=> $3x + 2x - 4 = 50$

=> $5x = 50 + 4 = 54$

=> $x = \frac{54}{5} = Rs.\ 10.80$

=> Ans - (B)

Question 127

The value of the expression $Sin^2 1^\circ + Sin^2 11^\circ + Sin^2 21^\circ + Sin^2 31^\circ + Sin^2 41^\circ + Sin^2 45^\circ + Sin^2 49^\circ + Sin^2 59^\circ + Sin^2 69^\circ + Sin^2 79^\circ + Sin^2 89^\circ$

A 5

B $5\frac{1}{2}$

C 0

D $4\frac{1}{2}$

Answer: B

Explanation:

Expression : $Sin^2 1^\circ + Sin^2 11^\circ + Sin^2 21^\circ + Sin^2 31^\circ + Sin^2 41^\circ + Sin^2 45^\circ + Sin^2 49^\circ + Sin^2 59^\circ + Sin^2 69^\circ + Sin^2 79^\circ + Sin^2 89^\circ$

= $(Sin^2 1^\circ + Sin^2 89^\circ) + (Sin^2 11^\circ + Sin^2 79^\circ) + (Sin^2 21^\circ + Sin^2 69^\circ) + (Sin^2 31^\circ + Sin^2 59^\circ) + (Sin^2 41^\circ + Sin^2 49^\circ) + (Sin^2 45^\circ)$

= $[Sin^2 1^\circ + Sin^2(90^\circ - 1^\circ)] + [Sin^2 11^\circ + Sin^2(90^\circ - 11^\circ)] + [Sin^2 21^\circ + Sin^2(90^\circ - 21^\circ)] + [Sin^2 31^\circ + Sin^2(90^\circ - 31^\circ)] + [Sin^2 41^\circ + Sin^2(90^\circ - 41^\circ)] + [Sin^2 45^\circ]$

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

= $(Sin^2 1^\circ + Cos^2 1^\circ) + (Sin^2 11^\circ + Cos^2 11^\circ) + (Sin^2 21^\circ + Cos^2 21^\circ) + (Sin^2 31^\circ + Cos^2 31^\circ) + (Sin^2 41^\circ + Cos^2 41^\circ) + (Sin^2 45^\circ)$

Using, $sin^2\ \theta + cos^2\ \theta = 1$

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

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

=> Ans - (B)

Question 128

The average of 8 numbers is 21. If each of the numbers is multiplied by 8, the average of the new set of numbers is

A 29

B 168

C 21

D 8

Answer: B

Explanation:
Average of 8 numbers = 21

=> Sum of numbers = $21 \times 8 = 168$

If each of the numbers is multiplied by 8, then the total sum is also multiplied by 8, => New sum = 168×8

$\therefore$ Average of new set = $\frac{168 \times 8}{8} = 168$

=> Ans - (B)

Question 129

If x (x+y+z) = 20, y (x+y+z) = 30, & z(x+y+z)=50, then the value of 2(x+y+z) is:

A -10

B 15

C 18

D 20

Answer: D

Explanation:
Given : $x(x+y+z) = 20$

=> $x^2 + xy + xz = 20$ ----------(i)

Similarly, => $y^2 + xy + yz = 30$ ----------(ii)

and $z^2 + xz + yz = 50$ ----------(iii)

Adding equations (i), (ii) and (iii), we get :

=> $(x^2 + y^2 + z^2) + 2(xy + yz + xz) = 20 + 30 + 50$

=> $(x+y+z)^2 = 100$

=> $(x+y+z) = \sqrt{100} = 10$

$\therefore 2(x+y+z) = 2 \times 10 = 20$

=> Ans - (D)

Question 130

If Cos A + Sin A = $\sqrt{2}$ Cos A then Cos A- Sin A is equal to: (Where 0° <A< 90°)

A $\sqrt{2SinA}$

B $\sqrt{SinA}$

C $\sqrt{2}SinA$

D 2 Sin A

Answer: C

Explanation:
Given : $cosA + sinA = \sqrt{2}cosA$

Squaring both sides, we get :

=> $(cosA + sinA)^2 = (\sqrt{2}cosA)^2$

=> $cos^2A + sin^2A + 2sinA.cosA = 2cos^2A$

=> $1 + 2sinA.cosA = 2(1 - sin^2A)$

=> $1 + 2sinA.cosA = 2cos = 2 - 2sin^2A$

=> $2sinA.cosA = 2cos = 1 - 2sin^2A$ ----------(i)

To find : $cosA - sinA = x$

Squaring both sides, we get :

=> $x^2 = cos^2A + sin^2A - 2sinA.cosA$

Substituting value from equation (i),

=> $x^2 = 1 - (1 - 2sin^2A)$

=> $x^2 = 2sin^2A$

=> $x = \sqrt{2sin^2A}$

=> $x = \sqrt{2}sinA$

=> Ans - (C)

Question 131

The straight line y=3x must pass through the point:

A (0,1)

B (0,0)

C (2,0)

D (1,2)

Answer: B

Explanation:
Equation of line = $y = 3x$

(A) : (0,1)

=> L.H.S. = $1 \neq$ R.H.S. = $3(0) = 0$

(B) : (0,0)

=> L.H.S. = $0 =$ R.H.S. = $3(0) = 0$

=> Ans - (B)

Question 132

Find out the wrong number in the sequence:

A 640

B 2560

C 40

D 200

Answer: D

Explanation:
The sequence followed is that each number is multiplied by '4'

40 $\times 4$ = 160

160 $\times 4$ = 640

640 $\times 4$ = 2560

Thus, 200 is the odd one out.

=> Ans - (D)

Question 133

AB is a diameter of a circle having centre at O, PQ is a chord which does not intersect AB. Join AP and BQ. If $\angle$BAP=$\angle$ABQ, then ABQP is a:

A Cyclic trapezium

B Cyclic square

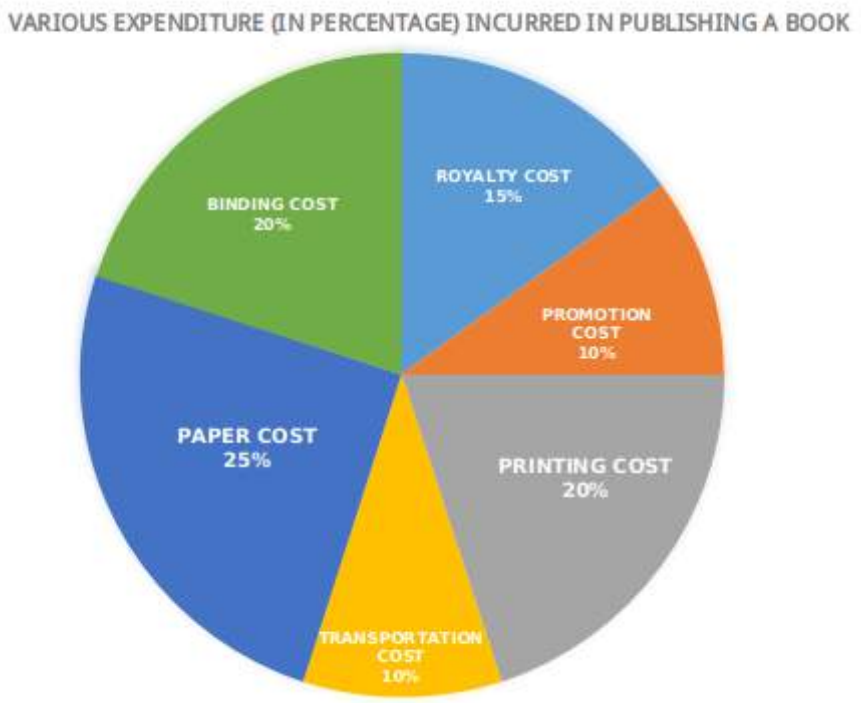
C Cyclic rectangle

D Cyclic rhombus

Answer: E

Instructions

The following pie-chart shows the percentage distribution of the expenditure incurred in publishing a book. Read the pie-chart and answer the questions.



Question 134

Royalty on the book is less than the printing cost by:

A 20%

B 5%

C 25%

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

Answer: C

Explanation:
Percentage distribution on royalty cost = 15%

Percentage distribution on printing cost = 20%

=> Royalty on the book is less than the printing cost by = $\frac{(20-15)}{20} \times 100$

= $5 \times 5 = 25\%$

=> Ans - (C)

Question 135

If for a certain quantity of books, the publisher has to pay ₹30600 as printing cost, then the amount of royalty cost to be paid for these books is:

A ₹21200

B ₹19450

C ₹22950

D ₹26150

Answer: C

Explanation:
Percentage distribution on royalty cost = 15%

Percentage distribution on printing cost = 20%

According to ques, => $20\% \equiv 30,600$

=> $15\% \equiv \frac{30,600}{20} \times 15$

= Rs. $22,950$

=> Ans - (C)

Question 136

If 5500 copies are published and the transportation cost on them amounts to ₹8250, then the selling price of the book so that the publisher can earn a profit of 25% is:

A ₹175

B ₹180

C ₹187.50

D ₹191.50

Answer: C

Explanation:
Transportation cost of 1 book = $\frac{8250}{5500} = 1.5$

=> Percentage distribution on transportation cost = 10%

Thus, total cost price of a book = $\frac{1.5}{10} \times 100 = Rs.\ 150$

Profit % = 25%

=> Selling price = $150 + (\frac{25}{100} \times 150)$

= $150 + 37.50 = Rs. 187.50$

=> Ans - (C)

Question 137

The central angle of the sector corresponding to the expenditure incurred on Royalty is:

A 54°

B 24°

C 15°

D 48°

Answer: A

Explanation:
Percentage distribution on royalty cost = 15%

=> Central angle of the sector corresponding to the expenditure incurred on Royalty = $\frac{15}{100} \times 360^\circ$

= $15 \times 3.6 = 54^\circ$

=> Ans - (A)

Instructions
For the following questions answer them individually

Question 138

In what proportions must water be added with milk to gain 20% by selling the mixture at cost price ?

A 5 : 1

B 1 : 1

C 1 : 5

D 4 : 1

Answer: C

Explanation:
For 100 litres of milk to get 20% profit, we need to sell = $100 + (\frac{20}{100} \times 100) = 120$ litres

Thus, water added = $120 - 100 = 20$ litres

=> Required ratio = $\frac{20}{100} = 1 : 5$

=> Ans - (C)

Question 139

The centroid of an equilateral triangle ABC is G and AB=10 cm. The length of AG (in cm)

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

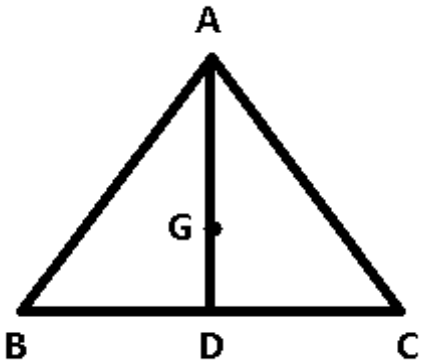
B $\frac{10\sqrt{3}}{3}$

C $\frac{\sqrt{3}}{3}$

D $\frac{10}{\sqrt{3}}$

Answer: B

Explanation:



G is the centroid of $\triangle$ ABC and AB = 10 cm.

Also, a centroid divides the median in the ratio = $AG : GD = 2 : 1$

Now, median AD = $\frac{\sqrt{3}}{2} \times 10 = 5\sqrt{3}$ cm

$\therefore$ AG = $\frac{2}{(2+1)} \times 5\sqrt{3}$

= $\frac{10\sqrt{3}}{3}$ cm

=> Ans - (B)

Question 140

If $\frac{x - x\ tan^2\ 30^\circ}{1 + tan^2\ 30^\circ} = sin^2\ 30^\circ + 4\ cot^2\ 45^\circ - sec^2\ 60^\circ$ **Then value of x is:**

A $\frac{1}{\sqrt{3}}$

B $\frac{1}{5}$

C $\frac{1}{4}$

D $\frac{1}{2}$

Answer: D

Explanation:

Expression : $\frac{x-x\ tan^2\ 30^\circ}{1+tan^2\ 30^\circ} = sin^2\ 30^\circ + 4\ cot^2\ 45^\circ - sec^2\ 60^\circ$

=> $\frac{x-x(\frac{1}{\sqrt{3}})^2}{1+(\frac{1}{\sqrt{3}})^2} = (\frac{1}{2})^2 + 4(1)^2 - (2)^2$

=> $\frac{\frac{2x}{3}}{\frac{4}{3}} = \frac{1}{4} + 4 - 4$

=> $\frac{x}{2} = \frac{1}{4}$

=> $x = \frac{2}{4} = \frac{1}{2}$

=> Ans - (D)

Question 141

A train is 250 m long. If the train takes 50 seconds to cross a tree by the railway line, then the speed of the train in km/hr is:

A 10

B 5

C 18

D 9

Answer: C

Explanation:

Length of train = 250 m and time taken = 50 seconds

=> Speed = $\frac{250}{50} = 5$ m/s

Thus, speed (in km/hr) = $5 \times \frac{18}{5} = 18$ km/hr

=> Ans - (C)

Question 142

The marked price of a CD is ₹250. It is sold for ₹225. The rate of discount is:

A 10%

B $11\ \frac{1}{9}$%

C 25%

D 2.5%

Answer: A

Explanation:
Marked price = Rs. 250

Selling price = Rs. 225

=> Discount % = $\frac{(250-225)}{250} \times 100$

= $\frac{25}{2.5} = 10\%$

=> Ans - (A)

Question 143

Mohan purchased a bag with 20 percent discount on the tab called price. He sold it with 40 percent profit on the price he bought. The percentage of profit on the labelled price is:

A 24%

B 20%

C 18%

D 12%

Answer: D

Explanation:
Let Marked price = Rs. 100

Discount % = 20%

=> Mohan's cost price = $100 - (\frac{20}{100} \times 100) = Rs.\ 80$

Profit % = 40%

=> Selling price = $80 + (\frac{40}{100} \times 80)$

= $80 + 32 = Rs.\ 112$

$\therefore$ Percentage of profit on the labelled price = $\frac{(112-100)}{100} \times 100 = 12\%$

=> Ans - (D)

Question 144

If 5416 x 6 is a perfect square, then the digit at 'x' is:

A 9

B 4

C 5

D 6

Answer: A

Explanation:
A perfect square ending with '6' can only have an odd digit at its ten's place, i.e. second last digit. Thus second and last options are eliminated.

Now, $\sqrt{541656} < 736$

and $\sqrt{541696} = 736$

=> Ans - (A)

Question 145

Ram babu donated 3% of his income to a charity and deposited 12% of the rest in bank. If now he has ₹12804, then his income was:

A 17460

B 7500

C 15000

D 14550

Answer: C

Explanation:
Let income = Rs. $100x$

Amount left after donation = $100x - (\frac{3}{100} \times 100x) = Rs.\ 97x$

Amount left after depositing in bank = $97x - (\frac{12}{100} \times 97x)$

= $97x - 11.64x = Rs.\ 85.36x$

According to ques, => $85.36x = 12,804$

=> $x = \frac{12804}{85.36} = 150$

$\therefore$ Income = $100 \times 150 = Rs.\ 15,000$

=> Ans - (C)

Question 146

In $\triangle$ ABC, the internal bisectors of $\angle$B and $\angle$C meet at point D. If $\angle$A=80°, then $\angle$BDC is of:

A 130°

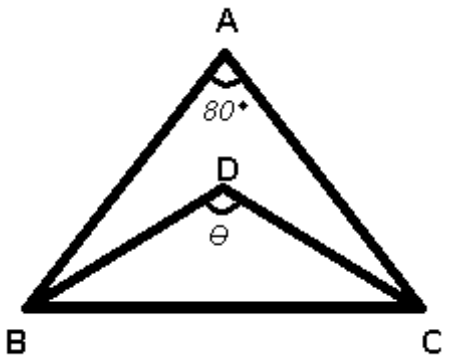
B 120°

C 100°

D 140°

Answer: A

Explanation:



Given : D is the incentre of $\triangle$ ABC and $\angle$ BAC = 80°
To find : $\angle$ BDC = θ = ?

Incentre of a triangle = $90^\circ + \frac{\angle A}{2}$

=> $\theta = 90^\circ + \frac{80^\circ}{2}$

=> $\theta = 90^\circ + 40^\circ$

=> $\theta = 130^\circ$

=> Ans - (A)

Question 147

A motor boat covers a certain distance downstream in a river in 3 hours. It covers the same distance upstream in 3 hours and half. If the speed of the water is 1.5 km/h, then the speed of the boat in still water is :

A 17.5 km/h

B 19 km/h

C 19.5 km/h

D 17 km/h

Answer: C

Explanation:
Let speed of boat = x km/hr

=> Downstream speed = $(x + 1.5)$ km and upstream speed = $(x - 1.5)$ km

$\because$ Distance travelled is same and speed is inversely proportional to time,

=> $\frac{x+1.5}{x-1.5} = \frac{3.5}{3}$

=> $3x + 4.5 = 3.5x - 5.25$

=> $3.5x - 3x = 4.5 + 5.25$

=> $\frac{x}{2} = 9.75$

=> $x = 9.75 \times 2 = 19.5$

$\therefore$ Speed of the boat in still water = 19.5 km/hr

=> Ans - (C)

Question 148

Let AX\ $\frac{1}{}$BC of an equilateral triangle ABC. Then the sum of the perpendicular distances of the sides of $\triangle$ ABC from any point inside the triangle is:

A Equal to AX

B Equal to BC

C Greater than AX

D Less than AX

Answer: E

Question 149

The sides of a triangle are in the ratio of 7:9:12 The difference between the lengths of largest and smallest sides is 15 cm. The length of the largest side would be:

A 36 cm

B 12 cm

C 60 cm

D 24 cm

Answer: A

Explanation:
Let the sides of the triangle be $7x, 9x, 12x$ cm respectively.

=> Difference between the lengths of largest and smallest sides = $12x - 7x = 15$

=> $5x = 15$

=> $x = \frac{15}{5} = 3$

$\therefore$ Largest side = $12 \times 3 = 36$ cm

=> Ans - (A)

Question 150

A boy aged 12 years is left with ₹100,000 which is under a trust. The trustees invest the money at 6% per annum and pay the minor boy a sum of ₹2500, for his pocket money at the end of each year. The expenses of trust come out to be ₹500 per annum. Find the amount that will be handed over to the minor boy after he attains the age of 18 years.

A ₹125000

B ₹120000

C ₹118000

D ₹150000

Answer: C

Explanation:
Sum after 12 years of age = Rs. 1,00,000

Rate of interest = 6% and time period = 6 years

=> Amount after 18 years = $P + \frac{P \times R \times T}{100}$

= $1,00,000 + \frac{1,00,000 \times 6 \times 6}{100}$

= $1,00,000 + 36,000 = Rs.\ 1,36,000$

Total expenses per year = $2500 + 500 = Rs.\ 3,000$

=> Total expenses for 6 years = $6 \times 3000 = Rs.\ 18,000$

$\therefore$ Amount attained = $1,36,000 - 18,000 = Rs.\ 1,18,000$

=> Ans - (C)

General

Awareness

Instructions
For the following questions answer them individually

Question 151

Which of the following states in known as the traditional region for Tank Irrigation ?

A Gujarat

B Tamil Nadu

C Assam

D Orrissa

Answer: E

Question 152

Origin of Life by 'Natural Selection' is a book written by:

A Charles Darwin

B Lamarck

C Hugo de Veris

D Charles Dickens

Answer: E

Question 153

Who is popularly known as the Grand Old Man of India ?

A Dadabhai Naroji

B Madan Mohan Malaviya

C Mahadeva Govinda

D Surendranath Banerjee

Answer: E

Question 154

Unit of resistance is:

A Volt

B Volt x ampere

C Ampere

D Latex1

Answer: E

Question 155

The gas liberated in the Bhopal gas tragedy was:

A Ethylene

B Pheynl iscoynate

C Methyl isocynate

D Acetylene

Answer: E

Question 156

Network of a series of vertical and horizontal lines constructed perpendiclar to each other is known as:

A Latitudes

B Grid system

C Longitude

D Geographic coordinates

Answer: E

Question 157

Then term “United Nations” was coined by:

A Lenin

B Churchill

C Stalin

D Roosevelt

Answer: E

Question 158

Breaking physical memory into fixed-sized blocks called as:

A Frames

B Packets

C Segments

D Page

Answer: E

Question 159

Venturimeter is used to measure:

A Rate of flow of liquids

B Liquid pressure

C Surface tension

D Liquid density

Answer: E

Question 160

Which of the following pairs of physical quantities have the same dimensions ?

A Work and Energy

B Force and Power

C Work and Power

D Momentum and Power

Answer: E

Question 161

Who is called as the “Prince of Moneyers?

A Ibrahim Lodhi

B Mohammad-Bin-Thuglaq

C Babar

D Akbar

Answer: E

Question 162

Which of the following species are critically cndangcred ?

A Forest Owlet

B The gyps vulture

C White bellied heron

D Gangetic Dolphin

Answer: E

Question 163

Which law states that with constant taste and preferences, the proportion of income spend on food stuff diminishes as income increases ?

A Gresham's Law

B Griffin’s Law

C Say’s Law

D Engel’s Law

Answer: E

Question 164

The first Nobel Prize in Economics was awarded to:

A Pau A. Samuelson

B Amartya Sen

C Jan Tinbergen and Regnar

D Stiglitz

Answer: E

Question 165

The term Ecosystem was proposed by:

A S.A. Forbes

B Vernadsky

C Thienemann

D A.G. Tansley

Answer: E

Question 166

Which of the following is responsible for fostering the development of dance, drama and music in India ?

A Sahitya Akademi

B National School of Drama

C Sangeet Natak Akademi

D Lalit Kala Akademi

Answer: E

Question 167

The main component of liquid bleach is:

A Hydrochloric acid

B Sodium Chloride

C Sodium hypochlorate

D Sodium hypochlorite

Answer: E

Question 168

International Women's Day is observed on:

A 8th March

B 15th October

C 3rd March

D 27th January

Answer: E

Question 169

VAT is imposed:

A On first state of production

B On all stages between production and sale

C On final stage of production

D Directly on Consumer

Answer: E

Question 170

Chile saltpeter is the common name of

A Potassium nitrate

B Sodium nitrate

C Sodium nitrite

D Potassium nitrite

Answer: E

Question 171

The nobel Peace Prize for 2014 has been awarded to:

A Kailash Satyarthi and Tawakkul Karman

B Barak Obama

C Kailash Satyarthi

D Kailash Satyarthi and Masala Yousafzai

Answer: E

Question 172

BOD stands for:

A Biochemical oxygen demand

B Biotic oxidation demand

C Biological oxygen demand

D Biological oxidation

Answer: E

Question 173

The highest tile in Jude is:

A 12th Dan

B Yellow Belt

C 10th Dan

D Black Belt

Answer: E

Question 174

Araneology is the study of:

A Study of aphids

B Study of spiders

C Rearing of bees

D Study of mites

Answer: E

Question 175

IMP stands for:

A International Monetary Function

B Indian Manufacturing Firm

C International Monetary Fund

D Interest Minimum Function

Answer: E

Question 176

In our country the Van Mahotsava day is celebrated on:

A 1st July

B 10th Aug

C 1st Dec

D 5th Oct

Answer: E

Question 177

Which type of switching is used in Internet ?

A Circut

B Telephone

C Packet

D Telex

Answer: E

Question 178

The strongest oxidizing agent among the following is:

A Oxygen

B Chlorine

C Fluorine

D Lodine

Answer: E

Question 179

Organic food is supposed to be better for human consumption because:

A It is too expensive to buy

B It is grown without the use of chemicals & synthetic pesticides

C It is grown in glass house & air light environment

D It depends on chemical & fertilizers

Answer: E

Question 180

Who translated 'Mahabharata' into Persian ?

A Badauni

B Abul Fazal

C Ibn-Batuta

D Babar

Answer: E

Question 181

The Ozone layer protects us from:

A Infrared rays

B Visible rays

C Cosmic rays

D Ultra-Violet rays

Answer: E

Question 182

Commercially valued cork is obtained from:

A Cedrus Deodara

B Cycas

C Ficus

D Quercus sp.

Answer: E

Question 183

The oath office is administered to the Governor by the:

A Chief Justice of High Court

B President

C Speaker of Legislative

D Chief Justice of India

Answer: E

Question 184

Gas engine was invented by:

A Davy

B Daimler

C Diesel

D Charles

Answer: E

Question 185

What is the superannuation period of Chief Justice of Supreme Court ?

A 60 years

B 62 years

C 65 years

D 66 years

Answer: E

Question 186

Scurvy

A Vitamin ‘B’

B Vitamin ‘A’

C Vitamin ‘D’

D Vitamin ‘C’

Answer: E

Question 187

Which brigadier was associated with Jallianwala Bagh tragedy ?

A General Harris

B General Dyer

C Colonel Wellesly

D Arthur Wellesly

Answer: E

Question 188

Arboriculture is the study of:

A Cultivation of trees and vegetables

B Science of plant life

C Art of garden cultivation

D Art of growing crops

Answer: E

Question 189

Approximate number of skeletal muscles:

A 206

B 200

C 500

D 700

Answer: E

Question 190

Which of the following was the early capital of the Rashtrakutas ?

A Sopara

B Ellora

C Vatapi

D Ajanta

Answer: E

Question 191

The “Recall Provision” to remove the elected office bearers from the local Self Government institution has been executed in:

A Madhya Pradesh

B Kerala

C Haryana

D Bihar

Answer: E

Question 192

What do you understand by the term 'Dark Fermentation' ?

A It is a method of reduce COD in the atmosphere

B It is a method to produce hydrogen as a fucl from waste water

C It is a method to produce methane from organic

D It is a method to dispose nuclear wastes

Answer: E

Question 193

Which of the following states having longest coastline in India ?

A Maharashtra

B Andhra Pradesh

C Tamil Nadu

D Gujarat

Answer: E

Question 194

Which of the Kushana ruler patronised Buddhism ?

A Kautilya

B Ashoka

C Vikramaditya

D Kanishka

Answer: E

Question 195

A cycle tyre bursts suddenly. This represents an:

A Isabaric process

B Isochoric process

C Isothermal process

D Adiabotic process

Answer: E

Question 196

Blue Revolution is related to:

A Poultry

B Fisheries

C Drinking water

D Space research

Answer: E

Question 197

Planimeter is used to measure:

A Areas

B Road distance

C Direction

D Height of a region

Answer: E

Question 198

Arundhati Roy is the author of the book:

A The Algebra Justice

B Half a life

C Truth, love and a little malice

D The Rising Sun

Answer: E

Question 199

Who built 'Adhai Din Ka Jhopra' or hut of two and half day's at Ajmer ?

A Qutbuddin Aibak

B Alauddin Khalji

C Balban

D Muhammad - bin - Tughlaq

Answer: E

Question 200

Deen Dayal Antyodaya Yojana launched on September 25, 2014 is related to:

A Women empowerment

B Food security to old age rural people

C Skill development in rural and urban areas

D Poverty alleviation among SC/ST

Answer: E

SSC CHSL 6 December 2015 Evening Shift

Reasoning

Instructions
For the following questions answer them individually

Question 1

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

A GARBAGE

B RANGER

C BARRING

D GARNER

Answer: A

Explanation:
The word 'HARBINGER' does not contain 2 A's or G's, thus the word *Garbage* cannot be formed.

=> Ans - (A)

Question 2

From the given alternatives words, select the word which can be formed using the letters of the given word.
ENDEARMENT

A TEMPER

B MEANS

C TENDER

D TENT

Answer: C

Explanation:
The word 'ENDEARMENT' does not contain 'P,S' or 2 T's, thus only *Tender* can be formed.

=> Ans - (C)

Question 3

If BOY is represented as 42, then GIRL is represented is

A 46

B 48

C 40

D 43

Answer: A

Explanation:
If all the letters of English alphabetical series are represented by consecutive natural numbers, i.e., A=1, B=2, C=3 and so on.

=> B=2, O=15, Y=25 $\equiv 2 + 15 + 25 = 42$

Similarly, GIRL $\equiv 7 + 9 + 18 + 12 = 46$

=> Ans - (A)

Instructions

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

Question 4

6 : 42 :: 5 :?

A 40

B 30

C 35

D 45

Answer: B

Explanation:
Expression : 6 : 42 :: 5 :?

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

Eg :- $6 : (6^2 + 6) = 6 : 42$

Similarly, $5^2 + 5 = 25 + 5 = 30$

=> Ans - (B)

Question 5

Hockey : India :: Baseball : ?

A USA

B Russia

C Australia

D China

Answer: A

Explanation:
Hockey is the national game of India, similarly Baseball is the national game of **USA**.

=> Ans - (A)

Question 6

Ant : Fly : Bee :: Hamster : Squirrel: ?

A Rodem

B Mouse

C Cat

D Spider

Answer: B

Explanation:
The three above the line are all insects. The hamster and squirrel are rodents, so the second option is correct because a mouse is also a rodent. The other three choices are not rodents.

=> Ans - (B)

Question 7

144 : 13 :: 49 ?

A 8

B 30

C 11

D 9

Answer: A

Explanation:
Expression : 144 : 13 :: 49 ?

The pattern followed is = $n : \sqrt{n} + 1$

Eg :- $144 : \sqrt{144} + 1 = 144 : 13$

Similarly, $\sqrt{49} + 1 = 7 + 1 = 8$

=> Ans - (A)

Question 8

ABDE GHJK MNPQ

A RTUW

B STVW

C CEFH

D RSUV

Answer: B

Explanation:
Expression : ABDE GHJK MNPQ

Every third letter of the English alphabetical series is omitted, i.e. 'C,F,I,L,O' are missing.

Similarly, the next term is = **STVW**

=> Ans - (B)

Question 9

ACE : GIK :: MOQ : ?

A SUW

B VXZ

C RTU

D STU

Answer: A

Explanation:
Expression = ACE : GIK :: MOQ : ?

The pattern followed is :

A	C	E
(+6)	(+6)	(+6)
G	I	K

Similarly, for MOQ :

M	O	Q
(+6)	(+6)	(+6)
S	U	W

=> Ans - (A)

Question 10

GNIDAER : READING :: NOITULOS :?

A Solunott

B Neilosoot

C Pollutice

D Solution

Answer: D

Explanation:
Expression : GNIDAER : READING

The second term is written in reverse order according to the first term, i.e. first letter at last position, second at second last position and so on.

Thus, reverse of NOITULOS : **SOLUTION**

=> Ans - (D)

Question 11

Book : Wallet :: Cell

A CaloraphyII

B Organics

C DNA

D Tissue

Answer: E

Question 12

21 : 3 :: 574 : ?

A 23

B 82

C 113

D 97

Answer: B

Explanation:
Expression = 21 : 3 :: 574 : ?

The pattern followed is = $n : \frac{n}{7}$

Eg :- $21 : \frac{21}{7} = 21 : 3$

Similarly, $\frac{574}{7} = 82$

=> Ans - (B)

Instructions

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

Question 13

A GLOVES

B SWEATER

C SHAWL

D UMBRELLA

Answer: D

Explanation:
Gloves, Sweater and Shawl are clothing items worn during winter, while an umbrella is carried during rainy season, hence it is the odd one out.

=> Ans - (D)

Question 14

A PORTRAIT

B DRAW

C PAINT

D SKETCH

Answer: A

Explanation:
A portrait is an engraving of a person, while draw, paint and sketch are verbs, hence portrait is the odd one out.

=> Ans - (A)

Question 15

A HAND

B NOSE

C MOUTH

D EYES

Answer: A

Explanation:
Nose, mouth and eyes are part of the face, hence hand is the odd one out.

=> Ans - (A)

Question 16

A 6 : 22

B 8 : 25

C 13 : 40

D 15 : 46

Answer: A

Explanation:
The pattern followed is = $n : 3n + 1$

(A) : $(3 \times 6) + 1 = 19 \neq 22$

(B) : $(3 \times 8) + 1 = 25$

(C) : $(3 \times 13) + 1 = 40$

(D) : $(3 \times 15) + 1 = 46$

=> Ans - (A)

Question 17

A 21

B 81

C 71

D 51

Answer: C

Explanation:
Among the given numbers, only 71 is prime, hence it is the odd one out.

=> Ans - (C)

Question 18

A MNOP

B VUTS

C RQPO

D HGFE

Answer: A

Explanation:
(A) : M (**+1** letter) = N (**+1** letter) = O (**+1** letter) = P

(B) : V (-1 letter) = U (-1 letter) = T (-1 letter) = S

(C) : R (-1 letter) = Q (-1 letter) = P (-1 letter) = O

(D) : H (-1 letter) = G (-1 letter) = F (-1 letter) = E

=> Ans - (A)

Question 19

A Latex1

B Q37Q

C Latex2

D latex3

Answer: E

Question 20

A 100

B 125

C 343

D 216

Answer: A

Explanation:
(A) : $100 = (10)^2$

(B) : $125 = (5)^3$

(C) : $343 = (7)^3$

(D) : $216 = (6)^3$

Thus, **100** is the odd one out.

=> Ans - (A)

Question 21

A VXB

B PSV

C DGJ

D FIL

Answer: A

Explanation:
(A) : V (**+2** letters) = X (**+4** letters) = B

(B) : P (+3 letters) = S (+3 letters) = V

(C) : D (+3 letters) = G (+3 letters) = J

(D) : F (+3 letters) = I (+3 letters) = L

=> Ans - (A)

Instructions

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

Question 22

6, 2, 9, 4, 12, ?

A 6, 15

B 4, 13

C 8, 24

D 13, 15

Answer: A

Explanation:
Series : 6, 2, 9, 4, 12, ?

It is a combination of 2 alternate series.

Even series (Multiples of 2) = 2, 4, *6*

Odd series (Multiples of 3) = 6, 9, 12, *15*

Thus, missing term = **6,15**

=> Ans - (A)

Question 23

A,D,H,M,S, ?

A T

B W

C X

D Z

Answer: D

Explanation:
The pattern followed is :

A + 3 = D

D + 4 = H

H + 5 = M

M + 6 = S

S + 7 = **Z**

=> Ans - (D)

Question 24

0, 3, 8, 15, ?

A 23

B 26

C 24

D 25

Answer: C

Explanation:
The pattern followed is :

$(1)^2 - 1 = 0$

$(2)^2 - 1 = 3$

$(3)^2 - 1 = 8$

$(4)^2 - 1 = 15$

$(5)^2 - 1 = 24$

=> Ans - (C)

Question 25

A C E Z X V G I K T R P ?

A M

B N

C O

D L

Answer: A

Explanation:
The above series is a combination of 2 alternate series (consisting 3 letters).

Odd series (+2 letters) : A C E , G I K , *M* O Q

Even series (-2 letters) : Z X V , T R P , N L J

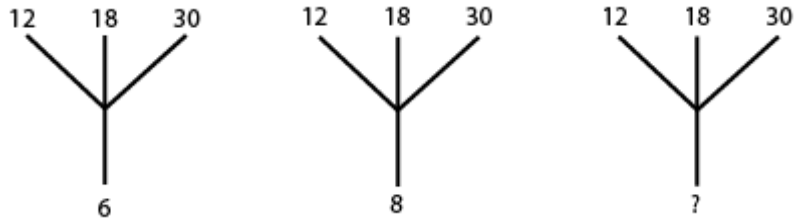
Thus, the next letter is = **M**

=> Ans - (A)

Instructions

Select the missing number from the given responses.

Question 26



A 12

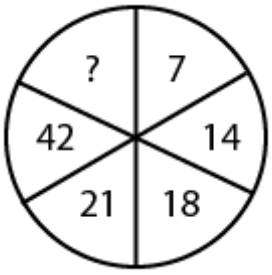
B 8

C 6

D 9

Answer: E

Question 27



A 58

B 45

C 54

D 42

Answer: C

Explanation:
The numbers on the vertical left side are thrice of numbers diagonally opposite to them.

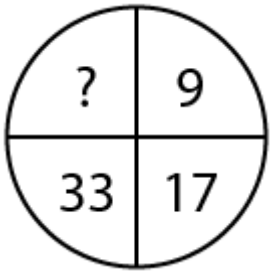
Eg :- $7 \times 3 = 21$

and $14 \times 3 = 42$

Similarly, $18 \times 3 = 54$

=> Ans - (C)

Question 28



A 60

B 65

C 68

D 55

Answer: B

Explanation:
Starting from 9 and moving clockwise direction, the pattern followed is :

$(9 \times 2) - 1 = 17$

$(17 \times 2) - 1 = 33$

$(33 \times 2) - 1 = 65$

=> Ans - (B)

Instructions
For the following questions answer them individually

Question 29

In a line, Naresh is 17^{th} from the left & 22^{nd} from the right How many students are there in the line ?

A 40

B 38

C 39

D 37

Answer: B

Explanation:
Naresh's position from left = 17th

His position from right = 22nd

=> Total students = $(17 + 22) - 1 = 39 - 1 = 38$

=> Ans - (B)

Question 30

Same equations have been solved on the basis of certain system. Find the correct answer for the unsolved equations on that basis ?
If $72 \times 19 = 23, 13 \times 48 = 35$ **and** $16 \times 43 = 18$ **then** $39 \times 22 = ?$

A 27

B 51

C 31

D 21

Answer: C

Explanation:
For the two digits of the two digit numbers, the pattern followed is : $(ab \times cd) = (a \times b) + (c \times d)$

Eg :- $72 \times 19 = (7 \times 2) + (1 \times 9) = 14 + 9 = 23$

and $13 \times 48 = (1 \times 3) + (4 \times 8) = 3 + 32 = 35$

Similarly, $39 \times 22 = (3 \times 9) + (2 \times 2) = 27 + 4 = 31$

=> Ans - (C)

Question 31

Which one set of letters when sequentially placed as the gups in the given letter series shall compare it ?
ab_cba_bcc_aabccb_ _bccba

A abcac

B cceab

C cabaa

D abcab

Answer: C

Explanation:
Expression : ab_cba_bcc_aabccb_ _bccba

The pattern followed is that in set of 3, the terms 'abc' and 'cba' are alternatively repeated.

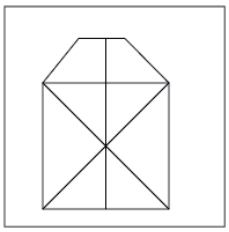
= ab**c** cba **a**bc c**b**a abc cb**a** **a**bc cba

=> Ans - (C)

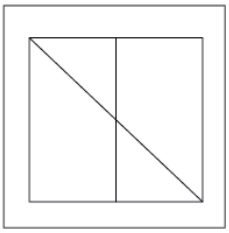
Question 32

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

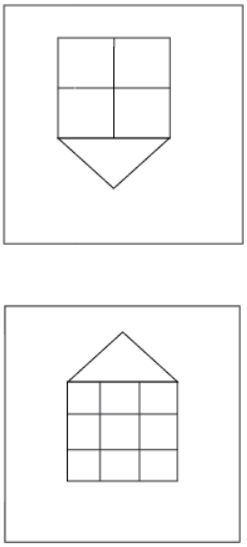
A



B



C



D

Answer: E

Question 33

If LISTEN is coded as 593417 then SILENT is coded as

A 591734

B 391754

C 591743

D 395174

Answer: D

Explanation:
Codes for each letter is given :

S -> 3
I -> 9
L -> 5
E -> 1
N -> 7
T -> 4

Thus, SILENT : **395174**

=> Ans - (D)

Question 34

What is the best way to order the progression in hardware ?
1. Silicon chips
2. Transistors
3. Vacuum tube
4. Integrated circuits

A 3, 4, 1, 2

B 4, 2, 3, 1

C 4, 1, 3, 2

D 3, 2, 4, 1

Answer: D

Explanation:
Order of progression in hardware is :

= Vacuum tube -> Transistors -> Integrated circuits -> Silicon chips

$\equiv$ 3, 2, 4, 1

=> Ans - (D)

Question 35

Of the 5 town A, B, C, D and I: situated close to each other is to the west of B.C is to the south of A.E. is to the north of B and D is to the east of E. Then C is in which direction was respect to D ?

A South-West

B North-West

C North-East

D South-East

Answer: E

Question 36

Karthik travelled 3 km east, then took a right and travelled 4kms. How far is he from starting point ?

A 12 kms

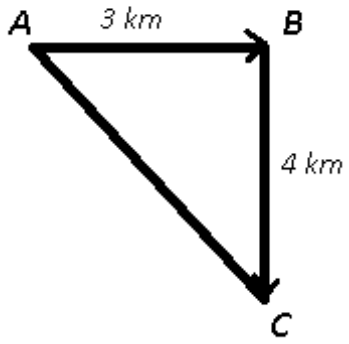
B 3 kms

C 7 Kms

D 5 kms

Answer: D

Explanation:



Let Karthik started from point A and travelled 3 km east, then took a right turn from B and travelled 4kms to stop at point C.

=> $(AC)^2 = (AB)^2 + (BC)^2$

=> $(AC)^2 = (3)^2 + (4)^2$

=> $(AC)^2 = 9 + 16 = 25$

=> $AC = \sqrt{25} = 5$ km

=> Ans - (D)

Question 37

Find the number of triangles in the following figure:

A 8

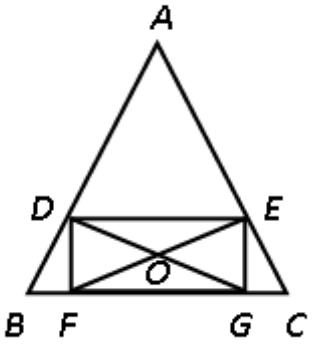
B 14

C 10

D 12

Answer: B

Explanation:



Small triangles = (ADE, BDF, CGE), (DOF, FOG, GOE, DOE) = 7

Triangles consisting 2 triangles = DFG, EFG, DEF, DEG = 4

Triangles consisting 3 triangles = CEF, BDG = 2

Large triangle = ABC = 1

Total number of triangles = 7 + 4 + 2 + 1 = 14

=> Ans - (B)

Question 38

Find out the set of numbers amongst: the four sets of numbers given in the alternative which is most like the set given is the cuestion.
(12, 24, 144)

A (15, 45, 90)

B (10, 25, 100)

C (14, 28, 112)

D (13, 26, 169)

Answer: D

Explanation:
The pattern followed is = $(n, 2n, n^2)$

Eg :- $12, (2 \times 12), (12)^2 = 12, 24, 144$

Similarly, $13, (2 \times 13), (13)^2 = 13, 26, 169$

=> Ans - (D)

Instructions

One/two statement are given, each followed by two conclusion/assumption, I and II you have to consider the statement to be true even if they seem to be at variance from commonly known facts you have to decide which of the given conclusion/assumptions. If any follows from the given statements

Question 39

Statement:
Continuous training is essential for all employees is increase their productivity
Assumptions:
1. Training is an essential component for productivity
2. Profitability & productivity are supplementary to each other

A Only assumption II is implicit

B Neither assumption I nor II arre implicit

C Both assumption I and II are implicit

D Assumption I is implicit

Answer: C

Explanation:
The given statement indicates that to increase the productivity, continuous training is essential for employees. Thus, assumption I is implicit. Also, statement II is implicit as profitability & productivity are supplementary to each other. It depends upon other factors also.

Thus, both assumption I and II are implicit.

=> Ans - (C)

Question 40

Statement:
Travelling by Metro in Delhi is more convenient and economical.
Assumption:
1. Other modes of transport are not available
2. Metro services are reasonably good

A Only Assumption I is implicit

B Neither I nor II are implicit

C Both I and II are implicit

D Only Assumption II is implicit

Answer: D

Explanation:
The statement indicates that Delhi metro is a convenient and economical means of transport. Assumption I is not implicit as there are also other modes of transport available. Assumption II is implicit as metro services are good.

=> Ans - (D)

Instructions
For the following questions answer them individually

Question 41

In a class of 45, Neha's rank is 15^{th} from first. What is her rank from the last ?

A 30

B 32

C 33

D 31

Answer: D

Explanation:
Total students = 45

Neha's rank from start = 15th

=> Her rank from last = $(45 - 15) + 1 = 30 + 1 = 31$

=> Ans - (D)

Question 42

If + means ÷, ÷ means x, and x means +, there following will be:
64 + 8 x 32 ÷ 4

A 128

B 160

C 136

D 144

Answer: C

Explanation:
Expression : 64 + 8 x 32 ÷ 4

$\equiv 64 \div 8 + 32 \times 4$

= $\frac{64}{8} + (32 \times 4)$

= $8 + 128 = 136$

=> Ans - (C)

Question 43

A word is represented by only one set of numbers as given in any one of the alternatives. The sets of numbers giver in the alternatives are represented by two classes of alphabets as in two matrices given below. The columns and rows of Matrix-I are numbered from 0 to 4 and that of Matrix-II are numbered form 5 to 9. A letter from these matrices can be represented first by its row and next by its column e.g. 'A' can be represented by 03, 14 etc., and 12 can be represented by 56, 65 etc., similarly, you have to identify the set for the word 'BRIDE'.

Matrix - I					
	0	1	2	3	4
0	E	S	P	A	R
1	R	E	S	P	A
2	A	R	E	S	P
3	P	A	R	E	S
4	S	P	A	R	E

Matrix - II					
	5	6	7	8	9
5	B	U	I	L	D
6	U	I	L	D	B
7	I	L	D	B	U
8	L	D	B	U	I
9	D	B	U	I	L

A 96, 03, 75, 67, 22

B 55, 57, 21, 22, 86

C 96, 03, 75, 85, 22

D 55, 21, 57, 86, 22

Answer: D

Explanation:
(A) : 96, 03, 75, 67, 22 = BAILE

(B) : 55, 57, 21, 22, 86 = BIRED

(C) : 96, 03, 75, 85, 22 = BAILE

(D) : 55, 21, 57, 86, 22 = **BRIDE**

=> Ans - (D)

Instructions

Arrange the following words as per order in the dictionary.

Question 44

1. Vorscions
2. Voucher
3. Vortex
4. Voluntary

A 2, 4, 1, 3

B 4, 1, 3, 2

C 1, 4, 2, 3

D 3, 1, 4, 2

Answer: B

Explanation:
As per the order of dictionary :

= Voluntary -> Vorscions -> Vortex -> Voucher

≡ 4, 1, 3, 2

=> Ans - (B)

Question 45

1. Absolute
2. Abrasive
3. Absorption
4. Abundance
5. Abiogenesis

A 2, 5, 1, 3, 4

B 3, 4, 5, 2, 1

C 5, 2, 3, 1, 4

D 5, 2, 1, 3, 4

Answer: D

Explanation:
As per the order of dictionary :

= Abiogenesis -> Abrasive -> Absolute -> Absorption -> Abundance

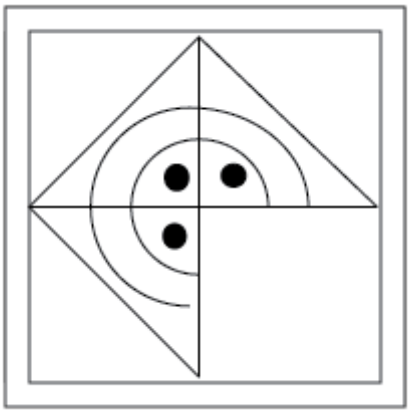
$\equiv$ 5, 2, 1, 3, 4

=> Ans - (D)

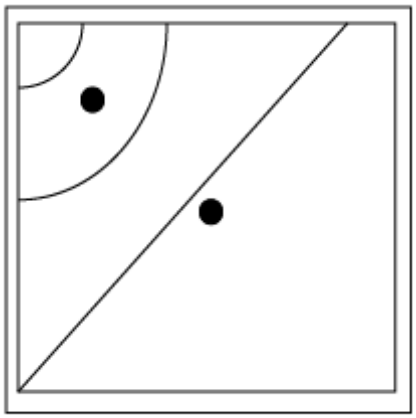
Instructions
For the following questions answer them individually

Question 46

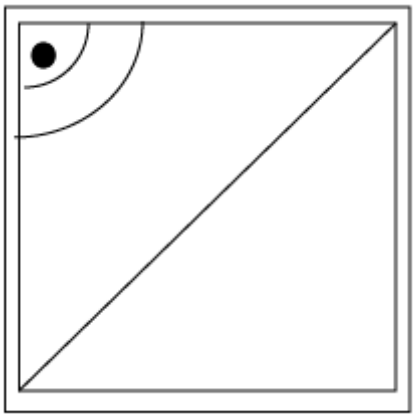
Which answer figure will complete the pattern in the question figure ?



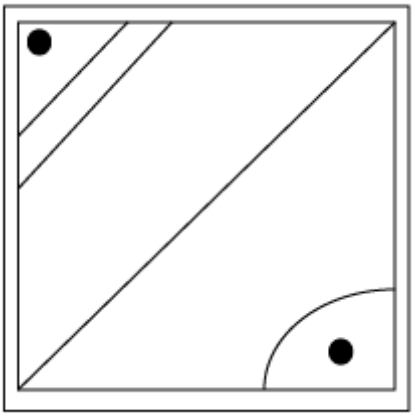
A



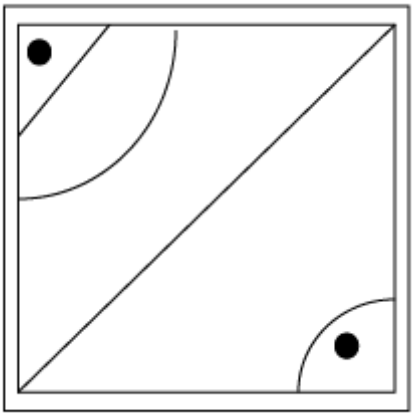
B



C



D

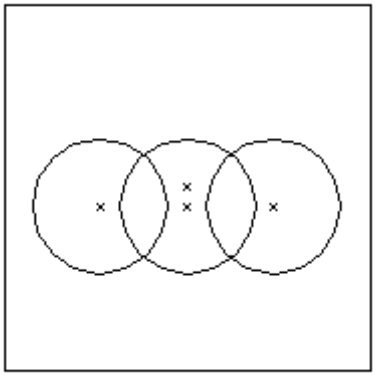


Answer: E

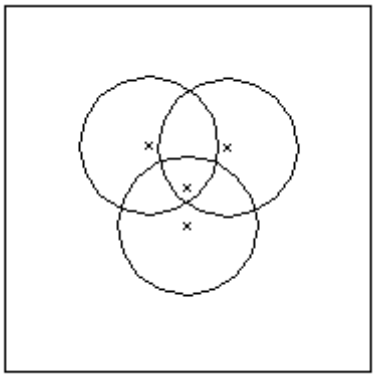
Question 47

Identify the diagram that best represents the relationship among classes given below.
Alphabets, Sprinters, Manthan maner

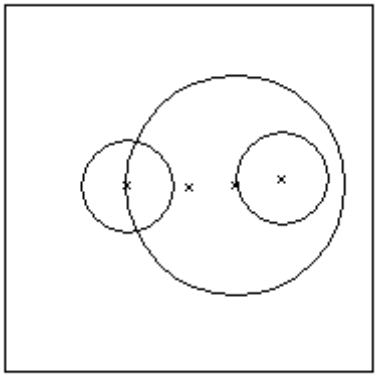
A



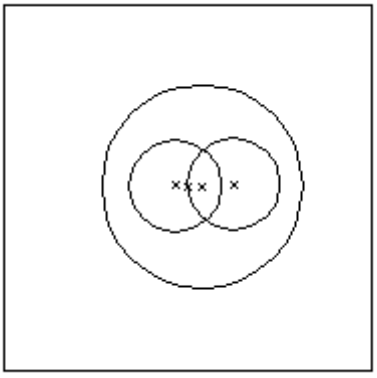
B



C



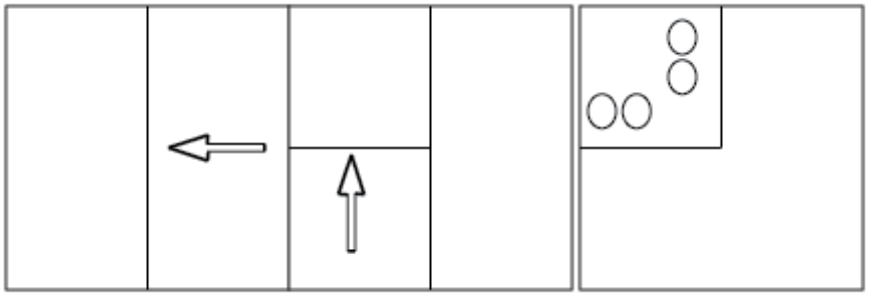
D



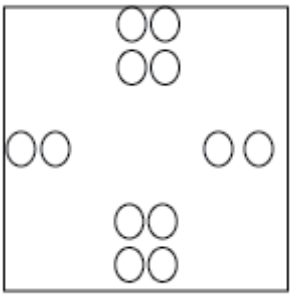
Answer: E

Question 48

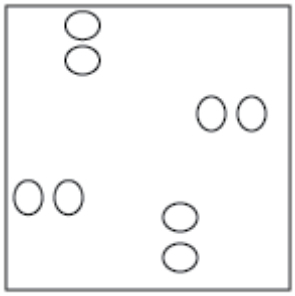
A place of paper is folded and punched as shows below in the question figures. From the given answer figures, indicate how it will appear when opened



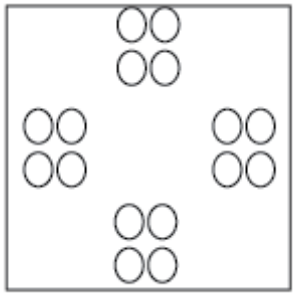
A



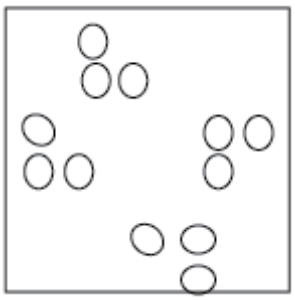
B



C



D



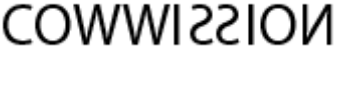
Answer: E

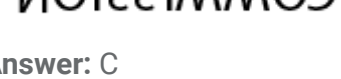
Question 49

Which one of the following is water image of “COMMISSION”

A 

B 

C 

D 

Answer: C

Explanation:
In the water image, the word will appear upside down, i.e. the first letter of the word will appear first. Thus first and last options are eliminated.

Also, in the second option, the letters are not reversed, thus third option is the correct mirror image.

=> Ans - (C)

Question 50

Find the wrong number in the given series ?
15, 28, 30, 39, 48

A 28

B 15

C 30

D 39

Answer: E

English

Instructions

Out of the four alternatives, choose the one which can be substituted for the given words/sentences and indicate it by blackening the appropriate circle in the Answer Sheet.

Question 51

Submission to all that happens as inevitable:

A Fatalism

B Pragmatism

C Pessimism

D Superatition

Answer: E

Question 52

A person who is easily deceived or tricked.

A Trickster

B Trouble

C Tangible

D Gullible

Answer: E

Question 53

Lasting for a very short time.

A Friable

B Ephemeral

C Metronomic

D Eternal

Answer: E

Question 54

Rules governing socially acceptable, behaviour

A Etiquette

B Politeness

C Formality

D Behaviour

Answer: E

Instructions

A sentence has been given in Direct/Indirect. Out of the four alternative suggested, select the one which best expresses the same sentence in Indirect/Direct and mark your answer in the Answer Sheet.

Question 55

I said to him, "Do you definitely need the suit next week ?"

A I asked him if he definitely needed the suit the following week

B I asked him if he needed the suit the next week

C I asked him if he definitely need the suit the following week

D I asked him if definitely he needed the suit the next week.

Answer: E

Question 56

Meera's mother told her not to forget to buy the milk.

A Meera's mother reminded her, "Don't forget to buy the milk"

B Meera's mother said to her, "You must buy the milk"

C Meera was told by her mother" Buy the milk"

D Meera's mother said "Remember to buy the milk"

Answer: E

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 alternative and fill in the blanks

A though we can _____(I)_____ the _____(II)_____ bodies of our solar system _____(III)_____ a telescope, it is only _____(IV)_____ who can _____(V)_____ the depths of outer space. It is reported that they have seen _____(VI)_____ galaxies, stars taking _____(VII)_____ and _____(VIII)_____ black holes'. They say that the deeper they look _____(IX)_____ the universe, the more they know _____(X)_____ the universe originated.

Question 57

(I)

A (I) reach

B (I) observe

C (I) look

D (I) find

Answer: E

Question 58

(II)

A (II) heaven

B (II) heavy

C (II) heavier

D (II) heavenly

Answer: E

Question 59

(III)

A (III) by

B (III) through

C (III) with

D (III) at

Answer: E

Question 60

(IV)

A (IV) astronomers

B (IV) astronomy

C (IV) astrology

D (IV) astrologers

Answer: E

Question 61

(V)

A (V) viewed

B (V) views

C (V) overview

D (V) view

Answer: E

Question 62

(VI)

A (VI) shine

B (VI) stunning

C (VI) stunned

D (VI) stun

Answer: E

Question 63

(VII)

A (VII) born

B (VII) borne

C (VII) birth

D (VII) berth

Answer: E

Question 64

(VIII)

A (VIII) die

B (VIII) died

C (VIII) dyeing

D (VIII) dying

Answer: E

Question 65

(IX)

A (IX) into

B (IX) at

C (IX) through

D (IX) on

Answer: E

Question 66

(X)

A (X) why

B (X) where

C (X) how

D (X) what

Answer: E

Instructions

Four alternativesare given for the Idiom/Phrase underlined. Choose tthe alternative whhich bestt expresses the meaning of the Idiom/Phrase and mark it in the Answer Sheet.

Question 67

A Sacred Cow.

A a person never to be critibeased

B a santly person

C a very religious person

D a helpful person

Answer: E

Question 68

To shun evil company

A To kick out evil company

B To given up evil company

C To put off evil company

D To Te let close evil company

Answer: E

Question 69

He has made a dog's breakfast of these accounts

A A total mess

B A breakfast for the dogs

C An accurate

D A breakfast being served by the dogs

Answer: E

Question 70

You will be reminded of <u>the seamy side</u> of life if you visit the slum tenements

A the softer aspects

B the unpleasant aspects

C the pleasanter aspects

D the gentler aspects

Answer: E

Instructions

Sentences are given with blanks to be filled in with an appropriate word(s). Four alternative are suggested for each question. Choose the correct alternative out of the four end indicate it by blackening the appropriate circle in the Answer Sheet.

Question 71

This house_____ ten rooms.

A consisted with

B consist of

C consists of

D Consists by

Answer: E

Question 72

Have you even _____ the wolf cry ?

A head

B Board of

C hear out

D hear

Answer: E

Question 73

Afreen_____ that the weather was very pleasant that day

A suggested

B argued

C announced

D remarked

Answer: E

Question 74

Mrs Hall was prepared to excuse the scientist's habit's and __ tempere.

A Irritate

B Irate

C Irritable

D irritation

Answer: E

Instructions

Choose the word opposite in meaning to the given word and mark it in the Answer Sheet.

Question 75

A legal

B correct

C approved

D noble

Answer: E

Question 76

Demand

A supply

B clam

C request

D partition

Answer: E

Question 77

Descent

A diseem

B ascent

C dissent

D assent

Answer: E

Question 78

Notorious

A prominent

B infamous

C honourable

D reputed

Answer: E

Instructions

Four words are given in each question. Out of which only one words is correctly spelt. Find the correctly spelt word and mark your answer in the Answer.

Question 79

A predilictiоn

B predilection

C predalection

D pridilection

Answer: E

Question 80

A accumulate

B acummulate

C accumullate

D accummulate

Answer: E

Question 81

A restaurent

B restuarant

C restuarent

D restaurant

Answer: E

Question 82

A manoeuvre

B manouvre

C manuvere

D mamouevr

Answer: E

Instructions

A sentence a part of the sentence is underlined part which may improve the sentence choose the correct alternative in case no improvement is needed choose 'No improvement

Question 83

Rani has completed her graduation from a reputed university last year.

A completed

B No improvement

C was completed

D had been completed

Answer: E

Question 84

The terrorist as well as his accomplices was killed in the encounter.

A was being killed

B were killed

C No improvement

D was

Answer: E

Question 85

The Councillor behaves as if the is the Chief Minister.

A has been

B were

C No improvement

D was

Answer: E

Question 86

<u>in spite of age be is my senior</u>

A He is my senior, in keeping with his age

B He is my senior in regard of his age

C No Improvement

D in respect of age, he is my senior

Answer: E

Instructions

The 1st and the last part of the sentence are numbered 1 and 6. The rest of the sentence is split is into four parts and named P, Q, R & S. These four parts are not given in their proper order. Read the sentence and find out which of the four combinations is correct. Then find the correct answer and indicate it in the Answer Sheet.

Question 87

1. Everyone
P. the case calmly
Q. acknowledges
R. who knows you
S. when be considers
6. That you have been wronged.

A PRQS

B QRSP

C SRPQ

D RQSP

Answer: E

Question 88

I. It is those good works
P. that lead to peak performance
Q. which we do with passion
R. our understanding of our purpose
S. and which come to reflect
6. In this life

A PRQS

B QPSR

C QSRP

D SRQP

Answer: E

Question 89

I. I am a self-confessed technophobe
P. I believe that computer is responsible for the dying of the art of conversation
Q. I have come to hate technology and the way it dominates every aspect of life
R. For many, it has become the most important object both in home and at the workplace.
S. One of the worst offenders is the computer
6. Small wonder then, that I have managed to keep this ubiquitous machine out of my home.

A PQRS

B QSRP

C RPSQ

D SRPQ

Answer: E

Question 90

I. Moisturisers for the face
P. as only unus may block
Q. in greater concentration on the face
R. the oil glands found
S. should be chosen carefully
6. And cause pimple aone to break out

A SRPQ

B SQPR

C SPRQ

D SPQR

Answer: E

Instructions

Some parts of the sentences have errors and some are correct. Find out which part of a sentence has an error and blacken the circle corresponding to the appropriate correct option. If a sentence is free from error blacken the circle corresponding to No Error; otption in the Answer Sheet.

Question 91

Scientist now hope that cloning can successfully be conducted in human beings in the near future.

A Human beings in the near future

B can successfully be conducted in

C Scientist now hope that cloning

D No Error

Answer: E

Question 92

When one takes great risks they must be prepared for great losses

A When one takes great risks

B No Error

C they must be prepared

D for great josses.

Answer: E

Question 93

What delicious flavor these mangoes have !

A have !

B What delicious

C flavour these mangnes

D No Error

Answer: E

Question 94

They had to put of the garden party because of the heavy rain

A because of the heavy rain

B No Error

C they had to

D put of the garden party

Answer: E

Instructions

Out of the four alternatives, choose the one which best expresses the meaning of the given word and mark it in the Answer Sheet.

Question 95

Vocation

A virtue

B holiday

C break up

D occupation

Answer: E

Question 96

Limpid

A ruffled

B crippled

C lopsided

D clear

Answer: E

Question 97

Merge

A blend

B meet

C mixture

D contact

Answer: E

Question 98

Gourmet

A fussy

B constant

C gastronome

D praise

Answer: E

Instructions

A sentence has been given in Active/Passive Voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active Voice and mark your answer in the Answer Sheet.

Question 99

Please close the door.

A Please be the door closed by you.

B Let the door be closed by you.

C You please close the door

D You close the door yourself

Answer: E

Question 100

We must take care of our parents

A Our parents will be taken care of by us

B Our parents are taken care of by us

C Our parents must be cared for by us

D Our parents had been taken care of by us

Answer: E

Quant

Instructions
For the following questions answer them individually

Question 101

In $\triangle ABC, \angle B = 60^\circ$, and $\angle C = 40^\circ$, AD and AE are respectively the bisector of $\angle A$ and perpendicular on BC. The measure of $\angle EAD$ is:

A 9°

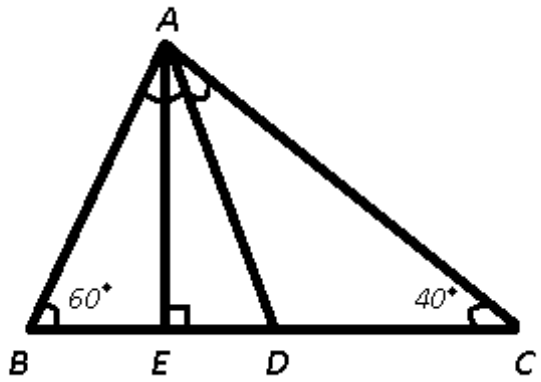
B 11°

C 12°

D 10°

Answer: D

Explanation:



Given : AD is angle bisector of $\angle$ A and AE is perpendicular to BC.

To find : $\angle$ EAD = ?

In $\triangle$ ABC,

=> $\angle$ A + $\angle$ B + $\angle$ C = 180°

=> $\angle$ A + $60^\circ + 40^\circ = 180^\circ$

=> $\angle$ A = $180^\circ - 100^\circ = 80^\circ$

$\because \angle$ BAD = $\angle$ CAD

=> $\angle$ CAD = $\frac{80}{2} = 40^\circ$

Using external angle property, => $\angle$ ADE = $\angle$ CAD + $\angle$ C

=> $\angle$ ADE = $40^\circ + 40^\circ = 80^\circ$

$\therefore$ In $\triangle$ EAD,

=> $\angle$ EAD + $\angle$ ADE + $\angle$ DEA = 180°

=> $\angle$ EAD + $80^\circ + 90^\circ = 180^\circ$

=> $\angle$ EAD = $180^\circ - 170^\circ = 10^\circ$

=> Ans - (D)

Question 102

The average of 13 results is 70. The average of first seven is 65 and that of the last seven is 75, the seventh result is:

A 70

B 70.5

C 68

D 67

Answer: A

Explanation:
Average of 13 results = 70

=> Sum of 13 results = $13 \times 70 = 910$

Similarly, sum of first seven = $7 \times 65 = 455$

And sum of last seven = $7 \times 75 = 525$

$\therefore$ Seventh result = $(455 + 525) - 910 = 70$

=> Ans - (A)

Question 103

The contractor was engaged to construct a road in 16 days. After working for 12 days with 20 labours it was found that only $\frac{5}{8}^{th}$ of the road had been constructed. To complete the work in stipulated the number of extra labours required is:

A 12

B 10

C 18

D 16

Answer: D

Explanation:
20 workers will do $\frac{5}{8}$ work in 12 days

=> Remaining work = $1 - \frac{5}{8} = \frac{3}{8}$

Remaining time = $16 - 12 = 4$ days

Let number of extra labours required = x

Using, $\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$

=> $\frac{20 \times 12}{\frac{5}{8}} = \frac{(20+x) \times 4}{\frac{3}{8}}$

=> $20 \times 12 \times 3 = (20 + x) \times 4 \times 5$

=> $20 + x = 36$

=> $x = 36 - 20 = 16$

=> Ans - (D)

Question 104

If p = -0.12, q = -0.01 & r = -0.015, then the correct relation ship among the three is:

A q>p>r

B p>q>r

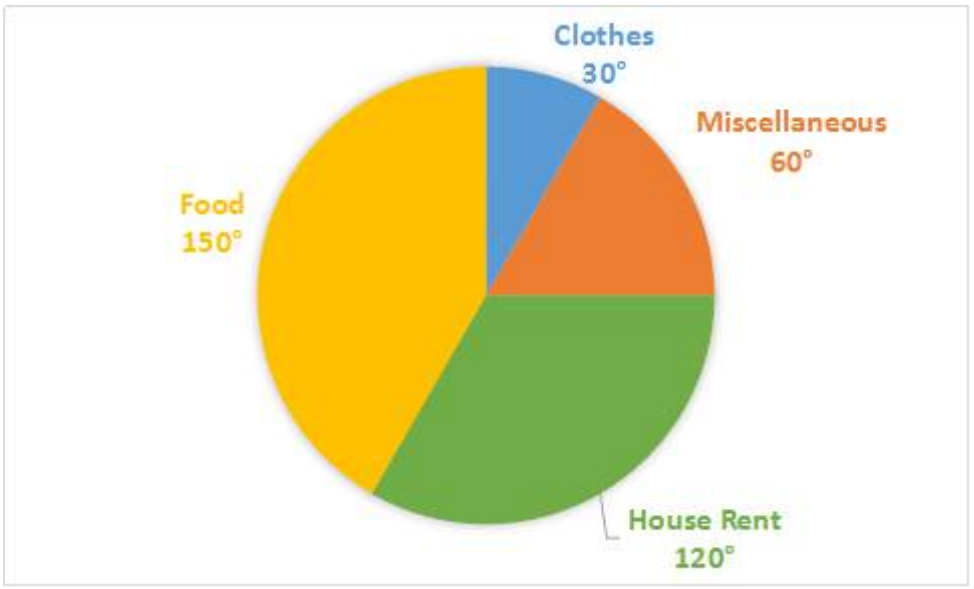
C P>r>q

D p<r<q

Answer: E

Instructions

The Expenditure of a family in a month is represented by a Pie-chart. Read it and answer the questions.



Question 105

The ratio of the amount spent on food and clothes ?

A 2 : 5

B 4 : 1

C 4 : 5

D 5 : 1

Answer: D

Explanation:
Central angle for amount spent on food = 150°

Central angle for amount spent on clothes = 30°

=> Required ratio = $\frac{150}{30} = 5:1$

=> Ans - (D)

Question 106

The % money spent on food compared to house rent is by ?

A 12%

B None of the options

C 25%

D 50%

Answer: C

Explanation:
Central angle for amount spent on food = 150°

Central angle for amount spent on rent = 120°

=> Required % = $\frac{(150-120)}{120} \times 100$

= $\frac{1}{4} \times 100 = 25\%$

=> Ans - (C)

Question 107

The total money spent on clothes and miscellaneous items are

A ₹3600

B ₹900

C ₹2000

D Cannot be determined

Answer: D

Explanation:
Total expenditure of the family is not given, thus we cannot determine the total money spent on clothes and miscellaneous items.

=> Ans - (D)

Question 108

If the total amount spent is ₹7,200. Find the amount spent on food ?

A ₹3000

B ₹4500

C ₹6000

D ₹1500

Answer: A

Explanation:
Total expenditure = Rs. 7200

Central angle for amount spent on food = 150°

=> Amount spent on food = $\frac{150}{360} \times 7200$

= $150 \times 20 = Rs.\ 3000$

=> Ans - (A)

Instructions
For the following questions answer them individually

Question 109

If $a = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$ and $b = \frac{\sqrt{3}+\sqrt{2}}{\sqrt{3}-\sqrt{2}}$, then the value of $\frac{a^2}{b} + \frac{b^2}{a}$ is:

A 98

B 93

C 103

D 102

Answer: A

Explanation:
Given : $a = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}}$

Rationalizing the denominator, we get :

=> $a = \frac{\sqrt{3}-\sqrt{2}}{\sqrt{3}+\sqrt{2}} \times \frac{(\sqrt{3}-\sqrt{2})}{(\sqrt{3}-\sqrt{2})}$

=> $a = \frac{(\sqrt{3}-\sqrt{2})^2}{(\sqrt{3}+\sqrt{2})(\sqrt{3}-\sqrt{2})}$

=> $a = \frac{3+2-2(\sqrt{3})(\sqrt{2})}{(3-2)}$

=> $a = 5 - 2\sqrt{6}$

Similarly, $b = 5 + 2\sqrt{6}$

To find : $a^2 + b^2$

= $(5 - 2\sqrt{6})^2 + (5 + 2\sqrt{6})^2$

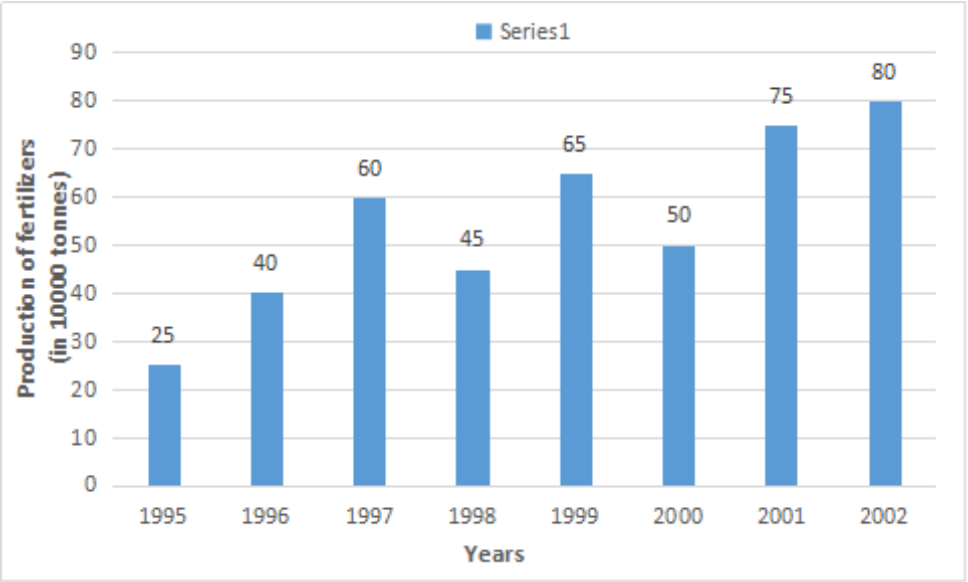
= $(25 + 24 - 20\sqrt{6}) + (25 + 24 + 20\sqrt{6})$

= $49 + 49 = 98$

=> Ans - (A)

Instructions

Study the following bar graph and answer the questions.



Question 110

The number of years, the production of fertilizers was more than average production of the given years is.

A 2

B 1

C 3

D 4

Answer: D

Explanation:
Total production of fertilizers (in 10,000 tonnes) in the given years is :

= 25 + 40 + 60 + 45 + 65 + 50 + 75 + 80 = 440

=> Average production = $\frac{440}{8} = 55$

∴ The number of years in which the production of fertilizers was more than average production of the given years = 1997, 1999, 2001 and 2002

=> Ans - (D)

Question 111

The percentage increase in production of fertilizers in 2002 compared in that in 1995 is

A 200%

B 180%

C 220%

D 240%

Answer: C

Explanation:
Production of fertilizers in 1995 (in 10,000 tonnes) = 25

Production of fertilizers in 2002 (in 10,000 tonnes) = 80

=> Percentage increase = $\frac{(80-25)}{25} \times 100$

= $55 \times 4 = 220\%$

=> Ans - (C)

Question 112

The percentage decline in the production of fertilizers from 1997 to 1998 is

A 27.5%

B 25%

C 26%

D 23%

Answer: B

Explanation:
Production of fertilizers in 1997 (in 10,000 tonnes) = 60

Production of fertilizers in 1998 (in 10,000 tonnes) = 45

=> Percentage decline = $\frac{(60-45)}{60} \times 100$

= $\frac{1}{4} \times 100 = 25\%$

=> Ans - (B)

Question 113

The average production of 1996 and 1997 is exactly equal to the average production of the years ?

A 2000 and 2001

B 1999 and 2000

C 1995 and 2001

D 1995 and 1999

Answer: C

Explanation:
If average production is equal, then sum of production will also be equal.

Thus, sum of production of fertilizers in 1996 and 1997 (in 10,000 tonnes) = 40 + 60 = 100

Also, sum of production of fertilizers in 1995 and 2001 (in 10,000 tonnes) = 25 + 75 = 100

=> Ans - (C)

Question 114

The percentage increase in production as compared to previous year is maximum in year:

A 1999

B 1996

C 1997

D 2002

Answer: B

Explanation:
Percentage increase in production as compared to previous year :

(A) : 1999 = $\frac{(65-45)}{45} \times 100 = 44.4\%$

(B) : 1996 = $\frac{(40-25)}{25} \times 100 = 60\%$ **[MAX]**

(C) : 1997 = $\frac{(60-40)}{40} \times 100 = 50\%$

(D) : 2002 = $\frac{(80-75)}{75} \times 100 = 20\%$

=> Ans - (B)

Instructions
For the following questions answer them individually

Question 115

If for non-zero x, $x^2 - 4x - 1 = 0$ the value of $x^2 + \frac{1}{x^2}$ is:

A 10

B 4

C 12

D 18

Answer: D

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

=> $x^2 - 1 = 4x$

=> $\frac{x^2-1}{x} = 4$

=> $x - \frac{1}{x} = 4$

Squaring both sides, we get :

=> $(x - \frac{1}{x})^2 = (4)^2$

=> $x^2 + \frac{1}{x^2} - 2(x)(\frac{1}{x}) = 16$

=> $x^2 + \frac{1}{x^2} = 16 + 2 = 18$

=> Ans - (D)

Question 116

The length of two parallel sides of a trapezium are 15 cm and 20 cm If its area is 175 sq.cm, then its height is :

A 10 cm

B 15 cm

C 25 cm

D 20 cm

Answer: A

Explanation:
Sum of the two parallel sides of the trapezium = $15 + 20 = 35$ cm

Let its height = h cm

=> Area of trapezium = $\frac{1}{2} \times$ (sum of parallel sides) $\times$ height

=> $\frac{1}{2} \times 35 \times h = 175$

=> $h = \frac{175}{35} \times 2$

=> $h = 5 \times 2 = 10$ cm

=> Ans - (A)

Question 117

A hemispherical bowl has internal radius of 6 cm. The internal surface area would be: $(take\ \pi - 3.14)$

A $400cm^2$

B $289.75cm^2$

C $225cm^2$

D $226.08cm^2$

Answer: D

Explanation:
Radius of bowl = 6 cm

Surface area of hemisphere = $3\pi r^2$

= $2 \times 3.14 \times (6)^2$

= $2 \times 113.04 = 226.08\ cm^2$

=> Ans - (D)

Question 118

A train 156 m long passes a km stone in 30 seconds and another train of the same length travelling in opposite direction in 10 seconds. The speed of the second train is

A $93.6\frac{km}{hr}$

B $26\frac{km}{hr}$

C $90\frac{km}{hr}$

D $75\frac{km}{hr}$

Answer: A

Explanation:
Length of train = 156 m and time taken = 30 seconds

=> Speed of first train = $\frac{156}{30} = 5.2$ m/s

Let speed of second train (length = 156 m) = x m/s

According to ques, => $(x + 5.2) = \frac{156+156}{10}$

=> $(x + 5.2) = 31.2$

=> $x = 31.2 - 5.2 = 26$ m/s

$\therefore$ Speed of second train = $26 \times (\frac{18}{5}) = 93.6$ km/hr

=> Ans - (A)

Question 119

If water is freezed to become ice, its volume is increased by 10%, then if the ice is melted to water again, its volume will be decreased by:

A $8\ \%$

B $9\frac{1}{2}\ \%$

C $9\ \%$

D $9\frac{1}{11}\ \%$

Answer: D

Explanation:
Let initial volume of water = $10\ cm^3$

Increase in volume = 10%

=> Volume of ice = $10 \times \frac{(110)}{100} = 11\ cm^3$

If the ice is melted to water again, its volume will be decreased by = $\frac{(11-10)}{11} \times 100$

= $\frac{100}{11} = 9\frac{1}{11}\%$

=> Ans - (D)

Question 120

The simplified value of following is:
$(\frac{3}{15}a^5b^6c^3 \times \frac{5}{9}ab^5c^4) \div \frac{10}{27}a^2bc^3$

A $\frac{9}{10}a^2bc^4$

B $\frac{1}{10}a^4b^4c^{10}$

C $\frac{3}{10}a^4b^{10}c^4$

D $\frac{3}{10}ab^4c^3$

Answer: C

Explanation:
Expression : $(\frac{3}{15}a^5b^6c^3 \times \frac{5}{9}ab^5c^4) \div \frac{10}{27}a^2bc^3$

= $(\frac{3}{15} \times \frac{5}{9} \times \frac{27}{10}) \times (a)^{5+1-2} \times (b)^{6+5-1} \times (c)^{3+4-3}$

= $\frac{3}{10}a^4b^{10}c^4$

=> Ans - (C)

Question 121

A number of boys raised ₹12,544 for a famine fund, each boy has given as many rupees as there were boys. The number of boys was:

A 122

B 132

C 112

D 102

Answer: C

Explanation:
Let the number of boys = x

=> Amount raised by each boy = Rs. x

According to ques, => $x^2 = 12,544$

=> $x = \sqrt{12544} = 112$

$\therefore$ Number of boys = **112**

=> Ans - (C)

Question 122

The value of X in the equation $tan^2\frac{\pi}{4} - Cos^2\frac{\pi}{3} - X\ Sin\frac{\pi}{4}Cos\frac{\pi}{4}Tan\frac{\pi}{3}$ is:

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

B $3\frac{\sqrt{3}}{4}$

C $\frac{2}{\sqrt{3}}$

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

Answer: A

Explanation:
Expression : $tan^2\frac{\pi}{4} - Cos^2\frac{\pi}{3} - X\ Sin\frac{\pi}{4}Cos\frac{\pi}{4}Tan\frac{\pi}{3} = 0$

=> $(1)^2 - (\frac{1}{4})^2 - x(\frac{1}{\sqrt{2}})(\frac{1}{\sqrt{2}})(\sqrt{3}) = 0$

=> $1 - \frac{1}{4} - \frac{x\sqrt{3}}{2} = 0$

=> $\frac{3}{4} = \frac{x\sqrt{3}}{2}$

=> $x = \frac{3}{4} \times \frac{2}{\sqrt{3}}$

=> $x = \frac{\sqrt{3}}{2}$

=> Ans - (A)

Question 123

ABCD is a square. Draw a triangle QBC on side BC considering BC as base and draw a triangle PAC on AC as its base such that $\triangle QBC \sim \triangle PAC$, Then $\frac{Area\ of\ \triangle QBC}{Area\ of\ \triangle PAC}$ is equal to:

A $\frac{2}{1}$

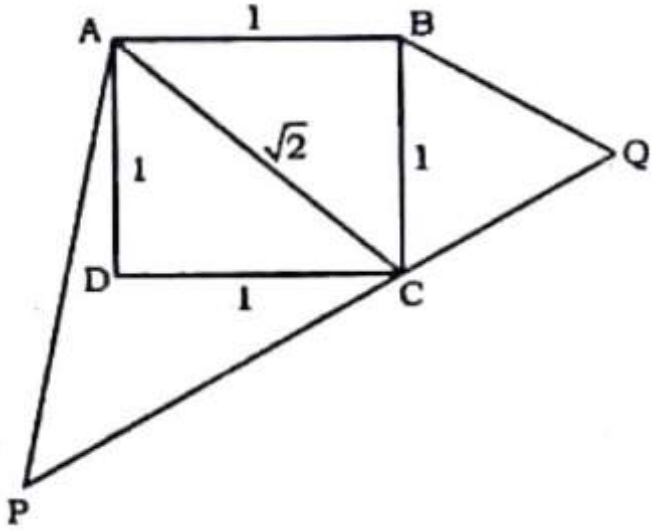
B $\frac{1}{3}$

C $\frac{1}{2}$

D $\frac{2}{3}$

Answer: C

Explanation:



Let side of square ABCD = 1 unit

=> Diagonal AC = $\sqrt{1^2 + 1^2} = \sqrt{2}$ units

It is given that $\triangle QBC \sim \triangle PAC$

Ratio of areas of two similar triangles is equal to the ratio of squares of corresponding sides.

=> $\frac{Area\ of\ \triangle QBC}{Area\ of\ \triangle PAC} = \frac{(BC)^2}{(AC)^2}$

= $\frac{1^2}{(\sqrt{2})^2}$

= $\frac{1}{2}$

=> Ans - (C)

Question 124

The current ages of Sonali and Monali are in the ratio 5 : 3 Five years from now, their ages will be in the ratio 10 : 7 Then, Monali's current age is

A 9 years

B 15 years

C 3 years

D 5 years

Answer: A

Explanation:
Let current ages of Sonali and Monali are $5x$ and $3x$ years respectively.

According to ques,

=> $\frac{5x+5}{3x+5} = \frac{10}{7}$

=> $35x + 35 = 30x + 50$

=> $35x - 30x = 50 - 35$

=> $5x = 15$

=> $x = \frac{15}{5} = 3$

$\therefore$ Monali's current age = $3 \times 3 = 9$ years

=> Ans - (A)

Question 125

The compound interest on ₹12000 for 9 months at 20% per annum, interest being compounded quarterly is:

A ₹1750

B ₹1891.50

C ₹2136.40

D ₹2089.70

Answer: B

Explanation:
Principal amount = Rs. 12,000 at rate of interest = 20%

Time period = $\frac{9}{12} = \frac{3}{4}$ years

Compound interest compounding quarterly = $P[(1 + \frac{R}{400})^{4T} - 1]$

= $12,000[(1 + \frac{20}{400})^{4\times\frac{3}{4}} - 1]$

= $12,000[(1+\frac{1}{20})^3-1]$

= $12,000[(\frac{21}{20})^3-1]$

= $12,000\times(\frac{9261-8000}{8000})$

= $1.5\times1261=Rs.1891.50$

=> Ans - (B)

Question 126

Value of the expression: $\frac{1+2\ Sin\ 60^\circ Cos\ 60^\circ}{Sin\ 60^\circ+Cos\ 60^\circ}+\frac{1-2\ Sin\ 60^\circ Cos\ 60^\circ}{Sin\ 60^\circ-Cos\ 60^\circ}$

A 0

B 2

C $\sqrt{3}$

D $2\sqrt{3}$

Answer: C

Explanation:

Expression : $\frac{1+2\ Sin\ 60^\circ Cos\ 60^\circ}{Sin\ 60^\circ+Cos\ 60^\circ}+\frac{1-2\ Sin\ 60^\circ Cos\ 60^\circ}{Sin\ 60^\circ-Cos\ 60^\circ}$

= $\frac{(sin^2\ 60^\circ+cos^2\ 60^\circ)+2\ Sin\ 60^\circ Cos\ 60^\circ}{Sin\ 60^\circ+Cos\ 60^\circ}+\frac{(sin^2\ 60^\circ+cos^2\ 60^\circ)-2\ Sin\ 60^\circ Cos\ 60^\circ}{Sin\ 60^\circ-Cos\ 60^\circ}$

= $\frac{(sin\ 60^\circ+cos\ 60^\circ)^2}{sin\ 60^\circ+cos\ 60^\circ}+\frac{(sin\ 60^\circ-cos\ 60^\circ)^2}{sin\ 60^\circ-cos\ 60^\circ}$

= $(sin\ 60^\circ+cos\ 60^\circ)+(sin\ 60^\circ-cos\ 60^\circ)$

= $2sin\ 60^\circ$

= $2\times\frac{\sqrt{3}}{2}=\sqrt{3}$

=> Ans - (C)

Question 127

If $\frac{Sin\theta+Cos\theta}{Sin\theta-Cos\theta}=3$ **then the value of** $Sin^4\theta$ **is:**

A $\frac{4}{5}$

B $\frac{2}{5}$

C $\frac{1}{5}$

D $\frac{3}{5}$

Answer: A

Explanation:

Expression : $\frac{Sin\theta+Cos\theta}{Sin\theta-Cos\theta} = 3$

=> $sin\theta + cos\theta = 3sin\theta - 3cos\theta$

=> $3sin\theta - sin\theta = cos\theta + 3cos\theta$

=> $2sin\theta = 4cos\theta$

=> $sin\theta = 2\sqrt{1 - sin^2\theta}$

Squaring both sides, we get :

=> $sin^2\theta = 4(1 - sin^2\theta)$

=> $sin^2\theta = 4 - 4sin^2\theta$

=> $sin^2\theta + 4sin^2\theta = 4$

=> $5sin^2\theta = 4$

=> $sin^2\theta = \frac{4}{5}$

=> Ans - (A)

Question 128

If $Sin\ 2\theta = \frac{\sqrt{3}}{2}$ then the value of $Sin\ 3\theta$ is equal to: $(Take\ 0^\circ \leq \theta \leq 90^\circ)$

A 0

B $\frac{\sqrt{3}}{2}$

C 1

D $\frac{1}{2}$

Answer: C

Explanation:

Given : $Sin\ 2\theta = \frac{\sqrt{3}}{2}$

=> $Sin\ 2\theta = sin(60^\circ)$

=> $2\theta = 60^\circ$

=> $\theta = \frac{60}{2} = 30^\circ$

To find : $sin\ 3\theta$

= $sin(3 \times 30^\circ)$

= $sin(90^\circ) = 1$

=> Ans - (C)

Question 129

The volume of the largest right circular cone that can be cut out of a cube of edge 7cm ? $(Use\ \pi = \frac{22}{7})$.

A $13.6cm^3$

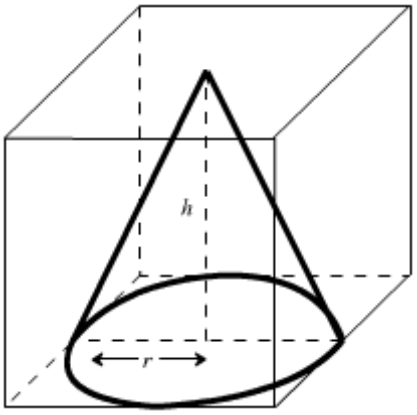
B $121cm^3$

C $147.68cm^3$

D $89.8cm^3$

Answer: D

Explanation:



Height of largest circular cone = 7 cm and radius = $\frac{7}{2} = 3.5$ cm

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

= $\frac{1}{3} \times \frac{22}{7} \times (3.5)^2 \times 7$

= $\frac{1}{3} \times 22 \times 12.25$

= $\frac{269.5}{3} = 89.8\ cm^3$

=> Ans - (D)

Question 130

Two positive whole numbers are such that the sum of the first and twice the second number is 8 and their difference is 2. The numbers are:

A 7,5

B 6,4

C 3,5

D 4,2

Answer: D

Explanation:
Let the numbers be x and $(x-2)$

According to ques,

=> $x+2(x-2)=8$

=> $x+2x-4=8$

=> $3x=8+4=12$

=> $x=\frac{12}{3}=4$

∴ Numbers are = 4, 2

=> Ans - (D)

Question 131

The speed of a car in $54\frac{km}{hr}$. What is its speed in $\frac{m}{sec}$?

A $150\frac{m}{sec}$

B $19.44\frac{m}{sec}$

C $194.4\frac{m}{sec}$

D $15\frac{m}{sec}$

Answer: D

Explanation:
Speed of a car = 54 km/hr

Speed (in m/s) = $54\times\frac{5}{18}$

= $3\times5=15$ m/s

=> Ans - (D)

Question 132

The income of a company increase 20% per annum. If its income ₹26,64,000 in the year 2012, then its income in the year 2010 was:

A ₹28,20,000

B ₹28,55,000

C ₹18,50,000

D ₹21,20,000

Answer: C

Explanation:
Let income in year 2010 = Rs. x

Increase % every year = 20%

Thus, income in 2012 = $x(1 + \frac{20}{100})^2 = 26,64,000$

=> $x(\frac{6}{5})^2 = 26,64,000$

=> $x = 26,64,000 \times \frac{25}{36}$

=> $x = 74,000 \times 25 = 18,50,000$

∴ Income in 2010 was **Rs. 18,50,000**

=> Ans - (C)

Question 133

The distance between centers of two circles of radii 3 cm and 8 cm is 13 cm. If the points of contact of a direct common tangent to the circles are P and Q, the length of the line segment PQ is:

A 11.9 cm

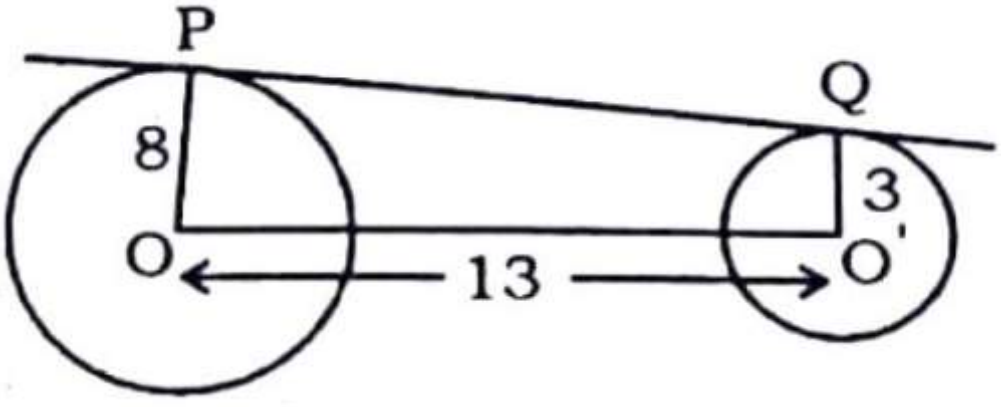
B 11.5 cm

C 12 cm

D 11.58 cm

Answer: C

Explanation:



Two circles having radii r_1 and r_2 and distance between them d

Length of direct common tangent PQ = $\sqrt{d^2 - (r_2 - r_1)^2}$

= $\sqrt{(13)^2 - (8 - 3)^2}$

= $\sqrt{169 - 25} = \sqrt{144} = 12$ cm

=> Ans - (C)

Question 134

A shopkeeper marks his goods 20% higher than the cost price and allows a discount of 5%. The percentage of his profit is.

A 14%

B 15%

C 10%

D 20%

Answer: A

Explanation:
Let cost price = Rs. 100

Markup % = 20%

=> Marked price = $100 + (\frac{20}{100} \times 100)$

= $100 + 20 = Rs. 120$

After allowing discount of 5%, => Selling price = $120 - (\frac{5}{100} \times 120)$

= $120 - 6 = Rs. 114$

$\therefore$ Profit % = $\frac{(114-100)}{100} \times 100 = 14\%$

=> Ans - (A)

Question 135

In $\triangle ABC, AB = BC = K, AC = \sqrt{2}\ K$, then $\triangle ABC$ is a:

A Isosceles triangle

B Right-angled triangle

C Equilateral triangle

D Right isosceles triangle

Answer: D

Explanation:
The three sides are not equal, hence it is not an equilateral triangle.

Now, $(AB)^2 + (BC)^2 = (k)^2 + (k)^2 = 2k^2$

Also, $(AC)^2 = (\sqrt{2}\ k)^2 = 2k^2$

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

Thus, $\triangle$ ABC is a Right isosceles triangle.

=> Ans - (D)

Question 136

The smallest five digit number which is divisible by 12, 18 and 21 is:

A 50321

B 10224

C 30256

D 10080

Answer: D

Explanation:
L.C.M. (12,18,21) = 252

Lowest five digit number = 10000

Now on dividing 10000 by 252, remainder = $10000\%252 = 172$

Thus, smallest five digit number which is divisible by 12, 18 and 21 = $1000 + (252 - 172) = 10080$

=> Ans - (D)

Question 137

By selling an article for ₹450. I lose 20%. For what amount should I sell il to gain 20% ?

A ₹490

B ₹470

C ₹562.50

D ₹675

Answer: D

Explanation:
Selling price = Rs. 450 and loss % = 20%

=> Cost price = $\frac{450}{(100-20)} \times 100$

= $450 \times \frac{5}{4} = Rs.562.50$

$\therefore$ Selling price to gain 20% = $\frac{(100+20)}{100} \times 562.50$

= $\frac{6}{5} \times 562.50 = Rs.675$

=> Ans - (D)

Question 138

In an exam the sum of the scores of A and B is 120, that of B and C is 130 and that of C and A is 140. Then the score of C is

A 65

B 60

C 70

D 75

Answer: D

Explanation:
Let scores of A, B and C are a, b and c respectively.

According to ques, => $a + b = 120$ ----------(i)

$b + c = 130$ ----------(ii)

$c + a = 140$ ----------(iii)

Adding above equations, we get : $2(a + b + c) = (120 + 130 + 140)$

=> $a + b + c = \frac{390}{2} = 195$

Substituting value from equation (i) in above equation,

=> $120 + c = 195$

=> $c = 195 - 120 = 75$

=> Ans - (D)

Question 139

If $\alpha + \beta = 90^\circ$ then the expression $tan\alpha + Sin^2\alpha + Sin^2\beta$ is equal to: $tan\beta$

A $Sec^2\beta$

B $tan^2\beta$

C $Sec^2\alpha$

D $tan^2\alpha$

Answer: E

Question 140

Two circles of radii 5 cm and 3 cm touch extenally, then the ratio in which the direct common tangent to the circles divides extenally the line joining the centers of the circles is:

A 2.5 : 1.5

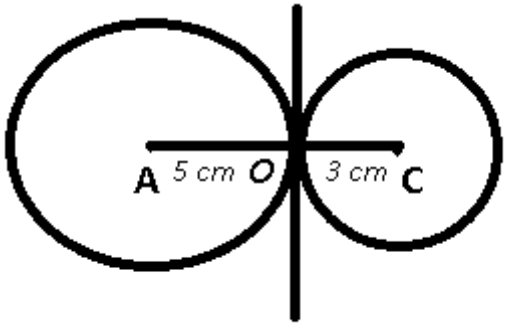
B 1.5 : 2.5

C 3 : 5

D 5 : 3

Answer: D

Explanation:



Circle with centre A has radius OA = 5 cm

Circle with centre C has radius OC = 3 cm

The direct common tangent intersects the line joining the centres at O.

Thus, it clearly divides OA : OC = $5:3$

=> Ans - (D)

Question 141

A fruit seller buys oranges at the rate of ₹10 per dozen and sells at the rate of ₹12 per dozen. His gain percent is

A 15%

B 20%

C $8\frac{1}{3}\%$

D 12%

Answer: B

Explanation:
Cost price per dozen = Rs. 10

Selling price per dozen = Rs. 12

=> Profit % = $\frac{(12-10)}{10} \times 100$

= $2 \times 10 = 20\%$

=> Ans - (B)

Question 142

The outer circumference of a circular race track is 528 metre. The track is every where 14 metre wide. Cost of levelling the track at the rate of ₹10 per sq. metre is:

A ₹77660

B ₹76760

C ₹66760

D ₹67760

Answer: D

Explanation:
Let outer radius = R m and inner radius = $r = (R - 14)$ m

Outer circumference = $2\pi R = 528$

=> $2 \times \frac{22}{7} \times R = 528$

=> $R = 528 \times \frac{7}{44} = 84$ m

Thus, inner radius = $84 - 14 = 70$ m

=> Area of track = $\pi(R^2 - r^2)$

= $\frac{22}{7}(R + r)(R - r)$

= $\frac{22}{7}(84 + 70)(84 - 70)$

= $\frac{22}{7} \times 154 \times 14 = 6776\, m^2$

$\therefore$ Total cost of levelling = $6776 \times 10 = Rs.\, 67,760$

=> Ans - (D)

Question 143

If $1^3 + 2^3 + ...10^3 = 3025$, then the value of $2^3 + 4^3 + ... + 20^3$ is:

A 5060

B 12100

C 24200

D 7590

Answer: C

Explanation:
Given : $1^3 + 2^3 + ...10^3 = 3025$ ----------(i)

To find : $2^3 + 4^3 + ... + 20^3$

= $(2 \times 1)^3 + (2 \times 2)^3 + ... + (2 \times 10)^3$

= $(8 \times 1^3) + (8 \times 2^3) + ... + (8 \times 10^3)$

= $8 \times (1^3 + 2^3 + ... + 10^3)$

Substituting value from equation (i), we get :

= $8 \times 3025 = 24200$

=> Ans - (C)

Question 144

The surface are of sphere is $616cm^2$. The volume of the sphere would be:

A $2100cm^2$

B $2500cm^2$

C $1437\frac{1}{3}cm^2$

D $122.5\frac{3}{5}cm^2$

Answer: C

Explanation:
Let radius of sphere = r cm

Surface area = $4\pi r^2 = 616$

=> $4 \times \frac{22}{7}r^2 = 616$

=> $r^2 = 616 \times \frac{7}{88} = 49$

=> $r = \sqrt{49} = 7$ cm

$\therefore$ Volume = $\frac{4}{3} \times \pi r^3$

=> $\frac{4}{3} \times \frac{22}{7} \times (7)^3$

= $\frac{4}{3} \times 22 \times 49 = 1437\frac{1}{3}\ cm^3$

=> Ans - (C)

Question 145

A vessel contains 60 litres of milk. 12 liters of milk taken out from it and replaced by water. Then again from mixture. 12 litres are again taken out and replaced by water. The ratio of milk and water in the resultant mixture is:

A 16 : 10

B 9 : 5

C 15 : 10

D 16 : 9

Answer: D

Explanation:
Initial quantity of milk = 60 litres

When 12 liters of milk taken out from it and replaced by water, then quantity of milk = $60 - 12 = 48$ litres and water = 12 litres

(Total mixture still remains 60 litres)

Again, 12 litres of mixture is taken out, => Fraction of mixture taken out = $\frac{12}{60} = \frac{1}{5}^{th}$

=> Milk left = $48 - (\frac{1}{5} \times 48) = 38.4$ litres

=> Water left = $60 - 38.4 = 21.6$ litres

$\therefore$ Required ratio = $\frac{38.4}{21.6} = \frac{64}{36} = 16 : 9$

=> Ans - (D)

Question 146

If $(2a - 1)^2 + (4b - 3)^2 + (4c + 5)^2 = 0$, Then the value of $\frac{a^3+b^3+c^3-3abc}{a^2+b^2+c^2}$ is:

A $1\frac{3}{8}$

B $3\frac{3}{8}$

C $2\frac{3}{8}$

D 0

Answer: D

Explanation:
Given : $(2a - 1)^2 + (4b - 3)^2 + (4c + 5)^2 = 0$

$\because$ Sum of 3 positive terms is 0, then each term is equal to '0'.

=> $2a - 1 = 0$

=> $a = \frac{1}{2} = \frac{2}{4}$

Similarly, $b = \frac{3}{4}$ and $c = \frac{-5}{4}$

Now, $(a + b + c) = \frac{2}{4} + \frac{3}{4} + (\frac{-5}{4}) = 0$ ----------(i)

Using, $a^3 + b^3 + c^3 - 3abc = (a + b + c)(a^2 + b^2 + c^2 - ab - bc - ac)$

=> $a^3 + b^3 + c^3 - 3abc = (0)(a^2 + b^2 + c^2 - ab - bc - ac)$ [Using equation (i)]

=> $a^3 + b^3 + c^3 - 3abc = 0$ ----------(ii)

To find : $\frac{a^3+b^3+c^3-3abc}{a^2+b^2+c^2}$

= $\frac{0}{a^2+b^2+c^2} = 0$ [Using equation (ii)]

=> Ans - (D)

Question 147

A house was sold for ₹y by giving a discount of x% then the list price was:

A $\frac{100\,y}{100-x}$

B $\frac{100\,x}{100-y}$

C $\frac{100\,y}{1-x}$

D $\frac{100\,y}{1-\frac{x}{100}}$

Answer: A

Explanation:
Selling price = Rs. y and discount % = x %

=> List price = $\frac{y}{(100-x)} \times 100$

= $\frac{100\,y}{100-x}$

=> Ans - (A)

Question 148

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

A 0

B 1

C 2

D $\frac{1}{2}$

Answer: E

Question 149

If 20 women can lay a road of lengh 100 m in 10 days. 10 women can lay the same road of length 50m in:

A 20 days

B 10 days

C 5 days

D 15 days

Answer: B

Explanation:
Using, $\frac{M_1 D_1}{W_1} = \frac{M_2 D_2}{W_2}$, where M is number of men, D is number of days and W is work done.

According to ques,

=> $\frac{20 \times 10}{100} = \frac{10 \times D_2}{50}$

=> $2 = \frac{D_2}{5}$

=> $D_2 = 2 \times 5 = 10$ days

=> Ans - (B)

Question 150

$83\frac{1}{3}$ % of ₹ 90 is equal to 60% of ?

A ₹124

B ₹125

C ₹123

D ₹122

Answer: B

Explanation:
Expression : $83\frac{1}{3}$ % of ₹ 90 is equal to 60% of x

=> $\frac{250}{3 \times 100} \times 90 = \frac{60}{100} \times x$

=> $250 \times 30 = 60x$

=> $x = \frac{250}{2} = 125$

=> Ans - (B)

General Awareness

Instructions
For the following questions answer them individually

Question 151

Whose army did Alexander, the Greek ruler confront on the bankes of the river Jhelum ?

A Ams

B Chandragupta Maurya

C Porus

D Dhanamanda

Answer: E

Question 152

The most suitable soil for the production of cotton is ?

A Black lave soil

B Loamy soil

C Well drained soil

D Alluvial soil

Answer: E

Question 153

The largest producer of Lignite in India is

A Kerala

B Rajastan

C Tamil Nadu

D Gujarat

Answer: E

Question 154

When was RTI Act conacted India ?

A 15^{th} August 2005

B 15^{th} March 2005

C 15^{th} June 2005

D 15^{th} July 2005

Answer: E

Question 155

The famouse activist Medha Patakar is associated with whhich movement ?

A Narmda bachao Andolan

B Save the Tiger

C preserve the we lands

D Beti Padao Andolan

Answer: E

Question 156

Lender of the Last Resort is ?

A IDBI

B NABARD

C SBI

D RBI

Answer: E

Question 157

Sex-ratio is calculated as

A No of remales per 1,000 males in a Country

B No of males per 1,000 females in a Country

C No of children per 1,000 people in a Country

D No of people per 1,000 children in a Country

Answer: E

Question 158

Who has been named ICC World Cup 2015 Ambassador ?

A Sanath Teran Jayasuriya

B Allam Robert Border

C Sir issac Virian Alexander Richards

D Sachin Tendulkar

Answer: E

Question 159

Soldering of two metals is possible because of the property of

A Osmosis

B Viscosity

C surface tension

D Cohesion

Answer: E

Question 160

Stalactites & Stalagmites form due to the precipitation of:

A $CaCl_2$

B $MgCo_3$

C $MgCl_2$

D $CaCo_3$

Answer: E

Question 161

Which of the following is a form of sexual reproduction

A Fission

B Fragmentation

C Budding

D Hermaphroditism

Answer: E

Question 162

Who among the following is not a Bharatanatyam dancer ?

A Satara Devi

B Leela Samson

C Geeta Ramachandran

D Sonal Mansingh

Answer: E

Question 163

The 73^{rd} Constitutional amendment act is related to ?

A Panchayat Raj

B Foreign Exchange

C Finance Commission

D RBI

Answer: E

Question 164

Ryder Cup is a famous tournament of ?

A Badminton

B Golf

C Cricket

D Lawn Tennis

Answer: E

Question 165

Kanha National Park is located in ?

A Tamil Nadu

B Bihar

C Andhra Pradesh

D Madhya Pradesh

Answer: E

Question 166

Who wrote “Discovery of India ?

A Mahatma Gandhi

B Jawaharlal Nehru

C Bal Gangadhar Tilak

D APJ Abdul Kalam

Answer: E

Question 167

Who is the first woman IPS officer in India ?

A Sarojini Naidu

B Kiran Bodi

C Bachendri Pal

D Indira Gandhi

Answer: E

Question 168

Perfectly inclusive demand is equal to:

A One

B Zero

C Infinite

D Greater than one

Answer: E

Question 169

In which region of electromagnetic spectrum does the Lyman series of hydrogen atom lie ?

A x-ray

B Litraviolet

C visible

D infrared

Answer: E

Question 170

Which of the following is the right expansion of ILO ?

A International Labour Organization

B Indian Legal Orientation

C International Law and Order

D Inter-State Lawful Ordinance

Answer: E

Question 171

Which state of India has made rain water harvesting compulsory for all houses ?

A Tamil Nadu

B Punjab

C Haryana

D Maharashtra

Answer: E

Question 172

An electrochemical cell which is used as a source of direct electrical current of constant voltage under standard conditions is called a:

A Power transmitter

B Battery

C Generator

D Uninterrupted power supply (UPS)

Answer: E

Question 173

In 2010 a newspaper published its $70,000^{th}$ issue. Which was the newspaper ?

A The Oxford gazette

B The Washington Post

C The Times of London

D The Hindustan Times

Answer: E

Question 174

Impeachment : Proceedings against the president violation of the Constitution can initiated in:

A The Supreme Court

B The Rajya Sabha

C Either House of Parliament

D The Lok Sabha

Answer: E

Question 175

Who built the "Purana Quila ?

A Bihar

B Shershah

C Aurangzeb

D Akbar

Answer: E

Question 176

The opening ceremony of the ICC Cricket World Cup 2015 was held on 12 February 2015 in which cities of New Zealand and Australia ?

A Christchurch and Melbourne

B Hemilton and Perth

C Napier and Adelaide

D Wellington and Sydney

Answer: E

Question 177

Alight wave is incident over a plane surface with velocity X. After reflection the velocity becomes:

A x

B 2x

C $\frac{x}{4}$

D $\frac{x}{2}$

Answer: E

Question 178

The five key indicators of global climate change of our planet are:

A Sea-level, Rising temperatures, Rainfall, Nitrogen and Artic Sea ice

B None of the options

C Artic Sea ice, Carbons dioxide, global temperature, sea level and land ice.

D Antarctic Sea ice, Oxygen, rainfall, Drought and Sea level

Answer: E

Question 179

In operating system, Round Robin Scheduling means :

A A kind of scheduling

B A process allocation policy

C A memory allocation policy

D Reputation policy

Answer: E

Question 180

The reserved for the welfare of wild life is called ?

A Sanctuary

B Botanical Garden

C Forest

D National Park

Answer: E

Question 181

Where did Chandragupta Maurya speech his last days ?

A Thaneshwar

B Kanchi

C Pataliputra

D sravanabelogola

Answer: E

Question 182

Project tiger programme was launched in:

A 1994

B 1973

C 1975

D 1971

Answer: E

Question 183

The national Green Tribinal deals with cases relating to ?

A Criminal ofenses

B Issues relating to protection and conservation of histrorical menuments

C Civil eases

D Environmental protection and conservation of forests.

Answer: E

Question 184

Who was the First Speaker of the Lok Sabha ?

A K.S. Hegde

B Hukum Singh

C Ganesh Vasudev

D Neelam Sanjieeva Reddy

Answer: E

Question 185

FORTRAN is called :

A Floppy Translator

B Formula Translator

C File Translator

D Format Translator

Answer: E

Question 186

Which Indian News Paper has the largest readership ?

A The malayala manorama

B Indian Express

C The Hindu

D The danik jagram

Answer: E

Question 187

The gas dissolved in water that makes it basic is ?

A Ammonia

B Hydrogen

C Sulphur dioxide

D carban dioxide

Answer: E

Question 188

The biggest oil spilt in world history took place in the ?

A Persion Gulf

B Caspian Sea

C Mediterean Sea

D South china Sea

Answer: E

Question 189

Among the following which country has the highest life expectancy ?

A U.S.A

B Switzerland

C Japan

D Denmark

Answer: E

Question 190

Yellow complexion, Medium stature, Oblique eye with an epicanthic fold is the characteristic feature of ?

A Australoids

B Negroid

C Mongoloid

D Cancosoid

Answer: E

Question 191

Chromosome designation of Turner syndrome is:

A 44A+XO

B 44A+XXY

C 44A+XXX

D 44A+XYY

Answer: E

Question 192

The redness in atmosphere at Sunrise and Sunset in due to:

A dispersion of light

B scattering of light

C Refraction of light

D Reflection of light

Answer: E

Question 193

Which day is celebrated as International Yoga Day ?

A April 23

B September 21

C July 21

D June 21

Answer: E

Question 194

December 1 is celebrated as:

A Indian Navy Day

B UNICEF Day

C Children's Day

D World AIDS Day

Answer: E

Question 195

Distant objects are visible as a little out of focus in this condition:

A hypermetropia

B presbiopia

C astigmatism

D myopia

Answer: E

Question 196

Maximum oxygen is available from:

A Green forests

B Deserts

C Grass lands

D Phytoplanktons

Answer: E

Question 197

Which one of the following tribes practices pastoral nomadism ?

A Boro

B Masai

C Pygmies

D Eskimo

Answer: E

Question 198

Who was the first Secretary General of U.N.O ?

A Kuri Waldheim

B Dag Hammarskjold

C Trygve Lie

D U-Thant

Answer: E

Question 199

Who is the author of 'Indica" ?

A Fa-Hien

B Hiuen Tsang

C Megasthenese

D Selucas

Answer: E

Question 200

In a reaction of the type $A + B \rightarrow C + D$ one could ensure it to be a first order reaction by

A Increasing the concentration of a reactant

B Adding a catalyst

C Increasing the temperature

D Increasing the concentration of a product

Answer: E