SSC CPO 2 July 2017 Morning Shift

Reasoning

Instructions

In the following question, select the related word from the given alternatives.

Question 1

Leaves : Rustle : : ? : ?

A Rain : Jingle

B Tyres : Sizzle

C Clouds : Thunder

D Snow : Drizzle

Answer: C

Explanation:

Expression = Leaves : Rustle : : ? : ?

Second is the sound made by first, i.e. crackling of leaves make a rustling sound, similarly sound of clouds is **thunder.**

=> Ans - (C)

Question 2

Phycology : Algae : : ? : ?

A Eccrinology : Amphibians

B Selenography : Secretions

C Haematology : Blood

D Entomology : Soil

Answer: C

Explanation:

Expression = Phycology : Algae : : ? : ?

Phycology is the scientific study of algae also known as algology, similarly, the branch of medicine involving study and treatment of the blood is called **Haematology.**

=> Ans - (C)

Instructions

In the following question, select the related letters from the given alternatives.

Question 3

RVLP : SWMQ : : GLKP : ?

A HQLM

B HMST

C HMLQ

D FKSQ

Answer: C

Explanation:
Expression = RVLP : SWMQ : : GLKP : ?

The pattern followed is :

R	V	L	P
(+1)	(+1)	(+1)	(+1)
S	W	M	Q

Similarly, for GLKP : **HMLQ**

G	L	K	P
(+1)	(+1)	(+1)	(+1)
H	M	L	Q

=> Ans - (C)

Question 4

EFGH : JJJJ : : ADMN : ?

A FFFF

B FHPP

C HHHH

D FHOO

Answer: B

Explanation:
Expression = EFGH : JJJJ : : ADMN : ?

The pattern followed is :

E	F	G	H
(+5)	(+4)	(+3)	(+2)
J	J	J	J

Similarly, for ADMN : **FHPP**

A	D	M	N
(+5)	(+4)	(+3)	(+2)
F	H	P	P

=> Ans - (B)

Instructions

In the following question, select the related number from the given alternatives.

Question 5

3 : 30 : : 7 : ?

A 310

B 320

C 340

D 350

    Answer: D

Explanation:

Expression = 3 : 30 : : 7 : ?

The pattern followed is = $n : n^3 + n$

Eg :- $(3)^3 + 3 = 30$

Similarly, $(7)^3 + 7 = 350$

=> Ans - (D)

Question 6

11 : 121 : : 111 : ?

A 1234

B 2314

C 12321

D 12421

    Answer: C

Explanation:

Expression = 11 : 121 : : 111 : ?

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

Eg :- $(11)^2 = 121$

Similarly, $(111)^2 = 12321$

=> Ans - (C)

Instructions

For the following questions answer them individually

Question 7

In the following question, select the odd word from the given alternatives.

A Mercury

B Gold

C Silver

D Copper

    Answer: A

Explanation:

Among the given elements, gold, silver and copper are solid metals, while **mercury** is a liquid, hence it is the odd one out.

=> Ans - (A)

Question 8

In the following question, select the odd word pair from the given alternatives.

A   Head : Brain

B   Hand : Wrist

C   Arm : Shoulder

D   Feet : Ankle

   Answer: A

Explanation:
First is the part of second, hand is part of the wrist, arm of shoulder and feet of ankle, but head is not part of brain (vice-versa is true), hence is the odd one out.

=> Ans - (A)

Instructions

In the following question, select the odd letters from the given alternatives

Question 9

A   CX

B   HS

C   BY

D   JP

   Answer: D

Explanation:
The pattern followed is that each letter is replaced by the letter at its position, when the alphabets are reversed, i.e. first is replaced by last, second by second last and so on.

C -> X , H -> S , B -> Y , J -> **Q**

=> Ans - (D)

Question 10

A   PU

B   SW

C   CG

D   KO

   Answer: A

Explanation:
(A) : P (**+5** letters) = U

(B) : S (+4 letters) = W

(C) : C (+4 letters) = G

(D) : K (+4 letters) = O

=> Ans - (A)

In the following question, select the odd number pair from the given alternatives

Question 11

A   422 - 8

B   382 - 18

C   718 - 16

D   318 - 12

   Answer: B

Explanation:
The number in the right is equal to the sum of digits of the number on the left.

(A) : $4 + 2 + 2 = 8$

(B) : $3 + 8 + 2 = 13 \neq 18$

(C) : $7 + 1 + 8 = 16$

(D) : $3 + 1 + 8 = 12$

=> Ans - (B)

Question 12

A   64 - 109

B   36 - 83

C   42 - 87

D   102 - 147

   Answer: B

Explanation:
The difference of the numbers is 45

(A) : $109 - 64 = 45$

(B) : $83 - 36 = 47 \neq 45$

(C) : $87 - 42 = 45$

(D) : $147 - 102 = 45$

=> Ans - (B)

Instructions

Arrange the given words in the sequence in which they occur in the dictionary

Question 13

1. First
2. Frown
3. Fist
4. Fast
5. Floor

A 13542

B 41523

C 41352

D 13452

    Answer: C

Explanation:
As per the order of dictionary,

= Fast -> First -> Fist -> Floor -> Frown

≡ 41352

=> Ans - (C)

Question 14

1. Hinge
2. Homely
3. Hanger
4. Hasten
5. Howl

A 34152

B 12534

C 34125

D 31425

    Answer: C

Explanation:
As per the order of dictionary,

= Hanger -> Hasten -> Hinge -> Homely -> Howl

≡ 34125

=> Ans - (C)

Instructions

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

Question 15

R, M, I, F, D, ?

A B

B C

C A

D E

    Answer: B

Explanation:
The pattern followed is :

R (-5 letters) = M

M (-4 letters) = I

I (-3 letters) = F

F (-2 letters) = D

D (-1 letters) = **C**

=> Ans - (B)

Question 16

K, M, O, Q, ?

A   T

B   R

C   S

D   U

   Answer: C

Explanation:
The pattern followed is :

K (+2 letters) = M

M (+2 letters) = O

O (+2 letters) = Q

Q (+2 letters) = **S**

=> Ans - (C)

Instructions

In the following question, select the missing number from the given series.

Question 17

3, 10, 24, 52, 108, ?

A   180

B   190

C   210

D   220

   Answer: D

Explanation:
Numbers of the form $7 \times (2)^n$ are added, where n is whole number.

$3 + (7 \times 2^0) = 10$

$10 + (7 \times 2^1) = 24$

$24 + (7 \times 2^2) = 52$

$52 + (7 \times 2^3) = 108$

$108 + (7 \times 2^4) = \mathbf{220}$

=> Ans - (D)

Question 18

1, 4, 15, 64, ?

A   285

B   315

C   325

D   375

   Answer: C

Explanation:
The pattern followed is :

$1 \times 2 + 2$ = 4

$4 \times 3 + 3$ = 15

$15 \times 4 + 4$ = 64

$64 \times 5 + 5$ = **325**

=> Ans - (C)

Instructions
For the following questions answer them individually

Question 19

Rakesh is 6 ranks ahead of Tanvir in a class of 42 students. If Tanvir's rank is eighteenth from the last, then what is Rakesh's rank from the start?

A   14th

B   15th

C   19th

D   17th

   Answer: C

Explanation:
Total number of students = 42

Tanvir's rank from last = 18th

=> Tanvir's rank from start = $(42 + 1) - 18 = 25$

Rakesh is 6 ranks ahead of Tanvir

=> Rakesh's rank from the start = $25 - 6 = 19^{th}$

=> Ans - (C)

Question 20

Aman is 3 years older to Rohit and 3 years younger to Suresh, while Rohit and Danish are twins. How many years is Suresh older to Danish?

A   3

B   2

C   6

D   12

  Answer: C

Explanation:

Let Rohit's and Danish's age = x years

=> Aman's age = $(x + 3)$ years

=> Suresh's age = $(x + 3) + 3 = (x + 6)$ years

∴ Suresh is older to Danish by = $(x + 6) - x = 6$ years

=> Ans - (C)

Question 21

Aman, Rohit, Suresh, Danish and Alok are arranged in descending order of weight. Aman is third from the top. Alok is between Danish and Aman while Danish is not at the top. Who is at the top?

A   Aman

B   Rohit

C   Suresh

D   Cannot be determined

  Answer: D

Explanation:

The person at the top is the heaviest and at the bottom is the lightest. Aman is third from the top. Danish is not at the top and there is one person between Aman and Danish, => Danish is at the bottom.

Aman
Danish

Alok is between Danish and Aman :

R/S
S/R
Aman
Alok
Danish

Thus, either Rohit or Suresh is at the top, hence cannot be determined.

=> Ans - (D)

Instructions

In the following question, select the word which cannot be formed using the letters of the given word.

Question 22

Separated

A   Rate

B   Repeat

C   Seat

D   Pirate

   Answer: D

Explanation:

The word SEPARATED does not contain any 'I', thus the term **Pirate** cannot be formed.

=> Ans - (D)

Question 23

Gossiping

A   Soap

B   Ping

C   Going

D   Gossip

   Answer: A

Explanation:

The word GOSSIPING does not contain any 'A', thus the term **Soap** cannot be formed.

=> Ans - (A)

Instructions

For the following questions answer them individually

Question 24

In a certain code language, "BLAMED" is written as "DOEGHP" and "DISECT" is written as "VLGWFH". How is "POLARY" written in that code language?

A   QPMBSZ

B   ORSBUD

C   DBVSRO

D   KNOCQZ

   Answer: B

Explanation:

Expression = "BLAMED" is written as "DOEGHP"

The pattern followed is that the first three and the last three letters of the word are reversed and '+3' letters are added.

Also, "DISECT" is written as "VLGWFH"

Similarly, for POLARY : **ORSBUD**

=> Ans - (B)

Question 25

In a certain code language, "HIM-ACE" is written as "21". How is "SIP-TAG" written in that code language?

A   12

B   16

C   14

D   19

   Answer: B

Explanation:
"HIM-ACE" is written as "21"

The pattern followed is :

HIM-ACE $\equiv (8 + 9 + 13) - (1 + 3 + 5) = 21$

Similarly, SIP-TAG $\equiv (19 + 9 + 16) - (20 + 1 + 7) = 16$

=> Ans - (B)

Question 26

In the following question, correct the equation by interchanging two numbers.
5 + 3 ÷ 6 × 9 - 2 = 21

A   5 and 9

B   3 and 6

C   6 and 9

D   5 and 3

   Answer: B

Explanation:
Expression : 5 + 3 ÷ 6 × 9 - 2 = 21

(A) : 5 and 9

L.H.S. $\equiv 9 + 3 \div 6 \times 5 - 2$

= $9 + 2.5 - 2 = 9.5 \neq$ R.H.S.

(B) : 3 and 6

L.H.S. $\equiv 5 + 6 \div 3 \times 9 - 2$

= $5 + 18 - 2 = 21 =$ R.H.S.

=> Ans - (B)

Question 27

If "A" denotes "divided by", "C" denotes "subtracted from", "D" denotes "added to" and "B" denotes "multiplied by", then 15 A 3 D 24 C 12 B 2 = ?

A 5

B 9

C 3

D 7

    Answer: A

Explanation:
Expression : 15 A 3 D 24 C 12 B 2 = ?

$\equiv 15 \div 3 + 24 - 12 \times 2$

= $\left(\frac{15}{3}\right) + 24 - (12 \times 2)$

= $5 + 24 - 24 = 5$

=> Ans - (A)

Question 28

If 62 = 41 and 72 % 52 ^ 22 = 28, then 52 % 32 ^ 12 $$ = ?

A 17

B 22

C 13

D 26

    Answer: A

Question 29

If 6 A 11 B 33 = 18 and 4 B 18 A 9 = 8, then 3 A 5 B 35 = ?

A 12

B 25

C 21

D 18

    Answer: C

Explanation:

Given : 6 A 11 B 33 = 18 and 4 B 18 A 9 = 8

If we replace, $A = \div$ and $B = \times$, we get the desired result.

Eg :- $\overset{6}{11} \times 33 = 6 \times 3 = 18$

and $4 \times \overset{18}{9} = 4 \times 2 = 8$

Similarly, 3 A 5 B 35 = $\overset{3}{5} \times 35 = 3 \times 7 = 21$

=> Ans - (C)

Question 30

In the following question, select the number which can be placed at the sign of question mark (?) from the given alternatives.

1	4
10	7

5	8
14	11

6	9
?	12

A 13

B 14

C 15

D 16

Answer: C

Explanation:

Starting from top left position and moving to the clockwise direction, the difference between consecutive numbers is '3'

Eg :- 1 (+3) = 4 (+3) = 7 (+3) = 10

and 5 (+3) = 8 (+3) = 11 (+3) = 14

Similarly, 6 (+3) = 9 (+3) = 12 (+3) = **15**

=> Ans - (C)

Question 31

In the following question, select the number which can be placed at the sing of question mark (?) from the given alternatives.

	7	
4	16	3
	2	

	7	
5	19	6
	1	

	3	
8	?	7
	4	

A 20

B 21

C 22

D 24

Answer: C

Explanation:

The number in the middle is the sum of other 4 numbers.

Eg :- $7 + 3 + 2 + 4 = 16$

and $7 + 6 + 1 + 5 = 19$

Similarly, $3 + 7 + 4 + 8 = 22$

=> Ans - (C)

Question 32

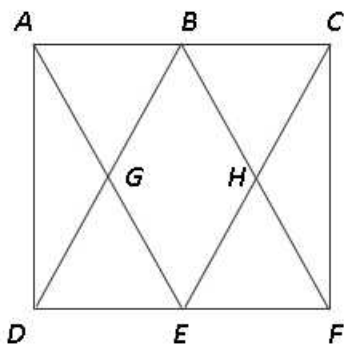**How many triangles are there in the given figure ?**
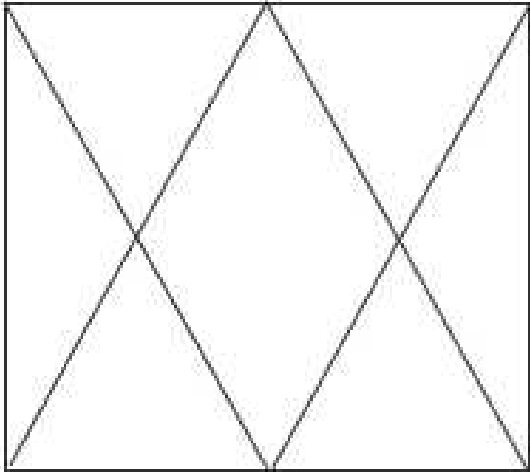
A 10

B 12

C 14

D 16

Answer: B

Explanation:

Small triangles = ADG, ABG, BHC, CHF, DEG, EFH

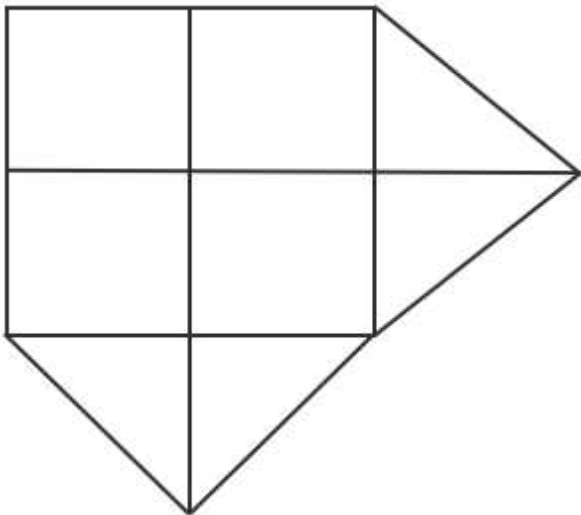Big triangles (containing 2 triangles) = ADE, CEF, ABD, BCF

Big triangles (containing 3 triangles) = BDF, AEC
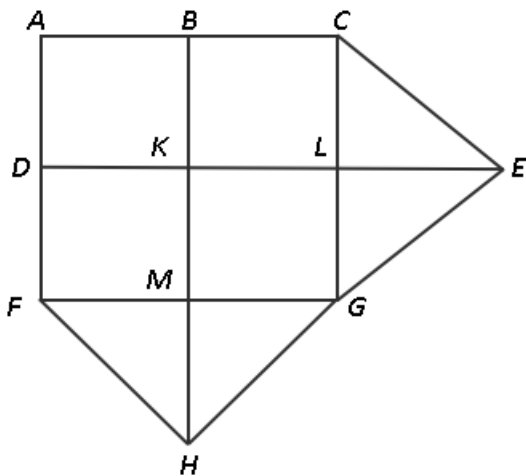
Thus, total triangles = **12**

=> Ans - (B)

Question 33

How many quadrilaterals are there in the given figure ?

A 15

B 17

C 19

D 21

   Answer: B

Explanation:

Small quadrilaterals = ABKD, BCLK, DKMF, KLGM,

Quadrilaterals (containing 2 quads) = ACLD, DLGF, ABMF, BCGM

Quadrilaterals (containing a quad and a triangle) = BCEK, KEGM, DKHF, KLGH

Quadrilaterals (containing 2 quads and a triangle) = ABHF, BCGH, ACED, DEGF

Quadrilaterals (containing 4 quads) = ACGF

Thus, total quadrilaterals = **17**

=> Ans - (B)

Instructions

In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if theyseem to be at variance from commonly known facts, read all the conclusions and then decide which of the given

conclusion logically follows the given statements.

Question 34

Statements:
I. Some pens are glass.
II. All glass are wall.
Conclusions:
I. Some wall are pens.
II. Some wall are glass.

A   Only conclusion (I) follows

B   Only conclusion (II) follows

C   Both conclusion follow

D   Neither conclusion (I) nor conclusion (II) follows

   Answer: C

Explanation:
The venn diagram for above statements is :
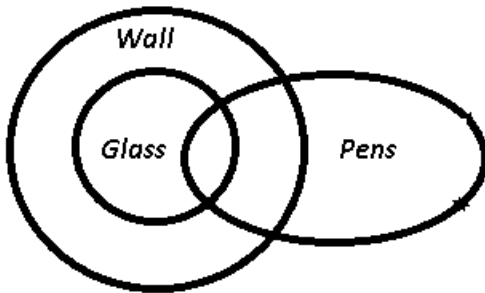
Conclusions:
I. Some wall are pens = true
II. Some wall are glass = true

Thus, both conclusion follow.

=> Ans - (C)

Question 35

In each of the following question below are given some statements followed by some conclusions. Taking the given statements to be true even if they seem to be at variance from commonly known facts, read all the conclusions and then decide which of the given conclusion logically follows the given statements.
Statements:
I. Some beautiful are intelligent.
II. All intelligent are daughters.
Conclusions:
I. Some intelligent are beautiful.
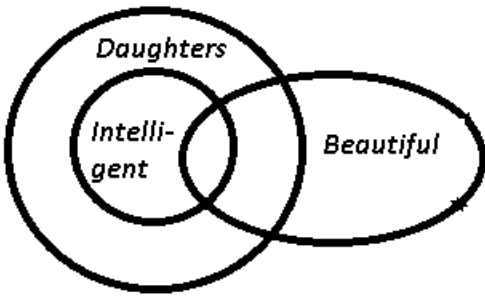**II. Some daughters are intelligent.**
III. Some beautiful are daughters.

A   Only conclusion (I) and (II) follow

B   Only conclusion (I) and (III) follow

C   Only conclusion (II) and (III) follow

D   All conclusions follow

Answer: D

Explanation:
The venn diagram for above statements is :

Conclusions:
I. Some intelligent are beautiful = true
II. Some daughters are intelligent = true
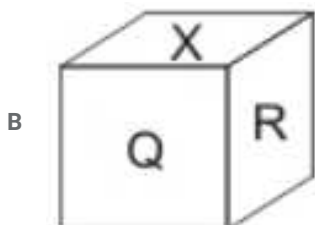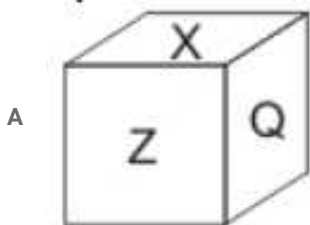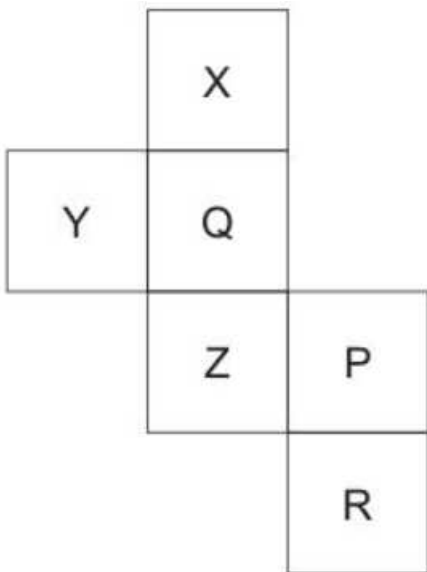III. Some beautiful are daughters = true

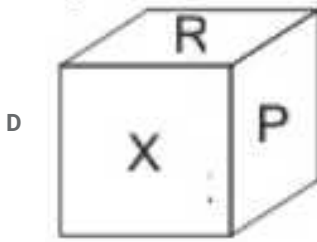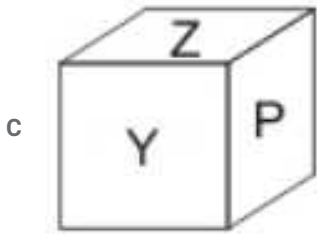Thus, all conclusions follow.

=> Ans - (D)

Instructions
For the following questions answer them individually

Question 36

From the given options, which answer figure can be formed by folding the figure given in the question ?
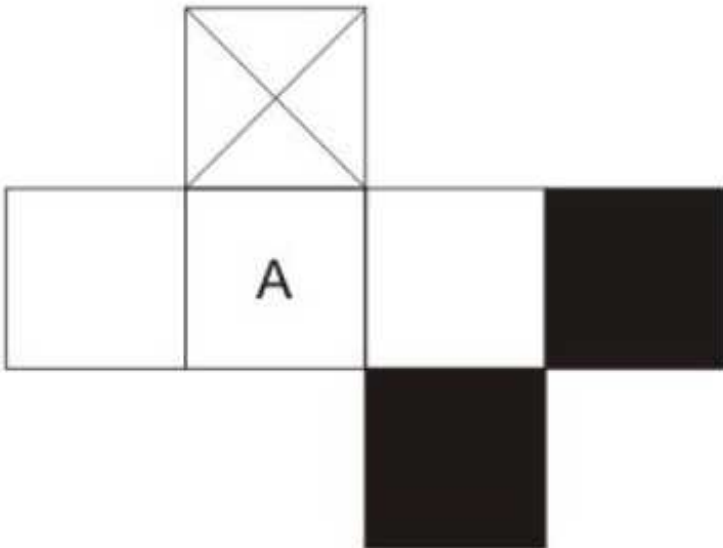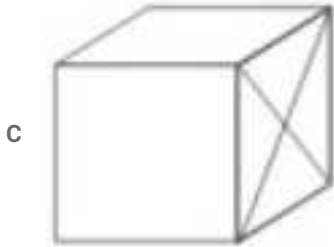

A

B

C

D

Answer: D

Explanation:
Candidate Answer:

Question 37

From the given options, which answer figure can be formed by folding the figure given in the question ?
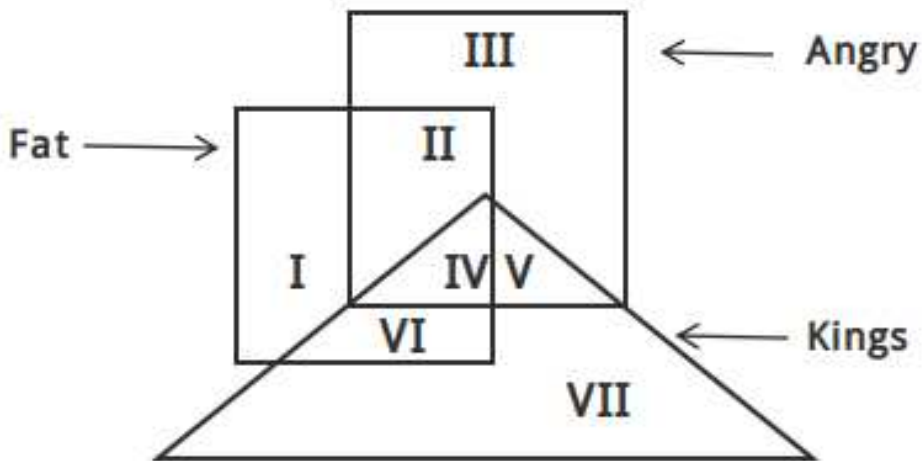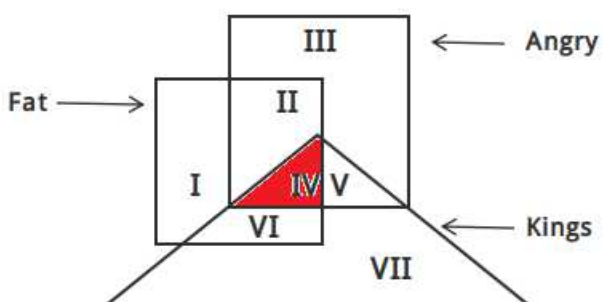

A

B

C

D

Answer: D

Question 38

In the given figure, which Roman numeral represents the angry kings who are fat ?

A V

B IV

C VI
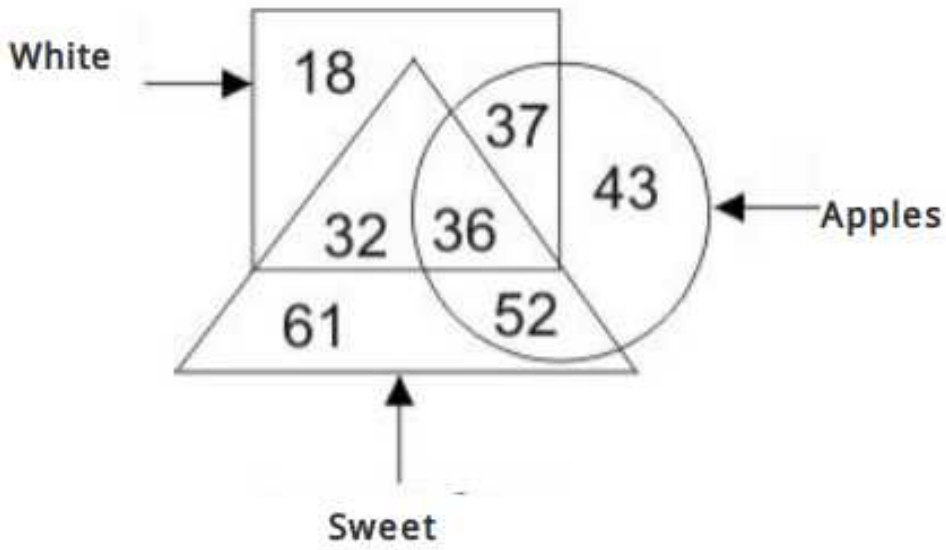
D II

Answer: B

Explanation:

The angry kings who are fat are represented by = **IV**

=> Ans - (B)

Question 39

In the given figure, how many white apples are there ?
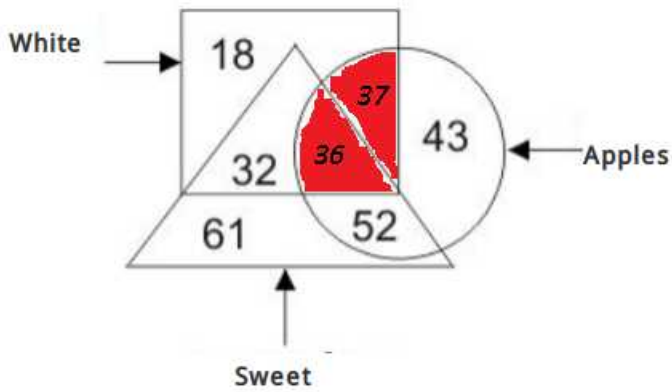

A   37

B   73

C   36

D   88

   Answer: B

Explanation:

Number of white apples = $36 + 37 = 73$

=> Ans - (B)

Question 40

In the given figure, which number represents cold drink which is black and sweet ?
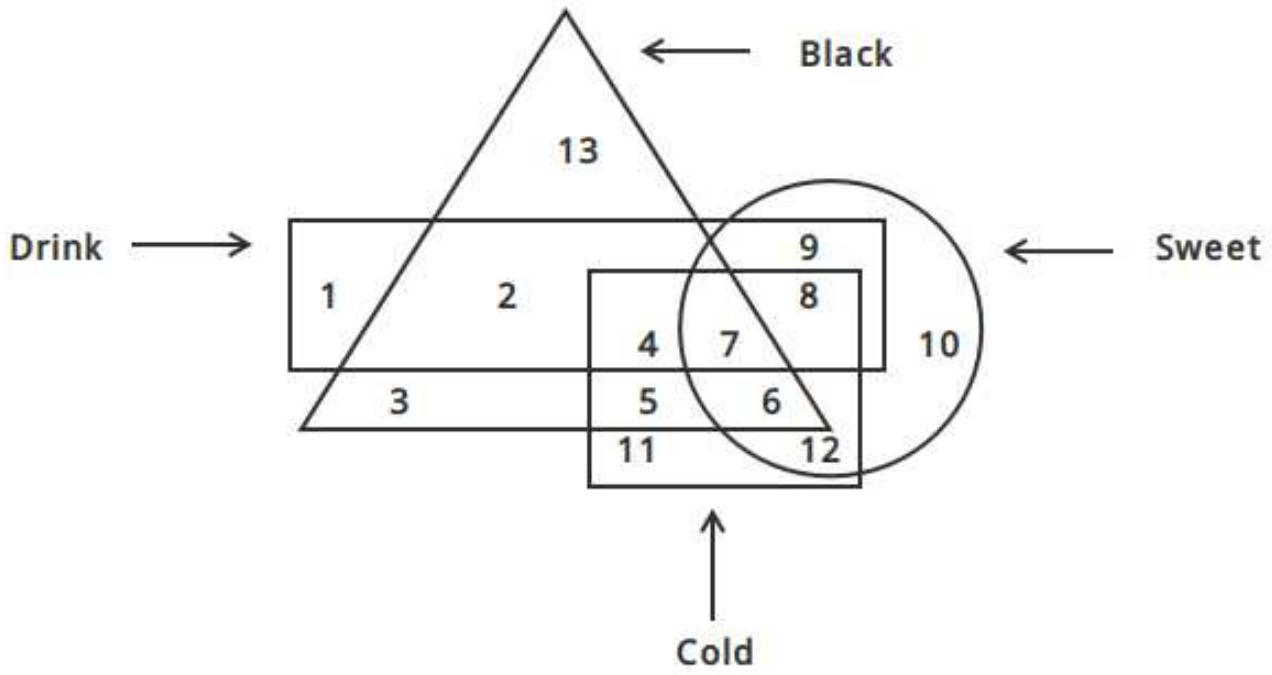
A   4

B   8

C   7

D   6

Answer: C

Explanation:
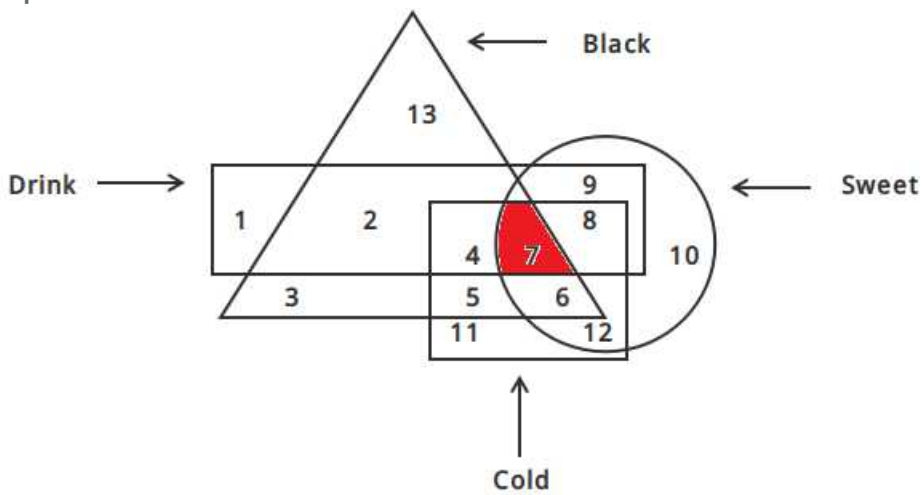
Cold drink which is black and sweet are represented by = 7

=> Ans - (C)

Question 41

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

A

B

C

D

Answer: B

Explanation:
The missing figure at the bottom left corner of the square is a piece of 5 concentric circles pointing at top right, so the last option is eliminated.

The first and third option respectively have 4 and 6 arcs, thus second option is the correct image.

=> Ans - (B)

Question 42

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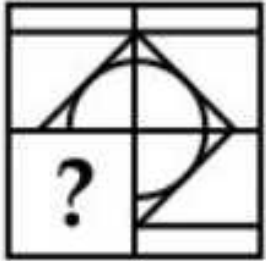
A
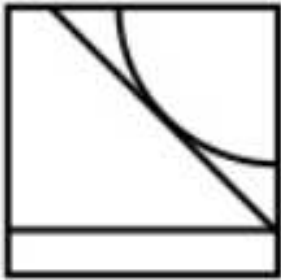
B

C
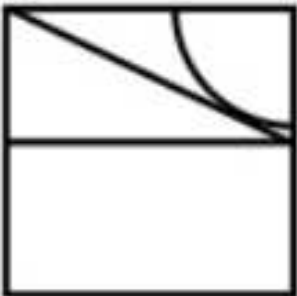
D
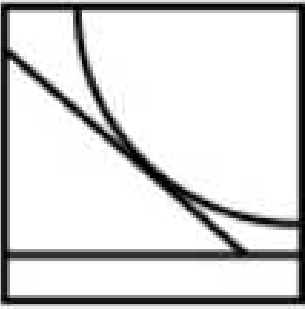
Answer: A

Explanation:

The question figure will be completed by :

=> Ans - (A)

Question 43

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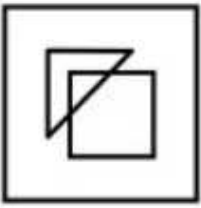
A

B

C

D   None of these

Answer: C

Explanation:

The above figure is represented by 'red' color and is hidden in :
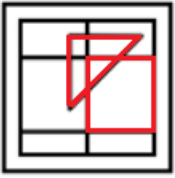
=> Ans - (C)

Question 44

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

A

B

C

D

Answer: C

Explanation:

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

=> Ans - (C)

Question 45

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

A

B

C

D
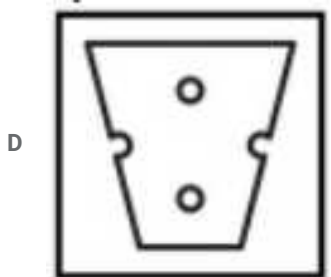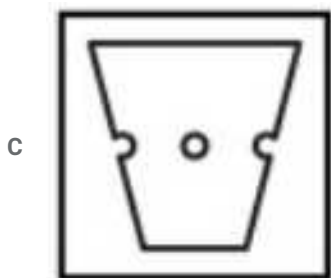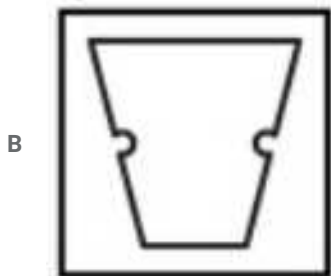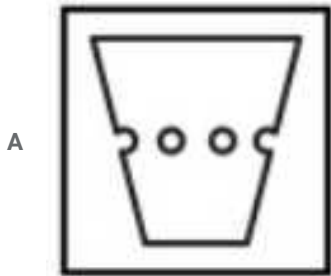
Answer: A

Question 46

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

A

B

C

D
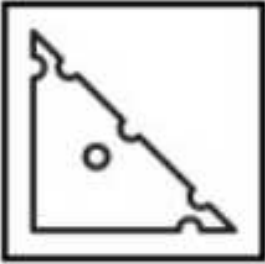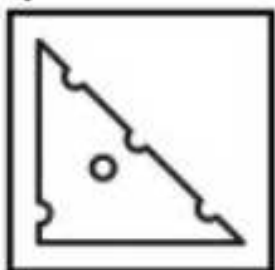
Answer: A

Question 47

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
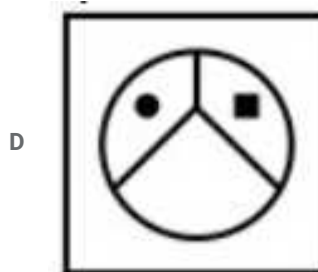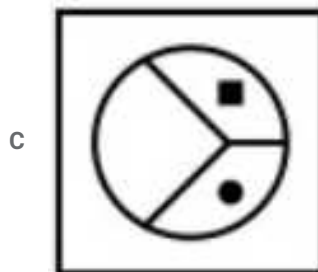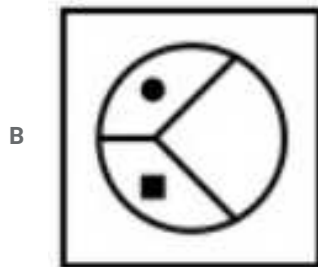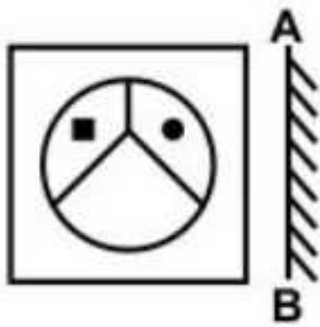
Answer: D

Explanation:

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

So the black square and the circle in the middle will stay horizontally, thus the middle two options will be eliminated.

Also, in the question figure, the square is at the top left side in the circle, hence it will appear at top right side, hence fourth option is the right image.

=> Ans - (D)

Question 48

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
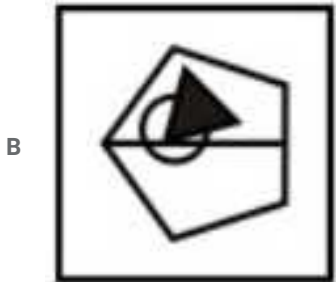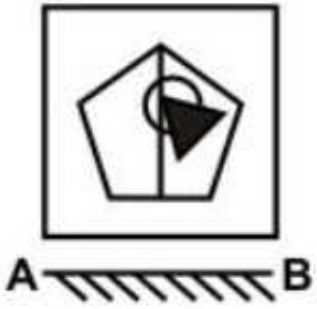
Answer: D

Explanation:

A horizontal mirror is placed, so the object on the top will appear at the bottom in reverse position and vice-versa.

So the pentagon in the middle facing upwards will now appear facing downwards, thus the first two options will be eliminated.

Also, in the question figure, the triangle is facing top left direction, hence it will face bottom left side in the mirror, hence fourth option is the right image.

=> Ans - (D)

Question 49

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 dasses of alphabets as shown in the given two matrices. 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 column, for example, 'G' can be represented by 13, 44, etc., and 'F' can be represented by 67, 86, etc., Similarly, you have to identify the set for the word "MICE".

Matrix-I	0	1	2	3	4
0	I	G	M	N	E
1	N	E	I	G	M
2	G	M	N	E	I
3	E	I	G	M	N
4	M	N	E	I	G

Matrix-II	5	6	7	8	9
5	F	E	A	C	D
6	C	D	F	E	A
7	E	A	C	D	F
8	D	F	E	A	C
9	A	C	D	F	E

A   14, 24, 65, 68

B   41, 12, 77, 75

C   22, 43, 96, 87

D   03, 31, 57, 56

Answer: A

Explanation:
(A) : 14, 2 4, 65, 68 : **MICE**

(B) : 41, 12, 77, 75 : NICE

(C) : 22, 43, 96, 87 : NICE

(D) : 03, 31, 57, 56 : NIAE

=> Ans - (A)

Question 50

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 dasses of alphabets as shown in the given two matrices. 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 column, for example, 'E' can be represented by 11, 42, etc., and 'F' can be represented by 65, 88, etc., Similarly, you have to identify the set for the word "GRAND".

Matrix-I	0	1	2	3	4
0	E	G	K	C	R
1	C	E	R	K	G
2	G	K	C	R	E
3	R	C	G	E	K
4	K	R	E	G	C

Matrix-II	5	6	7	8	9
5	S	D	N	A	O
6	N	A	D	O	S
7	O	S	A	D	N
8	A	O	S	N	D
9	D	N	O	S	A

A 01, 12, 58, 65, 56

B 43, 41, 85, 88, 98

C 20, 23, 66, 95, 89

D 14, 04, 99, 57, 68

Answer: A

Explanation:
(A) : 01, 12, 58, 65, 56 : **GRAND**

(B) : 43, 41, 85, 88, 98 : GRANS

(C) : 20, 23, 66, 95, 89 : GRADD

(D) : 14, 04, 99, 57, 68 : GRANO

=> Ans - (A)

General Awareness

Instructions
For the following questions answer them individually

Question 51

Planned economy in India is based on which system?

A Capitalist system

B Traditional system

C Command system

D Socialist system

Answer: D

Question 52

Planning Commission was constituted in India in which year?

A 1947

B 1950

C 1949

D 1952

Answer: B

Question 53

Which one of the following pair is incorrect?

A Fifth Five Year Plan - 1961-66

B Eight Five Year Plan - 1992-97

C Eleventh Five Year Plan - 2007-12

D First Five Year Plan - 1951-56

Answer: A

Question 54

How many Miniratna companies are there in Category - II?

A 17

B 15

C 13

D 16

Answer: B

Question 55

GNP - depreciation allowances = _____

A National Income

B NDP

C NNP

D GNP

Answer: C

Question 56

When power is shared among different organs of government, then it known as _____.

A   Community Government

B   Separation of powers

C   Coalition Government

D   Amalgamation of powers

   Answer: B

Question 57

Which of the following is CORRECT about coalition form of government?

A   Sharing of power at different levels

B   Sharing of power by different social groups

C   Sharing of power by two or more political parties

D   None of these

   Answer: C

Question 58

Which type of government is based on free and fair election where those currently in power have a fair chance of losing?

A   Democratic

B   Autocratic

C   Monarchic

D   Authoritarian

   Answer: A

Question 59

What is the minimum age required to become a member of Rajya Sabha?

A   Twenty years

B   Thirty years

C   Twenty-two years

D   Twenty-five years

   Answer: B

Question 60

Since Independence, how many time National Emergency has been declared in India?

A   One time

B   Two times

C   Three times

D   Four times

   Answer: C

Question 61

Who among the following presides over a joint sitting of both the houses summoned by the President of India?

A   Chairman of Rajya Sabha

B   Speaker of Lok Sabha

C   President of India

D   Prime Minister of India

   Answer: B

Question 62

For how much time the Presidents Rule can be extended in India with the approval of Parliament in every six months

A   6 months

B   1 year

C   2 years

D   3 years

   Answer: D

Question 63

What is the minimum number of members required to be present in any one of the two houses of parliament for its functioning?

A   One fifth of total members

B   One sixth of total members

C   One seventh of total members

D   One tenth of total members

   Answer: D

Question 64

In Indus Valley Civilization, Kalibangan is famous for which of the following?

A Rock cut architecture

B Sea port

C Cotton cultivation

D Pottery

Answer: D

Question 65

Match the following.

	Monument			Ruler
1	Agra Fort		a.	Sher Shah
2	Taj Mahal		b.	Akbar
3	Purana Quila		c.	Shahjahan

A 1 - a, 2 - b, 3 - c

B 1 - b, 2 - c, 3 - a

C 1 - c, 2 - b, 3 - a

D 1 - c, 2 - a, 3 - b

Answer: B

Question 66

Who was the first Governor General of Bengal?

A Robert Clive

B William Bentinck

C Warren Hasting

D Col. Sanders

Answer: C

Question 67

Second battle of Panipat was fought between which two armies?

A Babur and Lodi Empire

B Babur and Rana Sanga

C   Akbar and Hemu

D   Akbar and Rana of Mewar

  Answer: C

Question 68

Who among the following played an important role in Gadar Movement?

A   Shyamiji Krishna Verma

B   Lal Hardayal

C   Bipin Chandra Pal

D   Vishnu Ganesh Pingle

  Answer: B

Question 69

Which among the following imaginary line lies at 0° latitude?

A   Equator

B   Tropic of Cancer

C   Tropic of Capricorn

D   Prime Meridian

  Answer: A

Question 70

Which among the following Indian river flows westwards and falls into Arabian sea?

A   Narmada

B   Ganga

C   Mahanadi

D   Godavari

  Answer: A

Question 71

What are the imaginary lines encircling the earth horizontally called?

A   Latitudes

B   Longitudes

C   Isobars

D   Isotherms

Answer: A

Question 72

From which of the following continent, all three latitudes i.e. equator, tropic of cancer and tropic of Capricorn pass?

A   North America

B   Asia

C   South America

D   Africa

Answer: D

Question 73

Which of the following city is also known as 'zero-mile centre' of India?

A   Jabalpur

B   Allahabad

C   Nagpur

D   Delhi

Answer: C

Question 74

Which of the following is an example of Ball and Socket joint in humans?

A   Wrist Joint

B   Hip Joint

C   Finger Joint

D   Neck Joint

Answer: B

Question 75

For which of the following a BT seed has also been developed?

A   Wheat

B   Maize

C   Cotton

D   Pulses

Answer: C

Question 76

Which of the following contains highest amount of Vitamin C?

A Capsicum

B Tomato

C Grape

D Lemon

   Answer: D

Question 77

Dolly was an example of cloned _____.

A Dog

B Cow

C Sheep

D Hen

   Answer: C

Question 78

Which of the following is a cold blooded animal?

A Ape

B Mouse

C Snake

D Wolf

   Answer: C

Question 79

Which of the following glands secret growth hormone?

A Adrenal

B Pituitary Gland

C Gonads

D Pancreas

   Answer: B

Question 80

Jet engine works on the principal of conservation of _____.

A   Heat

B   Mass

C   Linear momentum

D   Angular momentum

   Answer: C

Question 81

What will happen to the level of water in a vessel when a piece of ice floating in it melts?

A   Decreases

B   Increases

C   Remains same

D   First increases and then decreases

   Answer: C

Question 82

Which of the following quantity is a measure of inertia?

A   Velocity

B   Acceleration

C   Mass

D   Weight

   Answer: C

Question 83

The instrument used to study the laws of vibrating string is _____.

A   Hydrometer

B   Sonometer

C   Sphygmomanometer

D   Electrometer

   Answer: B

Question 84

Which of the following is/are CORRECT?
I. GUI - Graphical User Interface
II. VDU - Visual Display Unit
III. ALU - All Logical Unit
I. GUI - Graphical User Interface
II. VDU - Visual Display Unit
III. ALU - All Logical Unit

A I and II

B I and III

C Only III

D Only II

   Answer: A

Question 85

Which among the following is not a word processor?

A Microsoft Word

B Word Perfect

C Microsoft Excel

D Word Star

   Answer: C

Question 86

In which of the following silicon is not used?

A Solar Panels

B IC manufacturing

C Optical glass

D Ink pen

   Answer: D

Question 87

Which of the following is used as control rods in Atomic reactor?

A Sodium

B Uranium

C Graphite

D Boron

Answer: D

Question 88

Which of the following is used for the preparation of dynamite?

A   Methyl alcohol

B   Iron oxide

C   Nitro Glycerol

D   Copper sulphate

   Answer: C

Question 89

Which among the following is added to commercial nitric acid to make it coloured?

A   Carbon dioxide

B   Sulphur dioxide

C   Colored impurities

D   Nitrogen dioxide

   Answer: D

Question 90

Match the following

National Park		Animal	
1	Kanha	a.	Rhinoceros
2	Kaziranga	b.	Tiger
3	Gir	c.	Lion

A   1-c, 2-b, 3-a

B   1-b, 2-a, 3-c

C   1-b, 2-c, 3-a

D   1-a, 2-b, 3-c

   Answer: B

Question 91

Which among the following type of trees are also called as sun loving trees?

A Xerophytes

B Heliophytes

C Saprophytes

D Halophytes

Answer: B

Question 92

Which of the following is an air pollutant?
I. Water vapour
II. Carbon dioxide
III. Hydrogen Gas

A Only I

B Only II

C Only III

D Both II and III

Answer: A

Question 93

Which among the following is an initiative proposed by The Ministry of Civil Aviation to make boarding pass and security check-in digital?

A Digi yatra

B Digi Udan

C Digi Sewa

D Digi Yatri

Answer: A

Question 94

Who amongst the following invented 'chronometer'?

A John Harrison

B William Harvey

C Friese Greene

D Robert Koch

Answer: A

Question 95

'Calibre' is related to which sport?

A Shooting

B Cycling

C Baseball

D Golf

Answer: A

Question 96

All souls day is a _____ festival.

A Buddhism

B Jainism

C Christian

D Muslim

Answer: C

Question 97

Who is the recipient of Padma Vibhushan 2017 in the field of Art - Music?

A Vishwa Mohan Bhatt

B Vaishali Bisht

C Aruna Mohanty

D K. J. Yesudas

Answer: D

Question 98

Who has authored the book 'The People's Maharaja' based on the life of Amarinder Singh?

A Venkaiah Naidu

B Khushwant Singh

C Ram Kamal Mukherjee

D Shri Vijay Kumar

Answer: B

Question 99

Which country has dropped the largest non-nuclear weapon over Afghanistan in April 2017?

A   Russia

B   France

C   United States of America

D   Syria

    Answer: C

Question 100

Under 'Muktijodha Scholarship Scheme', India will give 35 crore rupees to children of freedom fighters in _____.

A   Pakistan

B   Bangladesh

C   Sri Lanka

D   Nepal

    Answer: D

Quant

Instructions

For the following questions answer them individually

Question 101

If N = (√6 - √5)/(√6 + √5), then what is the value of N + (1/N)?

A   10

B   11

C   12

D   22

    Answer: D

Explanation:

Given N = (√6 - √5)/(√6 + √5)

Now, N + (1/N) = $\frac{\sqrt{6}-\sqrt{5}}{\sqrt{6}+\sqrt{5}}$ + $\frac{\sqrt{6}+\sqrt{5}}{\sqrt{6}-\sqrt{5}}$

$\Rightarrow 6 + 5 - 2\sqrt{30} + 6 + 5 + 2\sqrt{30}$ = 11 + 11 = 22

Hence, option D is the correct answer.

Question 102

What is the simplified value of $(3+1)(3^2+1)(3^4+1)(3^8+1)(3^{16}+1)$**?**

A $(3^{32}-1)/2$

B $(3^{16}-1)/2$

C $(3^{64}-1)/2$

D $(3^{128}-1)/2$

Answer: A

Explanation:

Given $(3+1)(3^2+1)(3^4+1)(3^8+1)(3^{16}+1)$

Multiply and divide by (3 - 1)

$\frac{(3-1)(3+1)(3^2+1)(3^4+1)(3^8+1)(3^{16}+1)}{3-1}$

$\frac{(3^2-1)(3^2+1)(3^4+1)(3^8+1)(3^{16}+1)}{2}$

$\frac{(3^8-1)(3^8+1)(3^{16}+1)}{2}$

$\frac{(3^{16}-1)(3^{16}+1)}{2}$

$\frac{3^{32}-1}{2}$

Hence, option A is the correct answer.

Question 103

Which value among √11 + √5, √14 + √2, √8 + √8 is the largest?

A √11 + √5

B √14 + √2

C √8 + √8

D All are equal

Answer: C

Explanation:

Given √11 + √5, √14 + √2, √8 + √8

If we add the numbers of each element we get same value i.e 16 (11 + 5 = 14 + 2 = 8 + 8 = 16)

Now multiply the numbers of each element,

11 x 5 = 55, 14 x 2 = 28, 8 x 8 = 64

Element with highest value will be the highest number

√8 + √8 is the highest value

Hence, option C is the correct answer.

Question 104

What is the value of $\frac{(0.5^3)-(0.1)^3}{(0.5)^2+0.5\times0.1+(0.1)^2}$**?**

A 0.1

B 0.4

C 0.5

D 0.6

Answer: B

Explanation:

Given $\frac{(0.5^3)-(0.1)^3}{(0.5)^2+0.5\times0.1+(0.1)^2}$ ......(1)

we know that $a^3 - b^3 = (a-b)(a^2+ab+b^2)$......(2)

Substitute (2) in (1)

$\frac{(0.5-0.1)(0.5)^2+0.5\times0.1+(0.1)^2}{(0.5)^2+0.5\times0.1+(0.1)^2}$

$0.5 - 0.1 = 0.4$

Hence, option B is the correct answer.

Question 105

How many positive factors of 36 are there?

A 4

B 6

C 9

D 12

Answer: C

Explanation:

Number of positive factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, 36 i.e '9'

Hence, option C is the correct answer.

Question 106

Two taps A and B can fill a tank in 10 hours and 12 hours respectively. If the two taps are opened at 10 a.m., then at what time (in p.m.) should the tap A be closed to completely fill the tank at exactly 4 p.m.?

A 2

B 3

C 1

D 1:30

Answer: B

Explanation:

Given, that taps A and B can fill a tank in 10 hours and 12 hours respectively.

Work done by two taps in 1 hour = $(\frac{1}{A} + \frac{1}{B})$ = $\frac{1}{10} + \frac{1}{12} = \frac{6+5}{60} = \frac{11}{60}$

Let tap A be closed after x hours. Then,

Part filled by (A + B) in x hours + part filled by B in (6 - x) hours = 1

$(\frac{1}{A} + \frac{1}{B})x + \frac{6-x}{B} = 1$

$(\frac{11}{60})x + \frac{6-x}{12} = 1 \Rightarrow \frac{11x}{60} + \frac{6}{12} - \frac{x}{12} = 1$

$\Rightarrow \frac{6x}{60} + \frac{6}{12} = 1 \Rightarrow 6x = 30 \Rightarrow x = 5$

Tap A should be closed after 5 hours i.e at 3 pm

Hence, option B is the correct answer.

Question 107

Vijay and Sahil together complete a piece of work in 40 days, Sahil and Ranjit can complete the same work in 48 days and Ranjit and Vijay can complete the same work in 60 days. In how many days can all the three complete the same work while working together?

A 16

B 24

C 32

D 38

   Answer: C

Explanation:
Let, (V + S)'s one day work = $\frac{1}{40}$, (S + R)'s one day work = $\frac{1}{48}$ and (R + V)'s one day work = $\frac{1}{60}$

2(V + S + R) = $\frac{1}{40} + \frac{1}{48} + \frac{1}{60}$

(V + S + R) = $\frac{1}{2}(\frac{1}{40} + \frac{1}{48} + \frac{1}{60})$

(V + S + R) = $\frac{1}{2}(\frac{12+10+8}{480})$

(V + S + R) = $\frac{1}{2}(\frac{30}{480})$

(V + S + R) = $\frac{1}{2}(\frac{1}{16})$

(V + S + R) = $\frac{1}{32}$

Total number of days taken by all three together = 32 days.

Hence, option C is the correct answer.

Question 108

The marked price of an article is 50% more than its cost price. If 20% discount is given, then what will be the profit percentage?

A 20

B 25

C 30

D 50

   Answer: A

Explanation:
Given, marked price of an article is 50% more than its cost price i.e

MRP = 150 % of CP (or) MRP = $\frac{3}{2}$ of CP (or) $\frac{MRP}{CP} = \frac{3}{2}$

Let, MRP = $3x$ and CP = $2x$

If 20% discount is given MRP becomes 80% of 3 x (or) $\frac{12}{5}x$ (or) $2.4x$

Profit percentage = $\frac{2.4x-2x}{2x}$ x 100

$\Rightarrow \frac{0.4}{2}$ x 100 = 0.2 x 100 = 20%

Hence, option A is the correct answer.

Question 109

After giving 40% discount on an article there is still a profit of 20%. What will be the profit percentage when no discount is given?

A 60

B 68

C 78

D 100

 Answer: D

Explanation:

Given, after giving 40% discount on an article there is still a profit of 20%. It can be written as,

60% of MRP = 120 % of CP

MRP = 2CP

Now, if CP is 100% then MRP would be 200%. This implies that there will be 100% profit when no discount is given.

Hence, option D is the correct answer.

Question 110

The ratio of two numbers is 4 : 5. If both numbers are increased by 4, the ratio becomes 5 : 6. What is the sum of the two numbers?

A 9

B 18

C 27

D 36

 Answer: D

Explanation:
Let the two numbers be 4x and 5x.

If both numbers are increased by 4, the ratio becomes 5 : 6

4x + 4 : 5x + 4 = 5 : 6

6(4x + 4) = 5(5x + 4)

24x + 24 = 25x + 20

x = 4

Sum of 2 numbers (5x + 4x) = 9(4) = 36.

Hence, option D is the correct answer.

Question 111

If 2A = 3B, then what is the value of (A + B)/A?

A 5/4

B 2/3

C 5/2

D 5/3

    Answer: D

Explanation:

Given, 2A = 3B i.e

$\frac{A}{B} = \frac{3}{2}$ (or) $\frac{B}{A} = \frac{2}{3}$

Now, $\frac{A+B}{A} \Rightarrow \left(\frac{A}{A} + \frac{B}{A}\right) \Rightarrow \left(1 + \frac{2}{3}\right) = \frac{5}{3}$

Hence, option D is the correct answer.

Question 112

The average marks obtained by 180 students in an examination is 50. If the average marks of passed students is 80 and that of the failed students is 40, then what is the number of students who failed the examination?

A 90

B 135

C 100

D 45

    Answer: B

Explanation:

Let number of failed students in the class be x. Then number of passed students will be (180 - x)

And total number of students = 180 x 50 = 9000

∴. 40x + 80(180 - x) = 9000

⇒ 5400 = 40x (or) x = 135

Hence, option B is the correct answer.

Question 113

The average age of four members of a family is 32 years. If the age of a guest is included, then the average age increases by 12.5%. What is the age (in years) of the guest?

A 52

B 56

C 44

D 12

    Answer: A

Explanation:

Given, the average age of four members of a family = 32 years

Then, total age of the family members will be (32 x 4) = 128 years

If the age of a guest is included then average becomes (12.5% of 32) = 36 years

Now, total age of the family including the age of guest = 36 x 5 = 180

Age of the guest = 180 -128 = 52 years

Hence, option A is the correct answer.

Question 114

If the selling price of 318 articles is equal to the cost price of 212 articles, then what is the loss percentage?

A 20

B $33\frac{1}{3}$

C 40

D $33\frac{2}{3}$

Answer: B

Explanation:
Let cost price of 1 article is x

Selling price of 318 articles = 212 Rs

Cost price of 318 articles = 318 Rs

Profit% = {(318 - 212) / 318} x 100 = (106/318) x 100

$\Rightarrow$ (5300/159) = $33\frac{1}{3}$

Hence, option B is the correct answer.

Question 115

Profit obtained on selling an article for Rs 310 is equal to the loss incurred on selling that article for Rs 230. What will be the loss percentage when selling price is Rs 180?

A $16\frac{1}{3}$

B $16\frac{2}{3}$

C $33\frac{1}{3}$

D $33\frac{2}{3}$

Answer: C

Explanation:
As the percentage of profit is equal to percentage of loss,

Profit/loss = (310 - 230) / 2

$\Rightarrow$ 80 / 2 = 40

Cost price = (230 + 40) or (310 - 40) = 270

Loss percentage when selling price is 180 = {(270 - 180) / 270} x 100

$\Rightarrow$ (90/270) x 100 = 100/3 = $33\frac{1}{3}$

Hence, option C is the correct answer.

Question 116

P is 20% more than Q and 40% less than R. If value of Q is Rs 150, then what is the value of R (in Rs)?

A 300

B 320

C 220

D 250

Answer: A

Explanation:

Given P is 20% more than Q,

P = 120% of Q (or) P = (6/5) x 150 (Q = 150)

P = 180

P is 40% less than R,

P = 60% of R (or) 180 = (3/5) x R

R = 300

Hence, option A is the correct answer.

Question 117

The price of motorcycle depreciates every year by 8%. If the value of the motorcycle after 2 years will be Rs 84640, then what is the present value (in Rs) of the motorcycle?

A 90000

B 102000

C 110000

D 100000

Answer: D

Explanation:

Given that price of motorcycle depreciates every year by 8% then after 2 years,

92% of 92% of $x = 84,640$

$\frac{92}{100}$ x $\frac{92}{100}$ x $x = 84,640$

$x = 100000$

Hence, option D is the correct answer.

Question 118

Diameter of a cycle wheel is 14 cm. A cyclist takes 30 minutes to reach a destination at a speed of 11 km/h. How many revolutions will the wheel make during the journey?

A 12500

B 15000

C 17750

D 20000

Answer: A

Explanation:

Total distance covered by the cyclist = (1/2) x 11 = 5.5 kms

Given, diameter of a cycle wheel = 14cm

Circumference of the wheel = πD

$\Rightarrow$ (22/7) x 14 = 44 cm

Total revolution made by the wheel = $\frac{5.5\ kms}{44\ cms}$

$\Rightarrow \frac{5.5}{44}$ x 10^5 = $\frac{5}{4}$ x 10^4

= 12,500

Hence, option A is the correct answer.

Question 119

A bus left 60 minutes later than the scheduled time but in order to reach its destination 48 km away in time, it had to increase the speed by 4 km/hr from the usual speed. What is usual speed (in km/hr) of the bus?

A 9

B 12

C 15

D 8

 Answer: B

Explanation:

Given $D = 48$. Then $S \times T = 48$ ....(1)

$(T-1)(S+4) = 48$

$TS + 4T - S - 4 = 48$

Substitute (1) in the above equation

$48 + 4(\frac{48}{S}) - S - 4 = 48$

$S^2 + 4S - 192 = 0$

$S = 12, -16$(which cannot be a solution)

Hence, option B is the correct answer.

Question 120

If a certain sum becomes 2 times in 7 years at compound interest, then in how many years, it will become 8 times?

A 14

B 21

C 28

D 35

 Answer: B

Explanation:

The sum becomes 2 times in 7 years at compound interest,

$$2P = P(1 + \tfrac{r}{100})^7$$

$$1 + \tfrac{r}{100} = 2^{1/7} \text{---------(1)}$$

Let the sum becomes 8 times in T years,

$$8P = P(1 + \tfrac{r}{100})^T$$

$$1 + \tfrac{r}{100} = 2^{3/T} \text{-----------(2)}$$

Substitute equation (1) in (2)

$$2^{1/7} = 2^{3/T}$$

$$\tfrac{1}{7} = \tfrac{3}{T}$$

$$T = 21$$

Hence, option B is the correct answer.

Question 121

A certain sum becomes Rs 1020 in 5 years and Rs 1200 in 8 years at simple interest. What is the value of principal?

A 820

B 780

C 700

D 720

Answer: D

Explanation:

Simple interest for 3 years = 1200 - 1020 = 180 (or 60 for 1 year)
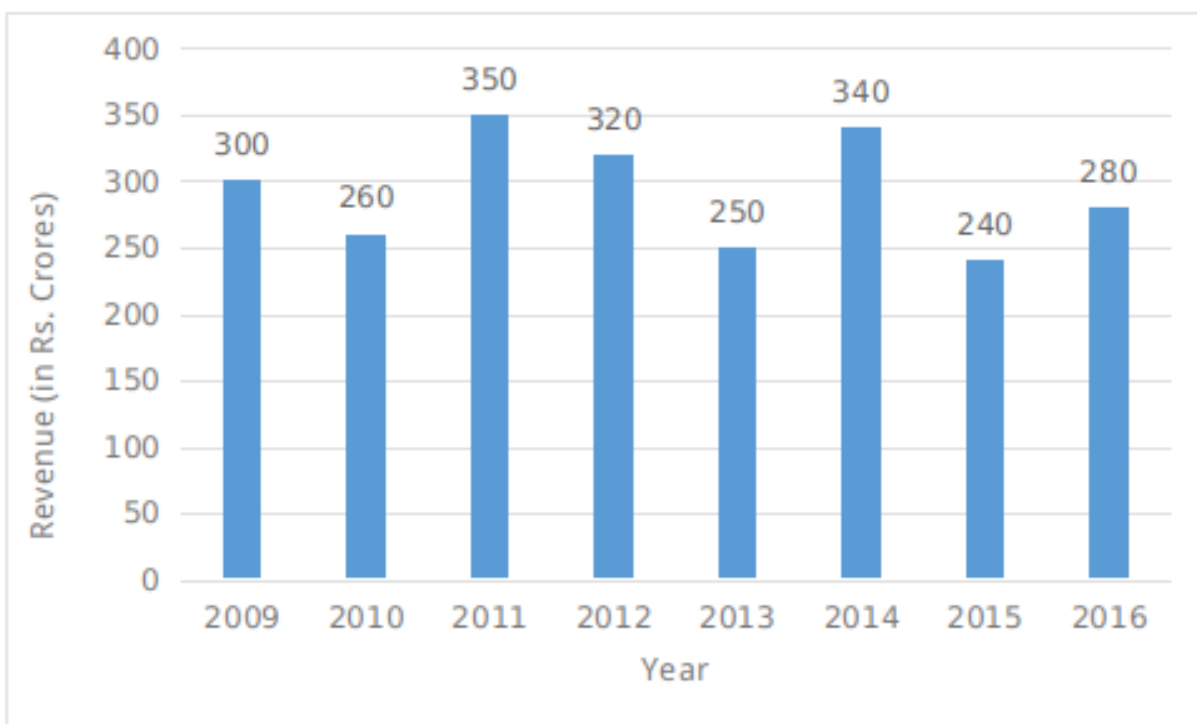
Then simple interest for 5 years = 300

Sum becomes 1020 in 5 years, hence, principal amount = 1020 - 300 = 720.

Hence, option D is the correct answer.

Instructions

The bar graph given below represents the revenue of a firm for 8 years. All the revenue figures have been shown in terms of Rs crores.

Question 122

What is the total value of revenue of the firm (in crores Rs) in years 2010, 2011 and 2012?

A 910

B 930

C 950

D 1020

   Answer: B

Explanation:

Total value of revenue of the firm in years 2010, 2011 and 2012 = 260 + 350 + 320 = 930

Hence, option B is the correct answer.

Question 123

By what percentage has the revenue of the firm decreased in 2010 with respect to the last year?

A 15.38

B 14.44

C 11.11

D 13.33

   Answer: D

Explanation:

The percentage decrease in 2010 with respect to last year = $\frac{300-260}{300}$ x 100

$\Rightarrow \frac{40}{300}$ x 100 = 13.33%

Hence, option D is the correct answer.

Question 124

In how many years, the revenue of the firm is less than the average revenue for these 8 years?

A 3

B 4

C 5

D 6

   Answer: B

Explanation:

The average revenue for given 8 years = (Total revenue in all given years/ number of years)

$\Rightarrow$ (300 + 260 + 350 + 320 + 250 + 340 + 240 + 280) / (8)

$\Rightarrow$ (2340 / 8) = 239.5

Number of years in which the revenue of the firm is less the average is 4 (i.e in 2010, 2013, 2015, 2016)

Hence, option B is the correct answer.

Question 125

In which year the firm has shown maximum percentage increase in its revenue with respect to the previous year?

A 2011

B 2014

C 2016

D All are equal

Answer: B

Explanation:

Percentage increase from the year 2010 to 2011 = (90/260) x 100 = 34.6% (approx)

Percentage increase from the year 2013 to 2014 = (90/250) x 100 = 36 %

Percentage increase from the year 2015 to 2016 = (40/240) x 100 = 16.67% (approx)

Percentage increase is maximum in 2014 from its previous year.

Hence, option B is the correct answer.

Instructions

For the following questions answer them individually

Question 126

If diagonals of a rhombus are 12 cm and 16 cm, then what is the perimeter (in cm) of the rhombus?

A 20

B 40

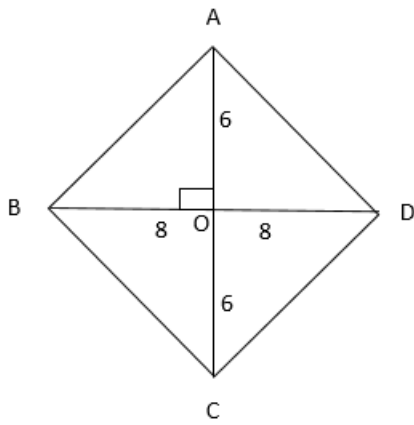**C** 60

D 80

Answer: B

Explanation:

Two diagonals of the rhombus are 12 cms and 16 cms (Given)

We know that,

The sides of the rhombus are congruent i.e sides have same length and

Two diagonals are perpendicular and bisect each other.

$\therefore \angle AOB = 90°$ and

AB = $\sqrt{6^2 + 8^2} = \sqrt{36 + 64} = \sqrt{100} = 10$

Now, perimeter = $4(10) = 40$

Hence, option B is the correct answer.

Question 127

Three spherical balls of radius 2 cm, 4 cm and 6 cm are melted to form a new spherical ball. In this process there is a loss of 25% of the material. What is the radius (in cm) of the new ball?

A 6

B 8

C 12

D 16

Answer: A

Explanation:

Let $r_1 = 2cm$, $r_2 = 4cm$, $r_3 = 6cm$

There is a loss of 25% of the material, volume of the remaining spherical ball is given by,

$\frac{3}{4}$ x $\frac{4}{3}\pi((r_1)^3 + (r_2)^3 + (r_3)^3)$

$\pi(2^3 + 4^3 + 6^3)$ = $\pi(8 + 64 + 216) = 288\pi$

Radius of the new ball is given by,

$\frac{4}{3}\pi r^3$ = 288π (or) $r^3 = 216$ (or) $r = 6cm$

Hence, option A is the correct answer.

Question 128

The ratio of curved surface area of two cones is 1 : 8 and the ratio of there slant heights is 1 : 4. What is the ratio of the radius of the two cones?

A 1 : 1

B 1 : 2

C 1 : 4

D 1 : 8

Answer: B

Explanation:

Curved surface area of a cone = $\pi r l$ (where l is the slant height of the cone)

Let, $l_1 = x$ and $l_2 = 4x$. Now the equation can be written as,

$\frac{\pi(r_1)(x)}{\pi(r_2)(4x)} = \frac{1}{8}$

$\frac{r_1}{r_2} = \frac{1}{2}$

Hence, option B is the correct answer.

Question 129

The perimeter of base of a right circular cone is 44 cm. If the height of the cone is 24 cm, then what is the curved surface area (in cm) of the cone?

A 550

B 1100

C 2200

D 650

Answer: A

Explanation:
Given perimeter of a right circular cone = 44 cms

$\therefore$ $2\pi r = 44$ (or) $2(\frac{22}{7})r = 44$ (or) r = 7

Height of the cone = 24 cms (given)
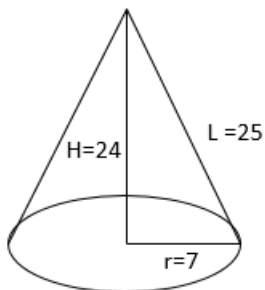
Slant height (l) = $\sqrt{24^2 + 7^2} = \sqrt{576 + 49} = \sqrt{625} = 25$

Curved surface area of the cone = $\pi r l = (\frac{22}{7})(7)(25) = 550$

Hence, option A is the correct answer.

Question 130

A cuboid which sides 6 cm, 9 cm and 32 cm is melted to form a new cube. What is the ratio between the total surface area of the cuboid and that of the cube?

A 93 : 71

B 108 : 113

C 297 : 220

D 89 : 72

Answer: D

Explanation:

Given Length = 6 cm breadth = 9 cm height = 32 cm (of the cuboid)

Volume of both cube and cuboid will be same,

We know that volume of a cuboid = length x breadth x height and volume of the cube = a^3

$\therefore$ 6 x 9 x 32 = a^3 $\Rightarrow$ a = 12

Now, surface area of the cuboid is given by,

2(lb + bh + hl) = 2(54 + 288 + 192) = 2 x 534 = 1068

 surface area of the cube is given by,

6 a^2 = 6 $(12)^2$ = 864

Ratio of surface area of cuboid and surface area of cube = 1068 : 864 = 89 : 72

Hence, option D is the correct answer.

Question 131

When a = 61, b = 63 and c = 65, then what is the value of a ^{3} + b^3 + c^3 - 3abc?

A   1456

B   2268

C   4536

D   5460

   Answer: B

Explanation:

We know that $(a + b + c)^3 - 3abc = \frac{1}{2}(a + b + c)((a - b)^2 + (b - c)^2 + (c - a)^2)$

$\Rightarrow \frac{1}{2}(61 + 63 + 65)((61 - 63)^2 + (63 - 65)^2 + (65 - 61)^2)$

$\Rightarrow \frac{1}{2}(189)(2^2 + 2^2 + 4^2)$ = $\frac{1}{2}(189)(24) = 2268$

Hence, option B is the correct answer.

Question 132

If x = 3-2√2, then √x + (1/√x) is equal to ___.

A   0

B   1

C   2

D   2√2

   Answer: D

Explanation:

Given, $x = 3 - 2\sqrt{2}$......(1)

$\sqrt{x} = \sqrt{3 - 2\sqrt{2}}$ (or) $\sqrt{x} = \sqrt{(\sqrt{2})^2 + (\sqrt{1})^2 - 2\sqrt{2}}$

$\sqrt{x} = \sqrt{(\sqrt{2}) - \sqrt{1})^2}$ (or) $\sqrt{x} = \sqrt{2} - 1$........(2)

Now, $\sqrt{x} + \frac{1}{\sqrt{x}} = \frac{x+1}{\sqrt{x}}$

Substitute equation (1) and (2) in the above equation

$\frac{3-2\sqrt{2}+1}{\sqrt{2}-1}$ (or) $\frac{4-2\sqrt{2}}{\sqrt{2}-1}$

Multiply and divide by $\sqrt{2}+1$

$\Rightarrow \frac{4-2\sqrt{2}}{\sqrt{2}-1} \times \frac{\sqrt{2}+1}{\sqrt{2}+1} = (4-2\sqrt{2})(\sqrt{2}+1)$

$\Rightarrow (4\sqrt{2}+4-4-2\sqrt{2}) = 2\sqrt{2}$

Hence, option D is the correct answer.

Question 133

If $\frac{1}{x+2} = \frac{3}{y+3} = \frac{1331}{z+1331} = \frac{1}{3}$, then what is the value of $\frac{x}{x+1} + \frac{4}{y+2} + \frac{z}{z+2662}$?

A   0

B   1

C   3/2

D   3

   Answer: C

Explanation:
Given $\frac{1}{x+2} = \frac{1}{3}$

We get x = 1 .....(1)

$\frac{3}{y+3} = \frac{1}{3}$

we get y = 6 .....(2)

$\frac{1331}{z+1331} = \frac{1}{3}$

we get z = 2662 ....(3)

We need to find $\frac{x}{x+1} + \frac{3}{y+3} + \frac{z}{z+2662}$

Substitute equations (1), (2) and (3) in the above equation

$= \frac{1}{1+1} + \frac{3}{6+3} + \frac{2662}{2662+2662}$

$= \frac{1}{2} + \frac{3}{9} + \frac{1}{2}$

$= \frac{3}{2}$

Hence, option C is the correct answer.

Question 134

If $x^2 + \frac{1}{x^2} = \frac{7}{4}$ for x > 0, then what is the value of $x + \frac{1}{x}$?

A   2If

B   √15/2

C   √5

D   √3

   Answer: B

Explanation:

Let,

$$\left(x + \tfrac{1}{x}\right)^2 = x^2 + \tfrac{1}{x^2} + 2(x)\left(\tfrac{1}{x}\right)$$

$$\left(x + \tfrac{1}{x}\right)^2 = \tfrac{7}{4} + 2$$

$$\left(x + \tfrac{1}{x}\right)^2 = \tfrac{15}{4}$$

$$\left(x + \tfrac{1}{x}\right) = \tfrac{\sqrt{15}}{2}$$

Hence, option B is the correct answer.

Question 135

If x + y + z = 0, then what is the value of $\dfrac{x^2}{yz} + \dfrac{y^2}{xz} + \dfrac{z^2}{xy}$?

A   0

B   1/3

C   1

D   3

   Answer: D

Explanation:

Given x + y + z = 0. So, x + y = -z, y + z = -x, z + x = -y ----------(1)

$$\dfrac{x^2}{yz} + \dfrac{y^2}{xz} + \dfrac{z^2}{xy}$$

$$\dfrac{x^3 + y^3 + z^3}{xyz} \quad \text{----------(2)}$$

We know that, $a^3 + b^3 + c^3 = (a + b + c)^3 - 3ab(a + b) - 3bc(b + c) - 3ac(a + c) - 6abc$

Hence, equation (2) can be written as,

$$\dfrac{(x+y+z)^3 - 3xy(x+y) - 3yz(y+z) - 3zx(x+z) - 6xyz}{xyz}$$

Now substitute equation (1) in the above equation,

$$\dfrac{(0)^3 + 3xy(z) + 3yz(x) + 3zx(y) - 6xyz}{xyz}$$

$$\dfrac{3xyz}{xyz} = 3$$

Hence, option D is the correct answer.

Question 136

What is the ratio of in-radius and circum-radius of an equilateral triangle?

A   1 : 2

B   1 : 3

C   1 : 4

D   3 : 2

   Answer: A

Explanation:

In case of an equilateral triangle In-radius(r) = $\frac{side}{2\sqrt{3}}$ and circum-radius(R) = $\frac{side}{\sqrt{3}}$

∴ Ratio between them = $\frac{side}{2\sqrt{3}}$: $\frac{side}{\sqrt{3}}$

⇒ 1:2

Hence, option A is the correct answer.

Question 137

In ΔPQR, ∠P : ∠Q : ∠R = 1 : 3 : 5. What is the value (in degrees) of ∠R - ∠P?

A   30

B   80

C   45

D   60

   Answer: B

Explanation:

Let, ∠P = 1x, ∠Q = 3x, ∠R = 5x

Sum of interior angles of a triangle = 180 degrees i.e

∠P + ∠Q + ∠R = 180 degrees

⇒ 9x = 180 (or) x = 20

∠R - ∠P = 5x - 1x

∠R - ∠P = 4x (or) 4 x 20

∠R - ∠P = 80

Hence, option B is the correct answer.

Question 138

A circular wire of length 168 cm is cut and bent in the form of a rectangle whose sides are in the ratio of 5 : 7. What is the length (in cm) of the diagonal of the rectangle?

A   √4127

B   √3137

C   √1813

D   √3626

   Answer: D

Explanation:

Let, length of the rectangle = 5x and breadth = 7x

A circular wire of length 168 cm is cut and bent in the form of rectangle i.e perimeter of the rectangle.

∴ 2(5x + 7x) = 168 ⇒ 24x = 168 ⇒ x = 7

Length = 35cm and Breadth = 49cm

Now, diagonal of the rectangle = $\sqrt{35^2 + 49^2}$

⇒ $\sqrt{1225 + 2401}$ ⇒ $\sqrt{3626}$

Hence, option D is the correct answer.

Question 139

In ΔABC, a line parallel to side BC cuts the side AB and AC at points D and E respectively and also point D divide AB in the ratio of 1 : 4. If area of ΔABC is 200 cm^2, then what is the area (in cm^2) of quadrilateral DECB?

A 192

B 50

C 120

D 96

Answer: A

Explanation:
The ratio of AD and DB = 1: 4 (given)
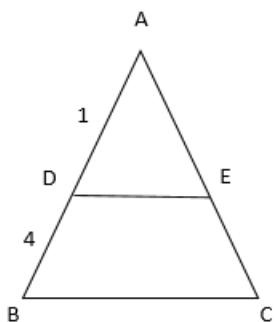
Hence, the ratio of AD and AB can be taken as 1 : 5

△ ADE, △ ABC are similar triangles, so their areas will be in the ratio of 1 : 25 (∵ AD : AB = 1 : 5)

Total area of the triangle = 200

25x = 200 (or) x = 8 cm^2

Now, Area of ADE = 8 cm^2 and Area of DECB = 200 - 8 = 192 cm^2

Hence, option A is the correct answer.

Question 140

In the given figure, PB is one-third of AB and BQ is one-third of BC. If the area of BPDQ is 20 cm^2, then what is the area (in cm^2) of ABCD?
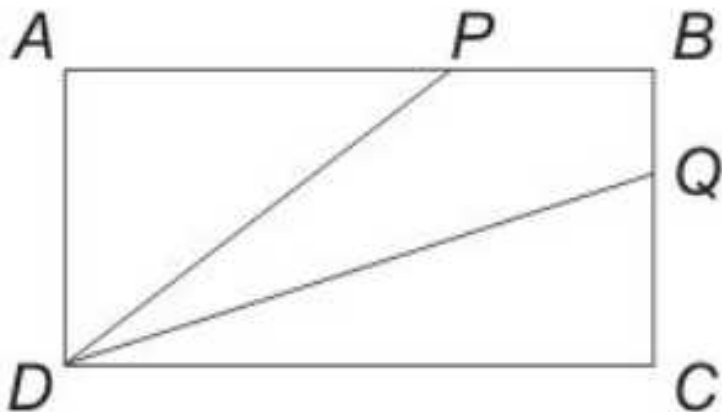
A 45

B 30

C   40

D   60

Answer: D

Explanation:

Given PB is one-third of AB and BQ is one-third of BC
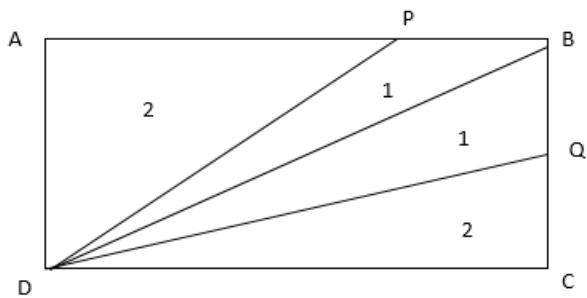
Area of $\triangle$ ADP : Area of $\triangle$ PDB = 2 : 1 and

Area of $\triangle$ BDQ : Area of $\triangle$ QDC = 2 : 1

The area of BPDQ is 20 cm^2 (given) then area of $\triangle$ PDB = 10 cm^2 and area of $\triangle$ BDQ = 10 cm^2

Total area of ABCD is given by,

Area of ($\triangle$ ADP + $\triangle$ PDB + $\triangle$ BDQ + $\triangle$ QDC) = 20 + 10 + 10 + 20 = 60 cm^2

Hence, option D is the correct answer.

Question 141

If $sec\theta = \frac{13}{12}\ and\ \theta$ is acute, then what is the value of $(\sqrt{cot\theta + tan\theta})$**?**

A $\frac{13}{2\sqrt{15}}$

B $\frac{12}{2\sqrt{13}}$

C $\frac{13}{2\sqrt{5}}$

D $\frac{2}{13}$

Answer: A

Explanation:

Given,

$sec\theta = \frac{13}{12}$
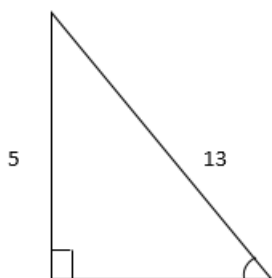
Then, $\cot \theta = \frac{12}{5}$ and $\tan \theta = \frac{5}{12}$

$(\sqrt{cot\theta + tan\theta}) = (\sqrt{\frac{12}{5} + \frac{5}{12}}) = (\sqrt{\frac{169}{60}}) = \frac{13}{2\sqrt{15}}$

Hence, option A is the correct answer.

Question 142

If $(1 + tan^2\theta) = \frac{625}{49}$ and θ is acute, then what is the value of $(\sqrt{sin\theta + cos\,\theta})$?

A   1

B $\frac{5}{4}\sqrt{\frac{31}{42}}$

C $\frac{\sqrt{31}}{5}$

D   5/7

   Answer: C

Explanation:
Given,

$(1 + tan^2\theta) = \frac{625}{49}$ (or) $sec^2\theta = \frac{625}{49}$

$sec\,\theta = \frac{25}{7}$

$Cos\,\theta = \frac{7}{25}$ and $sin\,\theta = \frac{24}{25}$
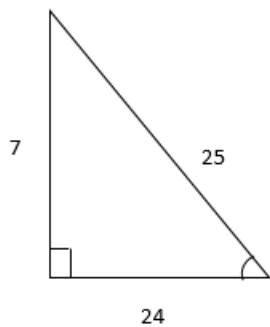
$\sqrt{sin\theta + cos\,\theta} = \sqrt{\frac{7+24}{25}} = \sqrt{\frac{31}{25}} = \frac{\sqrt{31}}{5}$

Hence, option C is the correct answer.

Question 143

If sin θ + sin^2 θ = 1, then what is the value of $(cos^{12}\,\theta + 3\,cos^{10}\,\theta + 3\,cos^8\,\theta + cos^6\,\theta - 1)$

A   -1

B   0

C   1

D   2

   Answer: B

Explanation:
Given $sin\theta + sin^2\theta = 1$

$\Rightarrow sin$ θ = 1 - sin^2 θ $\Rightarrow sin$ θ = cos^2 θ .....(1)

Now, $(cos^{12} \theta + 3 cos^{10} \theta + 3 cos^8 \theta + cos^6 \theta - 1)$

$(cos^4\theta + cos^2\theta)^3$ - 1

Substitute equation (1) in the above equation

$(sin^2\theta + cos^2\theta)^2$ - 1

1 - 1 = 0

Hence, option B is the correct answer.

Question 144

If cot $\theta = \sqrt{11}$ and θ is acute, then what is the value of $\left(\frac{cosec^2 \theta + sec^2 \theta}{cosec^2 \theta - sec^2 \theta}\right)$?

A   2/3

B   6/5

C   3/4

D   7/6

Answer: B

Explanation:
Given, cot $\theta = \sqrt{11}$

$\left(\frac{cosec^2 \theta + sec^2 \theta}{cosec^2 \theta - sec^2 \theta}\right)$ = $\left(\frac{1+cot^2 \theta + 1+tan^2 \theta}{1+cot^2 \theta - 1+tan^2 \theta}\right)$

$\Rightarrow \left(\frac{1+11 + 1+\frac{1}{11}}{1+11 - 1+\frac{1}{11}}\right)$ = $\left(\frac{\frac{144}{11}}{\frac{120}{11}}\right)$ = $\frac{144}{20}$

$\Rightarrow \frac{6}{5}$

Hence, option B is the correct answer.

Question 145

If $\frac{cos \theta}{1+sin \theta} + \frac{cos \theta}{1-sin \theta} = 2\sqrt{2}$ and θ is acute, then what is the value (in degrees) of θ?

A   30

B   45

C   60

D   90

Answer: B

Explanation:
Given,

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

$cos \theta \left(\frac{1}{1+sin \theta} + \frac{1}{1-sin \theta}\right) = 2\sqrt{2}$

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

$cos \theta \left(\frac{2}{cos^2\theta}\right) = 2\sqrt{2}$

$\cos \theta = \frac{1}{\sqrt{2}}$

$\theta = 45°$

Hence, option B is the correct answer.

Instructions

The given pie chart shows the distribution (in degrees) of cars sold of different models by a company in 2015-16.
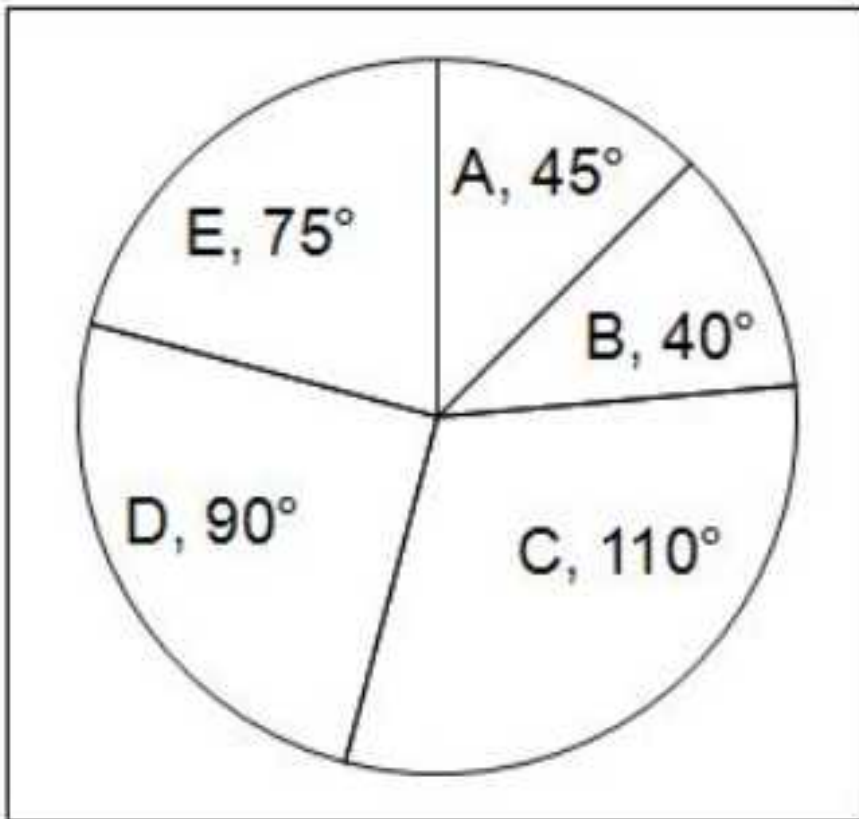
Question 146

If the number of cars sold of model D is 40500, then how many more cars of model E are sold than that of A?

A   8100

B   16200

C   24300

D   13500

   Answer: D

Explanation:
Given, number of cars sold of model D is 40,500 i.e 90 degrees = 40,500

1 degree = 450

More number of cars sold of model E than A = (75 degrees - 45 degrees) = 30 degrees

30 degrees = 450 x 30 = 13,500

Hence, option D is the correct answer.

Question 147

If the number of cars sold of model D is 40500, what is the ratio between the number of cars sold of model D and E?

A 9 : 5

B 6 : 5

C 11 : 9

D 9 : 7

    Answer: B

Explanation:

Ratio of cars sold by D and E is given by,

(90 degrees) : (75 degrees)

6 : 5

(Note: Here we can ignore the number of cars sold as we need to find the ratio)

Hence, option B is the correct answer.

Question 148

If the number of cars sold of model D is 72900, then what is the total number of cars sold (of all the models) together by the company?

A 291600

B 208100

C 162000

D 214160

    Answer: A

Explanation:

Given number of cars sold of model D is 72,900 i.e 90 degrees = 72,900

$\Rightarrow$ 1 degree = 810

Total number of cars of all the models = 360 x 810

$\Rightarrow$ 2,91,600

Hence, option A is the correct answer.

Question 149

If number of cars sold of model C are 22000, then what will be the difference in the number of cars sold of model A and B?

A 800

B 1200

C 1000

D 1500

    Answer: C

Explanation:

Given, number of cars of model $C = 22,000$ i.e $110°$

$\Rightarrow 110° = 22,000$

$\Rightarrow 1° = 200$

Difference in the number of cars sold of model A and B = $(45° - 40°)$ i.e $5°$

$\Rightarrow 5° = (5 \times 200) = 1000$

Hence, option C is the correct answer.

Question 150

If 5% of the total number of cars sold of model E is 750, then what is the average number of cars sold of all the models?

A   15000

B   14400

C   16800

D   14000

Answer: B

Explanation:
Let the total number of cars sold = x

$\Rightarrow$ (5/100) x (75/360) x x = 750

$\Rightarrow$ (1/20) x (1/360) x x = 10

$\Rightarrow x$ = 72,000

Average number of cars = (72,000 / 5)

= 14,400

Hence, option B is the correct answer.

English

Instructions

In the following question, some part of the sentence may have errors. Find out which part of the sentence has an error and select the appropriate option. If a sentence is free from error, select 'No Error'.

Question 151

Can you imagine (a:/ that she has thirty (b:/ five pair of shoes. (c:/ No Error (d:

A   1

B   2

C   3

D   4

Answer: C

Question 152

Mr. Gupta with his wife (a:/ and younger brother (b:/ were present at the station. (c:/ No Error (d:

A 1

B 2

C 3

D 4

    Answer: C

Question 153

Rajni is planning to settle (a:/ in Mumbai as soon as (b:/ she retires in August the next year. (c:/ No Error (d:

A 1

B 2

C 3

D 4

    Answer: C

Question 154

I was born (a:/ on 14th July, 1990 (b:/ in Allahabad. (c:/ No Error (d:

A 1

B 2

C 3

D 4

    Answer: B

Question 155

Not only we saw (a:/ the President but also (b:/ the Chief Minister of Delhi. (c:/ No Error (d:

A 1

B 2

C 3

D 4

    Answer: A

Instructions

In the following question, the sentence given with blank to be filled in with an appropriate word. Select the correct alternative out of the four and indicate it by selecting the appropriate option.

Question 156

Cancer has long been identified as a silent killer because the patient has no _____ of the danger freely invading his system.

A information

B traversing

C inkling

D strategy

Answer: A

Question 157

He gave me an additional _____ of Rs 800 a month by permission of the manager.

A pay

B salary

C allowance

D perquisites

Answer: C

Question 158

Virat Kohli _____ another feather to his cap by his wonderful performance in the T20 World Cup.

A took

B created

C added

D captured

Answer: C

Question 159

The assistant manager decided to resign when she was _____ for promotion to deputy manager.

A passed over

B passed off

C passed by

D passed out

Answer: A

Question 160

If Neha persists in telling lies to me I shall sue her _____ slander.

A of

B on

C for

D to

    Answer: C

Instructions

In the following question, out of the four alternatives, select the word similar in meaning to the word given.

Question 161

Epitome

A type

B extension

C ruddy

D lively

    Answer: A

Question 162

Spurious

A bitter

B gloomy

C fake

D dumb

    Answer: C

Question 163

Invincible

A declaiming

B perplexing

C uninspiring

D unbeatable

    Answer: D

Question 164

Trepidation

A disastrous

B exaggerate

C nervousness

D ephemeral

   Answer: C

Question 165
Wastrel

A disingenuous

B spendthrift

C hard work

D dubious

   Answer: B

Instructions

In the following question, out of the four alternatives, select the word opposite in meaning to the word given.

Question 166
Acknowledge

A compliant

B bent

C deny

D defeat

   Answer: C

Question 167
Abstain

A pursue

B ignore

C create

D fail

   Answer: A

Question 168
Barbarous

A accidental

B constant

C civilized

D downward

Answer: C

Question 169

Callow

A secretive

B immoral

C belated

D sophisticated

Answer: D

Question 170

In the following question, out of the four alternatives, select the word opposite in meaning to the word given.
Eulogistic

A annoying

B rigidity

C rationality

D critical

Answer: D

Instructions

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.

Question 171

At variance with

A In one time

B In opposite

C In any way

D Sometimes

Answer: B

Question 172

A snake in the grass

A A coward

B A treacherous person

C A friendly person

D An honest person

   Answer: B

Question 173
Bolt from the blue

A A source of quarrel

B Narrow escape

C A sudden calamity

D To take revenge

   Answer: C

Question 174
Cry in the wilderness

A Rebuke

B Confused and lost

C Aggravate the situation

D Unpopular opinion

   Answer: D

Question 175
On the brink of

A To be alert

B To be near to

C Not at all

D Occasionally

   Answer: B

Instructions

Improve the bracketed part of the sentence.

Question 176

Before I met Sakshi, I (had had) a bad opinion of her.

A   have had

B   had

C   did have

D   no improvement

  Answer: D

Question 177

The girl (told her teacher) to explain the passage.

A   said to her teacher

B   asked her teacher

C   called her teacher

D   no improvement

  Answer: B

Question 178

It will take four hours to walk (across) the caves.

A   over

B   through

C   between

D   no improvement

  Answer: B

Question 179

When I lived in Kanpur I (was going) for movie once a week.

A   used to go

B   had gone

C   went

D   no improvement

  Answer: A

Question 180

Abhishek was going to the church (then Neha came on to) meet him.

A when Neha was coming to

B before Neha was coming to

C when Neha came to

D no improvement

Answer: C

Instructions

In the following question, out of the four alternatives, select the alternative which is the best substitute of the phrase.

Question 181

Being unable to pay one's debt

A partisan

B bohemian

C ascetic

D insolvent

Answer: D

Question 182

Government by officials in a state

A aristocracy

B bureaucracy

C dictatorship

D plutocracy

Answer: B

Question 183

Which can be rooted out

A eradicable

B internment

C animism

D incorrigible

Answer: A

Question 184

Which can easily be carved without breaking

A reformism

B cannibal

C interment

D flexible

Answer: D

Question 185

A garland of flowers

A bouquet

B wreath

C virago

D rabble

Answer: B

Instructions

In the following question, four words are given out of which one word is incorrectly spelt. Select the incorrectly spelt word.

Question 186

A accountancy

B accummulate

C acquaintance

D affectionate

Answer: B

Question 187

A battalian

B sufficient

C tremendous

D vaccination

Answer: A

Question 188

A essential

B anihilation

C emission

D erroneous

   Answer: B

Question 189

A tranquillize

B transmission

C tremendeus

D thunderous

   Answer: C

Question 190

A ulterior

B theoretical

C vermilion

D amileorate

   Answer: D

Instructions

In the following passage some of the words have been left out. Read the passage carefully and select the correct answer for the given blank out of the four alternatives.

Blessed is the man or woman into whose life has come the beauty and power of such a _____. Prize it well. Do all in your _____ to keep such a friendship unbroken. Avoid the _____, for when it comes it cannot be _____and the jarring note mars the harmony. It is not alone a question of _____that may be full and complete. It is the hurt in the heart that will not readily heal and the confidence that will not fully come back.

Question 191

Blessed is the man or woman into whose life has come the beauty and power of such a _____.

A knowledge

B friendship

C brotherhood

D relationship

   Answer: B

Question 192

Do all in your _____ to keep such a friendship unbroken.

A   power

B   deeds

C   success

D   resources

   Answer: A

Question 193

Avoid the _____,

A   break

B   consequences

C   disturbances

D   irrationality

   Answer: A

Question 194

for when it comes it cannot be _____and the jarring note mars the harmony.

A   treated

B   build

C   mended

D   eradicated

   Answer: C

Question 195

It is not alone a question of _____that may be full and complete.

A   conflict

B   silence

C   inadversity

D   forgiveness

   Answer: D

Instructions

A passage is given with five questions following it. Read the passage carefully and select the best answer to each question out of the given four alternatives.

Science and religion - the two terms have come to signify a mutual antagonism. The two, it is commonly declared, are poles apart; their spheres of activity and their methods differ widely, so much so that they are considered to be irreconcilable.
On the face of it, science and religion appear to be the two opposite poles of man's consciousness. Science is basically concerned with

the material world; its efforts are directed towards unraveling the "how" of reality while religion is concerned with the "why" of reality. Science deals with analyzing tangible entities into its minutest parts, and then arrives at conclusions about the way in which tangible realities are organized. While science is analytical, religion takes the ultimate reality for granted. Religion follows the metaphysical path; the concept of God is ultimately a matter of faith and it is this faith which is the basis of the religious man's attribution of a design or meaning for the reality.

The modes of action are different in science and religion. Science relies on experiment, whereas religion is based on experience. Any religious experience, whether it is Christ's or Ramakrishna's, is personal and subjective. Science, on the other hand, is marked by objectivity. Theory has to be corroborated by tangible proof. Science benefits mankind by providing material comforts. The frontiers of science do not end in knowledge but are extended to the formation of appliances for actual use. Science, it has been somewhat unfairly charged, cultivates the materialistic thinking. However, it has to be admitted that the mental attitude promoted by religion is entirely different, while the basis of scientific progress is unbridled curiosity and courageous endeavour, the truly religious spirit cavils at such presumption that man's mind can penetrate the mysteries of the universe. Science promotes fearless inquiry while an essential ingredient of religion is the humility born of fear of God. Science incorporates a love of experimental knowledge, while religion does not believe in the rational approach.

Question 196

What do you mean by the word 'antagonism'?

A   co-related

B   conflicting

C   harmony

D   sympathy

Answer: B

Question 197

Why science and religion are considered to be irreconcilable?

A   Both relates to the present world

B   Both arrives to conclusions in which tangible realities are organized

C   Both differs in their spheres of activity and methods

D   Modes of actions of both are similar to each other

Answer: C

Question 198

According to the passage which of the following statement is INCORRECT?

A   science analysis tangible entities

B   religion is concerned with the 'why' of reality

C   religion follows the metaphysical faith

D   science is based on experience

Answer: D

Question 199

Which of the following reason provided material comforts to people in case of science?

A the subjectivity of science

B tangible proofs of the theories of science

C materialistic thinking being cultivated by science

D promotion of fearless inquiry by science

    Answer: B

Question 200

What can be the suitable title for the passage?

A Science and Religion - Possibility of Reconcile

B Science is better than Religion

C Religion is better than Science

D Science and Religion

    Answer: D