SSC MTS 21 September 2017 Shift 1

Reasoning

Instructions

For the following questions answer them individually

Question 1

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

3	4	4	?
5	2	6	60
8	1	5	40

A 42

B 48

C 44

D 168

Answer: B

Explanation:

In each row, the number at the end is equal to the product of first three numbers.
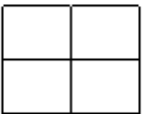
Eg :- $5 \times 2 \times 6 = 60$

and $8 \times 1 \times 5 = 40$

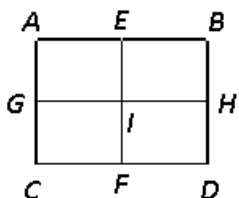Similarly, $3 \times 4 \times 4 = 48$

=> Ans - (B)

Question 2

How many squares are there in the given figure ?

A 4

B 5

C 8

D 9

Answer: B

Explanation:

Small squares = AEIG, EBHI, GCFI, IHDF

Big square = ABCD

Thus, total squares = **5**

=> Ans - (B)

Question 3

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 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 row and next by its column, for example, 'C' can be represented by 11, 67, etc., and 'E' can be represented by 22, 58, etc. Similarly, you have to identify the set for the word "FOLK".

	0	1	2	3	4
0	A	K	S	Y	D
1	F	C	M	U	B
2	N	H	E	O	W
3	T	P	J	G	Q
4	X	V	R	L	I

	5	6	7	8	9
5	B	L	V	E	O
6	J	T	C	M	W
7	H	R	A	K	U
8	F	P	Z	I	S
9	D	N	X	G	Q

A   10, 59, 56, 01

B   85, 59, 43, 79

C   10, 23, 43, 79

D   85, 24, 43, 78

  Answer: A
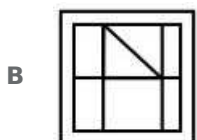
Explanation:
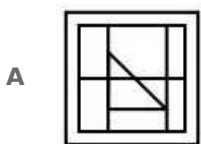(A) : 10, 59, 56, 01 = **FOLK**
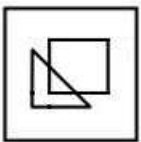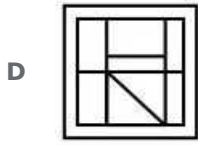
(B) : 85, 59, 43, 79 = FOLU

(C) : 10, 23, 43, 79 = FOLU

(D) : 85, 24, 43, 78 = FWLK

=> Ans - (A)

Question 4

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

A

B

C

D
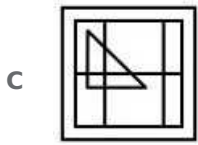
Answer: C

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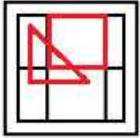
=> Ans - (C)

Question 5

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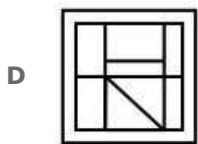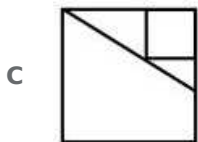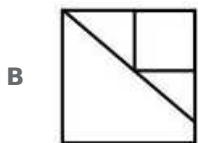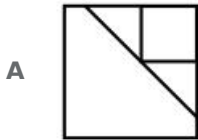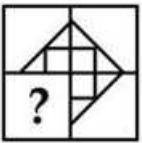
A

B

C

D

Answer: A

Explanation:
The question figure will be completed by :

=> Ans - (A)

Question 6

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
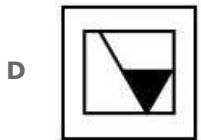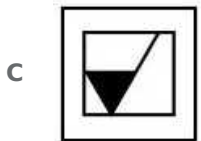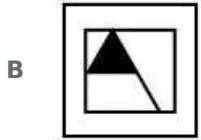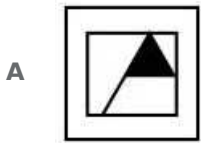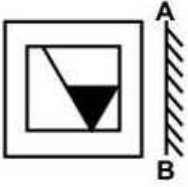
 Answer: C

Explanation:

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

So the black triangle in the bottom right will be reversed and it will appear at bottom left in the mirror image.

Hence third option is the right image.

=> Ans - (C)

Question 7

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?
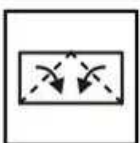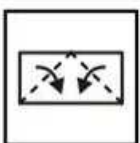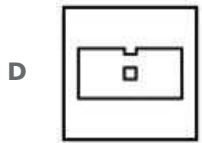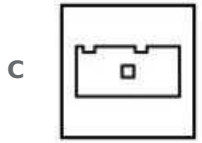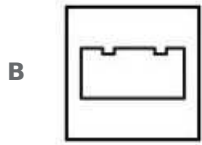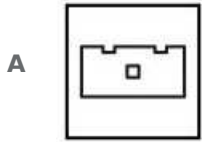
Question 8

If 'c' means '÷', 'd' means '+', 'e' means '-' and 'f' means '×', then

24 c 3 f 4 d 6 = ?

A   32

B   30

C   38

D   28

   Answer: C

Explanation:

Expression : 24 c 3 f 4 d 6 = ?

$\equiv 24 \div 3 \times 4 + 6$

$= \frac{24 \times 4}{3} + 6$

$= 32 + 6 = 38$

=> Ans - (C)

Question 9

If 9 % 6 % 5 % 1 = 5619 and 3 % 4 % 1 % 6 = 1463, then 1 % 2 % 5 % 7 = ?

A   1725

B   5271

C   2571

D 7125

   Answer: B

Explanation:

Given : 9 % 6 % 5 % 1 = 5619 and 3 % 4 % 1 % 6 = 1463

The pattern followed is that the first number is written at the end and the second number does not change its position and the rest of the numbers are filled as it is.

Eg : 9 % 6 % 5 % 1 = _ 6 _ 9

Here 5 and 1 will be filled in the blank spaces in that order.

Similarly, 1 % 2 % 5 % 7 = **5271**

=> Ans - (B)

Question 10

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

1. Boiled
2. Brinjal
3. Boring
4. Banged
5. Brown

A 43152

B 41325

C 43125

D 41352

   Answer: B

Explanation:

As per the order of dictionary :

= Banged -> Boiled -> Boring -> Brinjal -> Brown

≡ 41325

=> Ans - (B)

Question 11

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

68, 65, 60, 53, 44, ?

A 31

B 37

C 35

D 33

   Answer: D

Explanation:

Consecutive odd numbers starting from 3 are subtracted.

68 - 3 = 65

65 - 5 = 60

60 - 7 = 53

53 - 9 = 44

44 - 11 = **33**

=> Ans - (D)

Question 12

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

A, Z, C, X, E, V, G, T, ?, ?

A   JS

B   KS

C   IR

D   KR

   Answer: C

Explanation:

Expression : A, Z, C, X, E, V, G, T, ?, ?

The above series is a combination of 2 series at alternate positions.

1st : A (+2 letters) = C (+2 letters) = E (+2 letters) = G (+2 letters) = I

2nd : Z (-2 letters) = X (-2 letters) = V (-2 letters) = T (-2 letters) = R

Thus, missing term = **IR**

=> Ans - (C)

Question 13

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

A   Up : Down

B   Day : Night

C   Happy : Smile

D   Open : Close

   Answer: C

Explanation:

(Up : Down), (Day : Night) and (Open : Close) are pairs of antonyms, but happy and smile are synonyms.

Hence (Happy : Smile) is the odd pair.

=> Ans - (C)

Question 14

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

A 3 : 9

B 5 : 25

C 6 : 36

D 8 : 63

Answer: D

Explanation:

The numbers are of the form : $n : n^2$

(A) : $(3)^2 = 9$

(B) : $(5)^2 = 25$

(C) : $(6)^2 = 36$

(D) : $(8)^2 = 64 \neq 63$

=> Ans - (D)

Question 15

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

A OU

B AI

C EI

D IO

Answer: B

Explanation:

The vowels in the English alphabets in chronological order are : A,E,I,O,U

Apart from (A,I) all are consecutive pair of vowels, hence it is the odd one out.

=> Ans - (B)

Question 16

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

Cap, Pencil, Apple

A

B

C

D
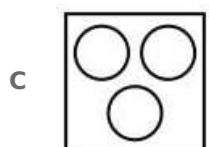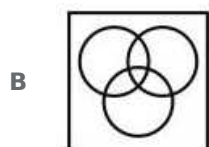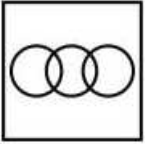
Answer: C

Explanation:

Cap, pencil and apple are completely different from each other, hence do not intersect one another.

Thus, the venn diagram that best describes above relationship is :
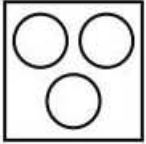
=> Ans - (C)

Question 17

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

Writer : Pen : : Plumber : ?

A   Screwdriver

B   Wrench

C   Saw

D   None of these

   Answer: B

Explanation:

Expression = Writer : Pen : : Plumber : ?

The main tool of a writer is a pen with which he does his job, i.e. write, similarly a plumber uses a **wrench.**

=> Ans - (B)

Question 18

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

14 : 35 : : 18 : ?

A   55

B   40

C   45

D   50

   Answer: C

Explanation:

Expression = 14 : 35 : : 18 : ?

The pattern followed is that the second number is the result of multiplying first number by 2.5

Eg :- $14 \times 2.5 = 35$

Similarly, $18 \times 2.5 = 45$

=> Ans - (C)

Question 19

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

XJ : AM : : IS : ?

A LU

B LV

C KU

D KV

   Answer: B

Explanation:
Expression = XJ : AM : : IS : ?

The pattern followed is that in the pair each letter of the first term is related to the second term as :

X (+3 letters) = A , J (+3 letters) = M

Similarly, I (+3 letters) = L , S (+3 letters) = V

=> IS : **LV**

=> Ans - (B)

Question 20

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

CORPORATION

A PORT

B CRAIN

C TRAIN

D SPORT

   Answer: D

Explanation:
The word CORPORATION does not contain any 'S', thus the term **Sport** cannot be formed.

=> Ans - (D)

Question 21

S walks 8 km towards east. He turns right and walks 6 km. He turns right and walks 8 km. How far (in km) is he from his starting point?

A 14

B 10

C 8

D 6

  Answer: D

Explanation:
Let S starts from point A and walks 8 km towards east and reaches point B. He then turns right and walks 6 km southwards to C. He again turns right and walks 8 km and finally stops at point D.
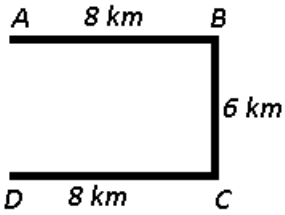
Thus, he is **6 km** from his starting point.

=> Ans - (D)

Question 22

L is 3 years older to M. M is 6 years younger to N. N is 4 years older to O. O is 7 years younger to P. Who is the youngest?

A   O

B   N

C   M

D   L

  Answer: C

Explanation:
Let M's age = 10 years

L is 3 years older to M, => L's age = $(10 + 3) = 13$ years

M is 6 years younger to N, => N's age = $(10 + 6) = 16$ years

N is 4 years older to O, => O's age = $(16 - 4) = 12$ years

O is 7 years younger to P, => P's age = $(12 + 7) = 19$ years

∴ **M** is the youngest.

=> Ans - (C)

Question 23

In 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. All cups are chairs.
II. All chairs are tables.

Conclusions:

I. Some tables are cups.
II. Some tables are chairs.

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 :
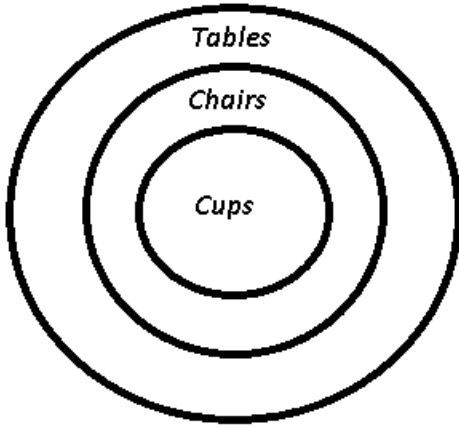
Conclusions:

I. Some tables are cups = true
II. Some tables are chairs = true

Thus, both conclusion follow.

=> Ans - (C)

Question 24

In a certain code language, "MOVIE" is written as "LPUJD". How is "CINEMA" written in that code language?

A   BJMFLB

B   BJMFLZ

C   BJNFLZ

D   BJMDLB

  Answer: A

Explanation:
"MOVIE" is written as "LPUJD"

The pattern followed is :

M	O	V	I	E
(-1)	(+1)	(-1)	(+1)	(-1)
L	P	U	J	D

Similarly, CINEMA : **BJMFLB**

C	I	N	E	M	A
(-1)	(+1)	(-1)	(+1)	(-1)	(+1)
B	J	M	F	L	B

=> Ans - (A)

Question 25

In a certain code language, "SOME" is written as "10645" and "BOYS" is written as "26710". How is "RUNS" written in that code language?

A 93510

B 93501

C 93511

D 92510

   Answer: A

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 26

Scientists see the evidence (a)/ of early life in (b)/ ancient rocks. (c)/ No Error (d)

A   a

B   b

C   c

D   d

   Answer: D

Question 27

Before you finalise (a)/ any of them, search (b)/ and comparing. (c)/ No Error (d)

A   a

B   b

C   c

D   d

   Answer: C

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 28

Aashish tried to _____ smoking, but did not succeed.

A   get away

B   put out

C   give up

D   do away

   Answer: C

Question 29

Ashina has invited some of her friends _____ coffee.

A   on

B   for

C   to

D   at

   Answer: B

Instructions

In the following question, out of the give four alternatives, select the one which best expresses the meaning of the given word.

Question 30

Amplify

A   Boost

B   Contract

C   Curtail

D   Shorten

   Answer: A

Question 31

Casual

A   Planned

B   Occasional

C   Deliberate

D   Serious

   Answer: B

Question 32

Insane

A   Reasonable

B   Healthy

C   Crazy

D   Balanced

   Answer: C

Instructions

In the following question, out of the give four alternatives, select the one which is opposite in meaning of the given word.

Question 33

Hinder

A   Arrest

B   Aid

C   Check

D   Curb

   Answer: B

Question 34

Provident

A   Wasteful

B   Saving

C   Cautious

D   Prepared

   Answer: A

Question 35

Subtle

A   Fine

B   Implied

C   Indirect

D   Harsh

   Answer: D

In the following question, out of the four given alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

Question 36

I ll at ease

A   To be uncomfortable

B   To be in fashion

C   To be in a puzzling state

D   To be in danger

   Answer: A

Question 37

Get the upper hand

A   To revenge

B   To start to go

C   To take risk

D   To get an advantage

   Answer: D

Instructions

Improve the bracketed part of the sentence.

Question 38

Today is the (original day) to complete this, after it you won't be able to do so.

A   last day

B   first day

C   second day

D   No improvement

   Answer: A

Question 39

(Attention) is better than cure.

A   Examination

B   Prevention

C   Creation

D No improvement

Answer: B

Instructions

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

Question 40

Science of writing and compiling a dictionary

A Calligraphy

B Lexicography

C Autobiography

D Bibliography

Answer: B

Question 41

Science of the constitution of the whole universe

A Cosmopolitan

B Chronicle

C Cosmography

D Connoisseur

Answer: C

Instructions

In the following question, a word has been written in four different ways out of which only one is correctly spelt. Select the correctly spelt word.

Question 42

A Challing

B Challenge

C Challeng

D Chaillenge

Answer: B

Question 43

A Diagnose

B Daignose

C Diagnause

D   Diagnuase

  Answer: A

Instructions

Rearrange the parts of the sentence in correct order.

Question 44

Good books

P: man in various
Q: have always helped
R: spheres of life

A   QPR

B   RPQ

C   RQP

D   QRP

  Answer: A

Question 45

There is a

P: in doing one's work
Q: honestly and efficiently
R: sense of joy

A   PQR

B   QRP

C   RPQ

D   QPR

  Answer: C

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.

___(1)_____ is everything which we do in the right way in right time. It leads ___(2)____ on the right path. We all follow various types of discipline in our ___(3)____ lives. There are many ___(4)____ like we wake up in the early morning, drink a glass of water, go to the washroom to get fresh, do brush our teeth, take bath, have ___(5)____, go to school in uniform at right time, etc all are discipline.

Question 46

_____ is everything

A   Religion

B   Relation

C Discipline

D Origin

Answer: C

Question 47

It leads _____ on the right path.

A us

B you

C them

D all

Answer: A

Question 48

types of discipline in our _____ lives.

A boring

B daily

C caring

D daring

Answer: B

Question 49

There are many _____ like we wake

A exceptions

B citations

C creations

D examples

Answer: D

Question 50

take _____, go to school in uniform at right time, etc

A lunch

B breakfast

C dinner

D snacks

Quant

Instructions

For the following questions answer them individually

Question 51

What is the value of 11 + 12 + 13 + ... + 35?

A 575

B 630

C 585

D 595

Answer: A

Explanation:

Expression : 11 + 12 + 13 + ... + 35?

The above series is an A.P. with first term, $a = 11$, last term, $l = 35$ and common difference, $d = 1$

=> Number of terms be = $n = (35 - 11) + 1 = 25$

Sum of A.P. = $\frac{n}{2}(a + l)$

= $\frac{25}{2}(11 + 35)$

= $25 \times 23 = 575$

=> Ans - (A)

Question 52

What is the value of $38 \div 19 \times 3 + 5$ **?**

A 11

B 10

C 13

D 17

Answer: A

Explanation:

Expression : $38 \div 19 \times 3 + 5$

= $\left(\frac{38}{19} \times 3\right) + 5$

= $(2 \times 3) + 5$

= $6 + 5 = 11$

=> Ans - (A)

Question 53

What is the Highest Common Factor of $\frac{3}{4}$ **and** $\frac{12}{13}$ **?**

A   3/50

B   3/52

C   52/3

D   50/3

   Answer: B

Explanation:

H.C.F. $\left(\frac{a}{b}, \frac{c}{d}\right) = \frac{H.C.F.(a,c)}{L.C.M.(b,d)}$

Fractions : $\frac{3}{4}$ and $\frac{12}{13}$

Now, H.C.F. (3,12) = 3

and L.C.M. (4,13) = 52

=> Highest common factor of $\frac{3}{4}$ and $\frac{12}{13}$ = $\frac{3}{52}$

=> Ans - (B)

Question 54

If 347P is divisible by 9, then what is the value of P?

A   2

B   3

C   4

D   7

   Answer: C

Explanation:

If a number is divisible by 9, then the sum of its digits must also be divisible by 9.

Number : 347P

Sum of digits = $3 + 4 + 7 + P = (14 + P)$

Now, for above value to be divisible by 9, it should be equal to 18 (next highest multiple of 9)

=> $14 + P = 18$

=> $P = 18 - 14 = 4$

=> Ans - (C)

Question 55

What is the value of $(37 + 23)^2 - (37 - 23)^2$ **?**

A   1908

B   1602

C 1702

D 3404

Answer: D

Explanation:

Expression : $(37 + 23)^2 - (37 - 23)^2$

$= (60)^2 - (14)^2$

$= 3600 - 196 = 3404$

=> Ans - (D)

Question 56

Which fraction among $\frac{3}{11}, \frac{4}{7}$ and $\frac{5}{8}$ is the smallest?

A $\frac{3}{11}$

B $\frac{4}{7}$

C $\frac{5}{8}$

D All are equal

Answer: A

Explanation:

Fractions $= \frac{3}{11}, \frac{4}{7}$ and $\frac{5}{8}$

L.C.M. of denominators (11,7,8) = 616

Now, taking L.C.M. of all fractions, we get :

$\equiv \frac{168}{616}, \frac{352}{616}, \frac{385}{616}$

=> Smallest fraction $= \frac{168}{616} \equiv \frac{3}{11}$

=> Ans - (A)

Question 57

Three taps A, B and C can fill a tank in 27, 36 and 54 minutes respectively. If all the three taps are opened, then how much time (in minutes) it will take to completely fill the tank?

A 16

B 12

C 10

D 15

Answer: B

Explanation:

Let total capacity of tank is L.C.M. (27,36,54) = 108 units

A alone can fill in 27 minutes, => A's efficiency $= \frac{108}{27} = 4$ units/min

Similarly B's efficiency $= \frac{108}{36} = 3$ units/min

and C's efficiency $= \frac{108}{54} = 2$ units/min

Now, (A+B+C)'s 1 minute's work $= 4 + 3 + 2 = 9$ units/min

$\therefore$ Time required by A,B and C together to fill the tank = $\frac{108}{9} = 12$ minutes

=> Ans - (B)

Question 58

Two pipes X and Y can fill a cistern in 6 hours and 10 hours respectively. Pipe Z can empty the tank in 4 hours. If all the three pipes are open then in how many hours the cistern will be full?

A   30

B   45

C   50

D   60

   Answer: D

Explanation:

Let total capacity of cistern is L.C.M. (6,10,4) = 60 units

X alone can fill in 6 hours, => X's efficiency = $\frac{60}{6} = 10$ units/hr

Similarly Y's efficiency = $\frac{60}{10} = 6$ units/hr

and Z's efficiency = $\frac{60}{-4} = -15$ units/hr

Now, (X+Y+Z)'s 1 hour's work = $10 + 6 - 15 = 1$ unit/hr

$\therefore$ Time required by X,Y and Z together to fill the cistern = $\frac{60}{1} = 60$ hours

=> Ans - (D)

Question 59

The side of an equilateral triangle is equal to the diagonal of the square. If the side of the square is 10 cm, then what is the area of the equilateral triangle?

A $50\sqrt{2}$

B $50\sqrt{3}$

C $\frac{100}{\sqrt{2}}$

D $\frac{100}{\sqrt{3}}$

   Answer: B

Explanation:

Side of square = 10 cm

=> Diagonal of square = $\sqrt{(10)^2 + (10)^2}$

= $\sqrt{200} = 10\sqrt{2}$ cm

Thus, side of equilateral triangle = $10\sqrt{2}$ cm

$\therefore$ Area of equilateral triangle = $\frac{\sqrt{3}}{4}(a)^2$

= $\frac{\sqrt{3}}{4} \times (10\sqrt{2})^2$

$$= \frac{\sqrt{3}}{4} \times 200 = 50\sqrt{3}\ cm^2$$

=> Ans - (B)

Question 60

Marked price of an article is Rs 7600 and its selling price is Rs 5472. What is discount percentage?

A   34

B   28

C   31

D   30

  Answer: B

Explanation:
Marked price = Rs. 7600

Selling price = Rs. 5472

=> Discount % = $\frac{(7600-5472)}{7600} \times 100$

$= \frac{2128}{76} = 28\%$

=> Ans - (B)

Question 61

Selling price of an article is Rs 4290. If 34% discount is given, then what is the marked price (in Rs)?

A   6800

B   7200

C   6300

D   6500

  Answer: D

Explanation:
Selling price = Rs. 4290

Discount % = 34%

=> Marked price = $\frac{4290}{(100-34)} \times 100$

$= \frac{4290}{66} \times 100$

$= 65 \times 100 = Rs.\ 6500$

=> Ans - (D)

Question 62

Total runs scored by three batsmen x, y and z are 1584. Ratio of runs scored by x and y is 4 : 3 and y and z is 5 : 3. How many runs are scored by x?

A   742

B   614

C 516

D 720

Answer: D

Explanation:

Total runs scored = 1584

Ratio of runs scored by = $\frac{x}{y} = \frac{4}{3}$ ------------(i)

and $\frac{y}{z} = \frac{5}{3}$ ----------------(ii)

Multiplying equation (i) by '5' and equation (ii) by '3' to equate value of y, we get :

=> $\frac{x}{y} = \frac{20}{15}$ and $\frac{y}{z} = \frac{15}{9}$

=> $x : y : z = 20 : 15 : 9$

Let runs scored by x, y and z respectively be = $20k, 15k, 9k$

=> Total runs = $20k + 15k + 9k = 44k = 1584$

=> $k = \frac{1584}{44} = 36$

$\therefore$ Runs scored by $x = 20 \times 36 = 720$

=> Ans - (D)

Question 63

Monthly income of Rajesh and Mahesh is in ratio of 9 : 13 respectively. The difference in their income is Rs 20000. What will be the monthly income of Mahesh?

A 45000

B 65000

C 78000

D 54000

Answer: B

Explanation:

Let monthly of income of Rajesh = Rs. $9x$ and the monthly income of Mahesh = Rs. $13x$

Difference in income = $13x - 9x = 4x = 20,000$

=> $x = \frac{20,000}{4} = 5,000$

$\therefore$ Monthly income of Mahesh = $13 \times 5,000 = Rs.\ 65,000$

=> Ans - (B)

Question 64

Average weight of a group of 9 students is 43 kg. When a new student joins the group, the average weight of the group becomes 45 kg. What is the weight (in kg) of the new student?

A 65

B 59

C 63

D 61

Answer: C

Explanation:

Average weight of a group of 9 students = 43 kg

=> Total weight of the group = $(43 \times 9) = 387$ kg

Let weight of the new student = x kg

New average = $\frac{387+x}{10} = 45$

=> $387 + x = 45 \times 10 = 450$

=> $x = 450 - 387 = 63$ kg

=> Ans - (C)

Question 65

If 0.8 x cost price = 0.6 x selling price, the what is the profit percentage?

A 33.33

B 25

C 20

D 10

Answer: A

Explanation:

Expression : 0.8 x cost price = 0.6 x selling price

=> $\frac{C.P.}{S.P.} = \frac{0.6}{0.8} = \frac{3}{4}$

∴ Profit % = $\frac{(S.P.-C.P.)}{C.P.} \times 100$

= $\frac{(4-3)}{3} \times 100$

= $\frac{100}{3} = 33.33\%$

=> Ans - (A)

Question 66

A dealer claims to sell his goods at cost price but uses a weight of 80 gm for 100 gm. What is the profit percentage for the dealer?

A 12.5

B 10

C 20

D 25

Answer: D

Explanation:

Let cost price of goods = Rs. 1/gm => Rs. 100/ 100gm

=> Selling price = Rs. 100/ 80gm => Rs. 1.25/gm

∴ Profit % = $\frac{(1.25-1)}{1} \times 100$

$= 0.25 \times 100 = 25\%$

=> Ans - (D)

Question 67

If the price of sugar is increased by 10%, then by how much percent consumption should be reduced so that the expenditure remains the same?

A 9.09

B 10

C 12.5

D 20

Answer: A

Explanation:
Let initial price of sugar = Rs. 10 and expenditure = Rs. 10

=> Consumption = $C = 10 \times 10 = 100$

Now, New price of sugar = $10 + (\frac{10}{100} \times 10)$

$= 10 + 1 = Rs.\ 11$

New Expenditure = Rs. 10

=> New consumption = $C' = 11 \times 10 = 110$

∴ Required % = $\frac{C'-C}{C'} \times 100$

$= \frac{110-100}{110} \times 100$

$= \frac{100}{11} = 9.09\%$

=> Ans - (A)

Question 68

If the radius of a circle is decreased by 30%, then what is the decrease in the area of the circle?

A 51

B 60

C 69

D 30

Answer: A

Explanation:
Let radius of circle = $r = 10$ cm

=> Area of circle = $A = \pi r^2 = \pi(10)^2 = 100\pi\ cm^2$

If the radius of a circle is decreased by 30%, new radius = $r' = 10 - (\frac{30}{100} \times 10)$

$= 10 - 3 = 7$ cm

=> New area = $A' = \pi(7)^2 = 49\pi\ cm^2$

∴ Decrease in area of circle = $\frac{(100\pi - 49\pi)}{100\pi} \times 100$

$= 51\%$

=> Ans - (A)

Question 69

Kamal covers $\frac{4}{5}$ of the total distance by train and the remaining 15 km by bus. What is his total journey (in km)?

A 50

B 75

C 85

D 35

Answer: B

Explanation:
Let total distance of the journey = $5x$ km

Distance covered by train = $\frac{4}{5} \times 5x = 4x$ km

=> Remaining distance = $5x - 4x = x = 15$ km

∴ Total journey = $5 \times 15 = 75$ km

=> Ans - (B)

Question 70

A man can row 12 km/hr in still water. If the speed of the current is 3 km/hr, he takes 4 hours more in upstream than in the downstream. What is the distance (in km)?

A 30

B 45

C 60

D 90

Answer: D

Explanation:
Speed of man in still water = 12 km/hr and speed of current = 3 km/hr

Let distance covered = d km

According to ques,

=> $\frac{d}{(12-3)} - \frac{d}{(12+3)} = 4$

=> $\frac{d}{9} - \frac{d}{15} = 4$

=> $\frac{5d-3d}{45} = 4$

=> $\frac{2d}{45} = 4$

=> $d = \frac{45 \times 4}{2} = 90$ km

=> Ans - (D)

Question 71

A sum amounts to Rs.1210 in 2 years when invested at compound interest. If principal is Rs.1000, then what is the rate of interest (in %)?

A 10

B 20

C 15

D 12

   Answer: A

Explanation:
Principal = Rs. 1000 and time period = 2 years

Let rate of interest = $r\%$

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

=> $1000(1 + \frac{r}{100})^2 = 1210$

=> $(1 + \frac{r}{100})^2 = \frac{1210}{1000}$

=> $1 + \frac{r}{100} = \sqrt{1.21}$

=> $\frac{r}{100} = 1.1 - 1 = 0.1$

=> $r = 0.1 \times 100 = 10\%$

=> Ans - (A)

Instructions

The table given below cost of journey (in Rs) from Delhi to 4 different towns on 4 different trains.

Towns	Train 1	Train 2	Train 3	Train 4
A	4300	3100	4000	6000
B	4500	3300	3900	6300
C	4800	2600	4200	5600
D	4700	3200	3600	5700

Question 72

What is average cost (in Rs) of journey to Town A?

A 4400

B 4350

C 4150

D 4200

   Answer: B

Explanation:
Total cost (in Rs) of journey to Town A

= 4300 + 3100 + 4000 + 6000 = 17400

=> Average cost = $\frac{17400}{4} = Rs.\ 4350$

=> Ans - (B)

Question 73

Which of the following has the least cost?

A   Train 2 to A

B   Train 1 to A

C   Train 2 to C

D   Train 1 to B

  Answer: C

Explanation:
(A) : Train 2 to A = Rs. 3100

(B) : Train 1 to A = Rs. 4300

(C) : Train 2 to C = Rs. 2600   **[Least]**

(D) : Train 1 to B = Rs. 4500

=> Ans - (C)

Question 74

What is total least cost (in Rs) of Journey from Delhi to town A and Delhi to town D?

A   6300

B   5700

C   6400

D   6600

  Answer: A

Explanation:
Least cost (in Rs) of Journey from Delhi to town A = By Train 2 = Rs. 3100

Least cost (in Rs) of Journey from Delhi to town D = By Train 2 = Rs. 3200

=> Total least cost = $3100 + 3200 = Rs.\,6300$

=> Ans - (A)

Question 75

What will be the maximum cost (in Rs) of travelling from Delhi to the four towns?

A   23600

B   22700

C   24500

D   21900

  Answer: A

Explanation:
Maximum cost (in Rs) of Journey from Delhi to town A = By Train 4 = Rs. 6000

Similarly, for town B = Rs. 6300

Town C = Rs. 5600 and Town D = Rs. 5700

=> Maximum cost = 6000 + 6300 + 5600 + 5700 = Rs. 23,600

=> Ans - (A)

General Awareness

Instructions

For the following questions answer them individually

Question 76

A drill machine in the hands of a plumber is what type of a good?

A Consumer

B Costly

C Cheap

D Intermediary

   Answer: A

Question 77

According to Indian constitution, government has how many organs?

A One

B Two

C Three

D Four

   Answer: C

Question 78

How many fundamental rights are there in Indian Constitution?

A 10

B 8

C 6

D 4

   Answer: C

Question 79

Under whose presidentship fight for Purna Swaraj resolution was passed?

A   Mahatma Gandhi

B   Md. Ali Jinnah

C   Subhash Chandra Bose

D   Jawahar Lal Nehru

  Answer: D

Question 80

Whose descendants were the Mughals from their father's side?

A   Timur

B   Genghis Khan

C   Sher Shah Suri

D   None of these

  Answer: A

Question 81

Our solar system consists of how many planets?

A   8

B   10

C   9

D   7

  Answer: A

Question 82

Which is the highest mountain peak on Earth?

A   Mauna Kea

B   Mount Everest

C   Kangchenjunga

D   Makalu

  Answer: B

Question 83

If the stomach did not produce any hydrochloric acid, which enzyme will not function?

A Ptyalin

B Rennin

C Pepsin

D Lipase

  Answer: C

Question 84

Smaller roots coming out of main root is called as _____.

A Tap root

B Lateral root

C Fibrous root

D Ring root

  Answer: B

Question 85

Both erythrocytes and leucocytes are formed in the _____.

A Bone marrow

B Thymus

C Arterial walls

D Lymph nodes

  Answer: A

Question 86

Electricians use rubber gloves while working because

A rubber is an insulator

B rubber is a good conductor

C wearing rubber gloves is mandatory

D rubber makes work easy

  Answer: A

Question 87

If a pendulum is allowed to oscillate in vacuum, its time period will _____.

A decreases

B Increases

C remains same

D first increases and then decreases

   Answer: A

Question 88

Which format of email address is correct?

A xyz@website@co.in

B xyz.website@co.in

C xyz@website.co.in

D xyz.website.co.in

   Answer: C

Question 89

The atomic number of an element is determined by _____.

A adding the number of electrons & protons in one atom

B the number of neutrons in one atom

C the valency of the element

D the number of protons in one atom

   Answer: D

Question 90

The number of electrons in the outer shell of the most stable or inert atoms is _____.

A 1

B 5

C 3

D 8

   Answer: D

Question 91

What are the dissolved and suspended impurities in sewage called?

A Impurities

B Waste

C Solids

D Contaminants

Answer: D

Question 92

Which among the following is not a category of loan under Pradhan Mantri Mudra Yojana?

A Shishu

B Vayask

C Tarun

D Kishore

  Answer: B

Question 93

Who among the following discovered laws of planetary motion?

A J. Kepler

B Albert Einstein

C N. Copernicus

D Otto Blathy

  Answer: A

Question 94

Which country won the 2017 ICC Champions Trophy?

A India

B England

C Pakistan

D Australia

  Answer: C

Question 95

Phulkari, Kantha and Chikankari are famous forms of _____.

A Dance

B Painting

C Music

D Embroidery

  Answer: D

Question 96

Who is the winner of UNESCO Peace Prize 2017?

A   Bollywood Actor Aamir Khan

B   Italy's Mayor Glusi Nicolini

C   Writer David Grossman

D   UK Minister Priti Patel

   Answer: B

Question 97

Who is the author of the book named "Gods of Antarctica"?

A   Vishal Sikka

B   Tarun Khanna

C   Yashwardhan Shukla

D   Amitav Ghosh

   Answer: C

Question 98

The Mekong Ganga Cooperation is an intiative by India and how many other countries?

A   3

B   5

C   7

D   11

   Answer: B

Question 99

Which among the following Indian state does not share boundary with Pakistan?

A   Punjab

B   Rajasthan

C   Gujrat

D   Maharashtra

   Answer: D

Question 100

What is the full form of GDP?

A   Gross Domestic Product

B   Goods Domestic Product

C   Goods Dynamic Product

D   None of these

Answer: A

SSC MTS 21 September 2017 Shift 2

Reasoning

Instructions

For the following questions answer them individually

Question 1

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

8	2	4	14
7	6	5	18
4	2	5	?

A   9

B   10

C   11

D   12

   Answer: C

Explanation:

In each row, the number at the end is the sum of first three numbers.

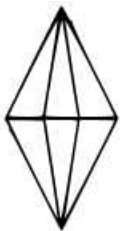Eg :- $8 + 2 + 4 = 14$

and $7 + 6 + 5 = 18$

Similarly, $4 + 2 + 5 = 11$

=> Ans - (C)

Question 2

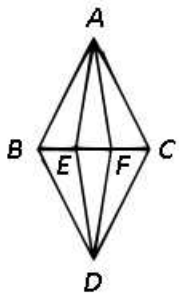**How many triangles are there in the given figure**

A   8

B   10

C   12

D   14

   Answer: C

Explanation:

Small triangles = ABE, AEF, AFC, BED, DEF, CDF

Triangles (having 2 triangles) = ABF, AEC, BFD, CDE

Triangles (having 3 triangles) = ABC, BCD

Thus, total triangles = **12**

=> Ans - (C)

Question 3

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 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 row and next by its column, for example, 'C' can be represented by 11, 67, etc., and 'V can be represented by 30, 66, etc. Similarly, you have to identify the set for the word "TRADE".

	0	1	2	3	4
0	A	K	S	Y	D
1	F	C	M	U	B
2	N	H	E	O	W
3	T	P	J	G	Q
4	X	V	R	L	I

	5	6	7	8	9
5	B	L	V	E	O
6	J	T	C	M	W
7	H	R	A	K	U
8	F	P	Z	I	S
9	D	N	X	G	Q

A   30, 42, 01, 96, 58

B   30, 76, 78, 04, 22

C   66, 42, 00, 95, 58

D   66, 77, 00, 95, 31

   Answer: C

Explanation:
(A) : 30, 42, 01, 96, 58 = TRKNE
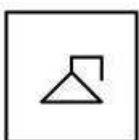
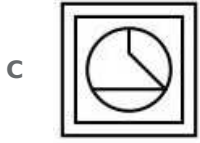(B) : 30, 76, 78, 04, 22 = TRKDE

(C) : 66, 42, 00, 95, 58 = **TRADE**

(D) : 66, 77, 00, 95, 31 = TAADP
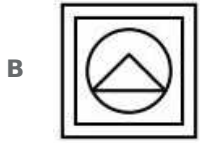
=> Ans - (C)

Question 4

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

A

B

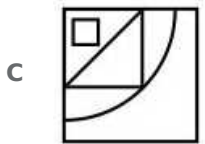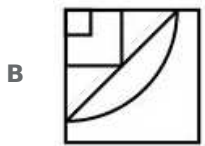**C**

D

Answer: A

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

=> Ans - (A)

Question 5

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

A

B

C

D
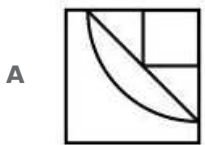
Answer: A

Explanation:
The question figure will be completed by :

=> Ans - (A)

Question 6

If a mirror is placed on the line AB. then which of the answer figures is the right image of the given figure?
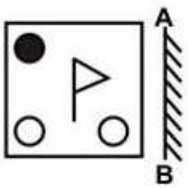
A
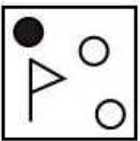
B
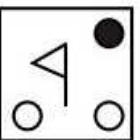
C

D
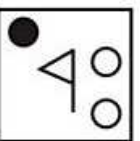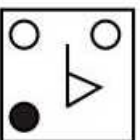
Answer: B

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

So the flag in the middle (pointing rightwards) will be reversed and will now point to left side, thus the first and last options will be eliminated.

Also, in the question figure, the black circle at top left will now appear at top right side, hence second option is the right image.

=> Ans - (B)

Question 7

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
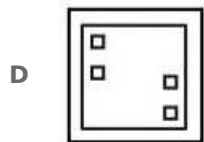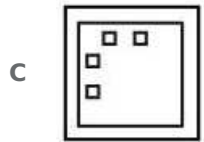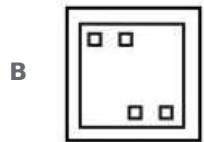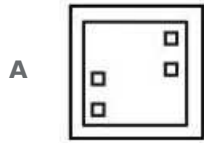
Answer: C

Question 8

If '+' means '÷', '÷' means '-', '-' means '×' and '×' means '+', then

$24 + 12 \div 6 - 4 = ?$

A - 22

B 22

C - 29

D 32

Answer: A

Explanation:

Expression : $24 + 12 \div 6 - 4 = ?$

$\equiv 24 \div 12 - 6 \times 4$

$= \frac{24}{12} - 24$

$= 2 - 24 = -22$

=> Ans - (A)

Question 9

If 3 + 6 + 1 = 163 and 5 + 4 + 9 = 945, then 4 + 2 + 3 = ?

A   432

B   243

C   234

D   324

   Answer: D

Explanation:
Given : 3 + 6 + 1 = 163 and 5 + 4 + 9 = 945

The pattern followed is that the numbers are written in reverse order, i.e. the number at first position comes at the end and vice-versa while the middle number stays as it is.

Thus, 4 + 2 + 3 = **324**

=> Ans - (D)

Question 10

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

1. Crying
2. Crypt
3. Cooled
4. Cooking
5. Captain

A   53421

B   54312

C   54132

D   53412

   Answer: B

Explanation:
As per the order of dictionary :

= Captain -> Cooking -> Cooled -> Crying -> Crypt

≡ 54312

=> Ans - (B)

Question 11

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

4, 8, 16, ?, 64, 128

A   30

B   28

C   24

D 32

  Answer: D

Explanation:

Each number is multiplied by 2

$4 \times 2 = 8$

$8 \times 2 = 16$

$16 \times 2 = \mathbf{32}$

$32 \times 2 = 64$

$64 \times 2 = 128$

=> Ans - (D)

Question 12

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

TVU, WYX, ZBA, ?

A DEC

B DCE

C CED

D CDE

  Answer: C

Explanation:

Expression : TVU, WYX, ZBA, ?

The pattern followed in each letter of the terms is :

1st letter : T (+3 letters) = W (+3 letters) = Z (+3 letters) = C

2nd letter : V (+3 letters) = Y (+3 letters) = B (+3 letters) = E

3rd letter : U (+3 letters) = X (+3 letters) = A (+3 letters) = D

Thus, missing term = **CED**

=> Ans - (C)

Question 13

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

A Tall : Short

B Above : Top

C Laugh : Cry

D Fat : Thin

  Answer: B

Explanation:

Apart from (Above : Top), all the other given pairs are opposite of each other, hence it is the odd one out.

=> Ans - (B)

Question 14

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

A   26

B   64

C   36

D   144

   Answer: A

Explanation:
$(8)^2 = 64$, $(6)^2 = 36$ and $(12)^2 = 144$

26 is the only number which is not a perfect square, hence it is the odd one out.

=> Ans - (A)

Question 15

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

A   AC

B   PR

C   TU

D   JL

   Answer: C

Explanation:
Apart from **TU** (which are consecutive letters in the English alphabetical series), other pairs have a gap of 1 letter between them, hence TU is the odd one out.

=> Ans - (C)

Question 16

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

Four wheelers, Jeep, Car

A

B

C

D
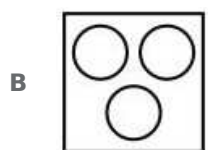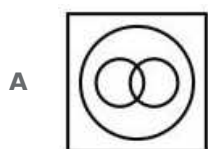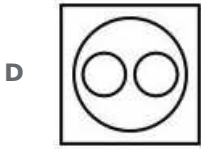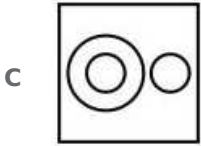
Answer: D

Explanation:

Both jeep and car are different from each other, but comes under the category of four wheelers, hence the venn diagram that best describes above relation is :

=> Ans - (D)

Question 17

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

Bird : Fly : : Fish : ?

A Swim

B Crawl

C Running

D Walking

 Answer: A

Explanation:
Expression = Bird : Fly : : Fish : ?

The primary ability of a bird is to fly similarly a fish **swims.**

=> Ans - (A)

Question 18

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

4 : 16 : : 9 : ?

A 64

B 81

C 72

D 90

 Answer: B

Explanation:

Expression = 4 : 16 : : 9 : ?

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

Eg :- $(4)^2 = 16$

Similarly, $(9)^2 = 81$

=> Ans - (B)

Question 19

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

ACE : BEH : : BUS : ?

A CWV

B CWU

C CXV

D CWX

   Answer: A

Explanation:

Expression = ACE : BEH : : BUS : ?

The pattern followed is :

A	C	E
(+1)	(+2)	(+3)
B	E	H

Similarly, BUS : **CWV**

B	U	S
(+1)	(+2)	(+3)
C	W	V

=> Ans - (A)

Question 20

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

HOWLINGS

A WINS

B HONS

C SLIP

D SING

   Answer: C

Explanation:

The word HOWLINGS does not contain any 'P', thus the term **Slip** cannot be formed.

=> Ans - (C)

Question 21

A walks 5 km toward west. He turns right and walks 10 km. He again turns right and walks 15 km. how far (in km) is he from his starting point?

A $10\sqrt{2}$

B $10\sqrt{3}$

C   20

D   10

  Answer: A

Explanation:

Let A starts from point A and walks 5 km toward west to reach point B. He turns right and walks 10 km to reach C. He again turns right and walks 15 km eastwards to finally stop at point D.
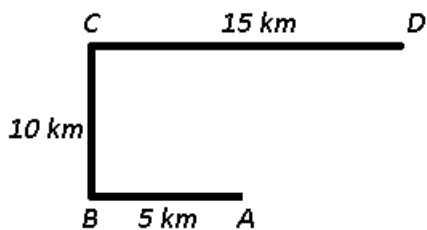
Thus, Distance AD $= \sqrt{(10)^2 + (15 - 5)^2}$

$= \sqrt{100 + 100} = \sqrt{200} = 10\sqrt{2}$ km

=> Ans - (A)

Question 22

A, B, C, D and E are standing in line facing north. C stands in the middle. B and E cannot stand with C. A is not standing to the right of C. Who is standing second from left end?

A   D

B   A

C   B

D   Cannot be determined

  Answer: B

Explanation:

C stands in the middle. B and E cannot stand with C

=> B and E stands at either ends of the row

B/E		C		B/E

A is not standing to the right of C, => A is standing to the immediate left of C.

Thus, the final arrangement is :

B/E	A	C	D	B/E

∴ **A** is standing second from left end.

=> Ans - (B)

Question 23

In 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. All chairs are cups.
II. Some chairs are tables.

Conclusions:

I. Some tables are chairs.
II. Some tables are cups.

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 :
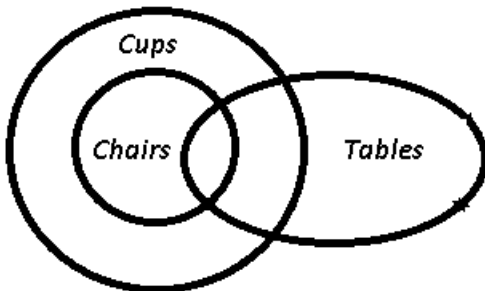
Conclusions:

I. Some tables are chairs = true
II. Some tables are cups = true

Thus, both conclusion follow.

=> Ans - (C)

Question 24

In a certain code language, "STAMP" is written as "UVCOR". How is "PAPER" written in that code language?

A   RCRGT

B   RCRGU

C   RDRGT

D   RBRGT

   Answer: A

Explanation:

"STAMP" is written as "UVCOR"

The pattern followed is :

S	T	A	M	P
(+2)	(+2)	(+2)	(+2)	(+2)
U	V	C	O	R

Similarly, for PAPER : **RCRGT**

P	A	P	E	R
(+2)	(+2)	(+2)	(+2)	(+2)
R	C	R	G	T

=> Ans - (A)

Question 25

In a certain code language, "PIN" is written as "78" and "SIN" is written as "84". How is "BIN" written in that code language?

A   25

B   50

C   75

D   30

   Answer: B

Explanation:
The pattern followed is that when the alphabets are sequentially numbered, i.e. A=1, B=2, C=3 and so on.

Sum of the numbers is multiplied by 2.

PIN = $2 \times (16 + 9 + 14) = 2 \times 39 = 78$

and SIN = $2 \times (19 + 9 + 14) = 2 \times 42 = 84$

Similarly, BIN = $2 \times (2 + 9 + 14) = 2 \times 25 = 50$

=> Ans - (B)

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 26

Just before (1)/ the sun rises, (2)/ you will see the dawn. (3)/ No Error (4)/

A   Just before

B   the sun rises,

C   you will see the dawn.

D   No Error

   Answer: B

Question 27

Our recommendations are (1)/ based on solid research (2)/ and exacted analysis. (3)/ No Error (4)/

A   Our recommendations are

B   based on solid research

C   and exacted analysis.

D   No Error

   Answer: C

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 28

Suraj is negligent _____ attending his classes.

A   to

B   towards

C   in

D   about

   Answer: C

Question 29

Shweta is _____ mother of two daughters.

A   the

B   a

C   an

D   to

   Answer: B

Instructions

In the following question, out of the given four alternatives, select the one which best expresses the meaning of the given word.

Question 30

Shrink

A   Develop

B Diminish

C Expand

D Stretch

Answer: B

Question 31

Versatile

A Limited

B Inflexible

C Unadjustable

D Flexible

Answer: D

Question 32

Unruly

A Lawless

B Compliant

C Obedient

D Cooperative

Answer: A

Instructions

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

Question 33

Assemble

A Collect

B Scatter

C Group

D Reunite

Answer: B

Question 34

Flimsy

A Fragile

B   Sturdy

C   Inadequate

D   Shallow

   Answer: B

Question 35

Tactful

A   Delicate

B   Careless

C   Cautious

D   gentle

   Answer: B

Instructions

In the following question, out of the four given alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

Question 36

At a stone's throw

A   Very near

B   Cause of quarrel

C   Increase anger

D   Easy task

   Answer: A

Question 37

An uphill task

A   Unfair blow

B   Close fight

C   Task of no use

D   Difficult task

   Answer: D

Instructions

For the following questions answer them individually

Question 38

Improve the bracketed part of the sentence.

He (have ignored) my mail.

A   has ignored

B   ignore

C   have been

D   No improvement

   Answer: A

Question 39

Improve the bracketed part of the sentence.

When the wind blows, the cradle (was rock).

A   was rocked

B   will rack

C   will rock

D   No improvement

   Answer: C

Instructions

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

Question 40

One who can neither read nor write.

A   Illegible

B   Inexcusable

C   Illiterate

D   Illegtimate

   Answer: C

Question 41

Warning of an impending danger

A   Prediction

B   Superstition

C   Revelation

D

Answer: D

Instructions

For the following questions answer them individually

Question 42

In the following question, a word has been written in four different ways out of which only one is correctly spelt. Select the correctly spelt word.

A   Narrater

B   Narratur

C   Narrator

D   Nurrator

   Answer: C

Question 43

In the following question, a word has been written in four different ways out of which only one is correctly spelt. Select the correctly spelt word.

A   Leciense

B   License

C   Licinse

D   Licenca

   Answer: B

Question 44

Rearrange the parts of the sentence in correct order.

I was

P: night by a
Q: awakened in the
R: noise in the house

A   QPR

B   PRQ

C   QRP

D   RQP

   Answer: A

Question 45

Rearrange the parts of the sentence in correct order.

Science means

P: how things
Q: finding out
R: actually happen

A   QPR

B   PRQ

C   PQR

D   RQP

  Answer: A

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.

Summer vacation is the __(1)____ period during the summer season. All the schools and __(2)____ become closed during this __(3)____ because of the high environmental temperature in summer months (especially half May and full June). It becomes the ___(4)___ period of the year during summer vacation. Most of the students generally go to their native village, hill stations, or other cool places to enjoy with cousins, family __(5)____ or village friends.

Question 46

Summer vacation is the _____

A   busy day

B   holiday

C   boring

D   idle

  Answer: B

Question 47

All the schools and _____ become

A   colleges

B   offices

C   complexes

D   shops

  Answer: A

Question 48

_____ because of the high

A day

B moment

C period

D timings

Answer: C

Question 49

It becomes the _____ period of the year during

A hottest

B horrible

C pleasant

D breezy

Answer: A

Question 50

cousins, family _____ or village friends.

A people

B women

C men

D members

Answer: D

Quant

Instructions
For the following questions answer them individually

Question 51

What is the value of 12 - 22 + 32 - 42 + 62 - 52 + 82 - 72 ?

A - 25

B - 4

C 4

D 0

Answer: D

Explanation:
Expression : 12 - 22 + 32 - 42 + 62 - 52 + 82 - 72

$= (12 - 22) + (32 - 42) + (62 - 52) + (82 - 72)$

$= (-10) + (-10) + (10) + (10)$

$= 20 - 20 = 0$

=> Ans - (D)

Question 52

If $A = 20 \times 50$ **and** $B = 20 \times 3$ **then what is the value of** $A \times B$?

A   20000

B   60000

C   40000

D   240000

   Answer: B

Question 53

What is the smallest three digit perfect square?

A   121

B   100

C   144

D   128

   Answer: B

Explanation:

Highest 1 digit number = 9, its square = $(9)^2 = 81$, which is 2 digit.

Next number = 10, its square = $(10)^2 = 100$, which is a 3 digit number.

Thus, 100 is the smallest three digit perfect square.

=> Ans - (B)

Question 54

What is the value of value $\sqrt{0.0016} + \sqrt{0.16} + \sqrt{16}$ **?**

A   4.44

B   4.06

C   4.04

D   4.16

   Answer: A

Explanation:

Expression : $\sqrt{0.0016} + \sqrt{0.16} + \sqrt{16}$

$= 0.04 + 0.4 + 4$

= 4.44

=> Ans - (A)

Question 55

What is the Least Common Multiple of 24, 60 and 48?

A   120

B   240

C   180

D   480

   Answer: B

Explanation:

Numbers : 24, 60 and 48

Factors of 24 = $2^3 \times 3$

Factors of 60 = $2^2 \times 3 \times 5$

Factors of 48 = $2^4 \times 3$

Thus, L.C.M. = product of numbers having highest powers.

∴ Least Common Multiple of 24, 60 and 48 = $2^4 \times 3 \times 5 = 240$

=> Ans - (B)

Question 56

What is the value of $[(0.7)^3 + (0.3)^3] \div [(0.7)^2 - (0.7 \times 0.3) + (0.3)^2]$? **?**

A   0.3

B   0.7

C   1

D   0.4

   Answer: C

Explanation:

Expression : $[(0.7)^3 + (0.3)^3] \div [(0.7)^2 - (0.7 \times 0.3) + (0.3)^2]$?

$= \frac{(0.7)^3 + (0.3)^3}{(0.7)^2 - 0.7 \times 0.3 + (0.3)^2}$

Let $0.7 = x$ and $0.3 = y$

$\equiv \frac{(x)^3 + (y)^3}{(x)^2 - xy + (y)^2}$

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

$= \frac{(x+y)(x^2 + y^2 - xy)}{(x^2 + y^2 - xy)} = (x + y)$

$= 0.7 + 0.3 = 1$

=> Ans - (C)

Question 57

P and Q together complete a work in 8 days. Q and R together complete a work in 16 days and R and P together complete the same work in 8 days. In how many days P, Q and R together can complete the wok?

A   6.4

B   7.2

C   5.8

D   7.1

  Answer: A

Explanation:
Let total work is L.C.M. (8,16,8) = 16 units

Let efficiency of P, Q and R respectively be p, q, r units/day

P and Q together can complete the work in 8 days, => (P+Q)'s efficiency = $p + q = \frac{16}{8} = 2$ units/day ------------(i)

Similarly (Q+R)'s efficiency = $q + r = \frac{16}{16} = 1$ unit/day ------------(ii)

and (R+P)'s efficiency = $r + p = \frac{16}{8} = 2$ units/day ----------------(iii)

Adding equations (i), (ii) and (iii), we get : $2(p + q + r) = 2 + 1 + 2$

=> $(p + q + r) = \frac{5}{2} = 2.5$ -----------(iv)

∴ Days required by P, Q and R together to complete the work = $\frac{16}{2.5} = 6.4$ days

=> Ans - (A)

Question 58

U and V can complete a piece of work in 6 and 48 days respectively. They contracted to complete the work for Rs 45,000. What will be the share (in Rs) of U?

A   35000

B   37000

C   36000

D   40000

  Answer: D

Explanation:
Let total work is L.C.M. (6,48) = 48 units

U alone can complete a work in 6 days, => U's efficiency = $\frac{48}{6} = 8$ units/day

Similarly V's efficiency = $\frac{48}{48} = 1$ unit/day

=> Ratio of efficiencies of $U : V = 8 : 1$

Total amount = Rs. 45,000

=> U's share = $\frac{8}{(8+1)} \times 45,000$

= $8 \times 5,000 = Rs.\ 40,000$

=> Ans - (D)

Question 59

The height of two cylinders are equal and their radius are in the ratio of 1 : 3 respectively. What is the respective ratio of the volume of the two cylinders?

A $1 : 3$

B $1 : 9$

C $1 : 27$

D $1 : \sqrt{3}$

  Answer: B

Explanation:

Let heights of both cylinders $= h$ cm

Let radius of first cylinder $= r$ cm, => Radius of second cylinder $= 3r$ cm

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

$\therefore$ Required ratio $= \dfrac{\pi (r)^2 h}{\pi (3r)^2 h}$

$= \dfrac{1}{9}$

Thus, the respective ratio of the volume of the two cylinders $= 1 : 9$

=> Ans - (B)

Question 60

An article having marked price of Rs 4300 is sold at a discount of 17%. What is the selling price (in Rs) of the article?

A   3721

B   3459

C   3569

D   3317

  Answer: C

Explanation:

Marked price = Rs. 4300

Discount % = 17%

=> Selling price $= \dfrac{(100 - 17)}{100} \times 4300$

$= 83 \times 43 = Rs.\ 3569$

=> Ans - (C)

Question 61

An article has marked price of Rs 6800. If two successive discounts of 12% and 20% are given, then what will be the selling price (in Rs)?

A   4787.2

B   4624

C   4460.8

D   4524

   Answer: A

Explanation:

Marked price = Rs. 6800

After 1st discount of 12%, price = $6800 - (\frac{12}{100} \times 6800)$

$= 6800 - 816 = 5984$

After 2nd discount of 20% (on changed price), selling price = $5984 - (\frac{20}{100} \times 5984)$

$= 5984 - 1196.8 = Rs.\ 4787.2$

=> Ans - (A)

Question 62

Shopkeeper sold big, medium and small sized chairs for Rs 650, Rs 500 and Rs 400 respectively. The total number of chairs sold were in the ratio 8 : 13 : 4. What is the average cost (in Rs) of a chair?

A   506

B   546

C   478

D   532

   Answer: D

Explanation:

Ratio of big, medium and small sized chairs = 8:13:4

Price of big, medium and small sized chairs (in Rs.) = 650, 500, 400

=> Average cost of a chair = $\frac{(8\times650)+(13\times500)+(4\times400)}{(8+13+4)}$

$= \frac{(5200+6500+1600)}{25}$

$= \frac{13300}{25} = Rs.\ 532$

=> Ans - (D)

Question 63

If $u : v : w = 1 : 5 : 13$, then what will be the value of $\frac{(3u+2v+4w)}{(2w-u-4v)}$?

A   25

B   13

C   12

D   17

   Answer: B

Explanation:

Given $= u : v : w = 1 : 5 : 13$

Let $u = 1$, $v = 5$ and $w = 13$

To find : $\frac{(3u+2v+4w)}{(2w-u-4v)}$

$= \frac{3(1)+2(5)+4(13)}{2(13)-(1)-4(5)}$

$= \frac{3+10+52}{26-1-20}$

$= \frac{65}{5} = 13$

=> Ans - (B)

Question 64

What is the average of first 9 even numbers?

A 9

B 12

C 11

D 10

Answer: D

Explanation:

Sum of first n even numbers $= n(n+1)$

=> Average of first n even numbers $= \frac{n(n+1)}{n} = (n+1)$

$\therefore$ Average of first 9 even numbers $= (9+1) = 10$

=> Ans - (D)

Question 65

There would be 20% loss if a toy is sold for Rs 11.20. At what price (in Rs) the toy should be sold to earn a profit of 10%?

A 15.2

B 14.8

C 14.4

D 15.4

Answer: D

Explanation:

Selling price = Rs. 11.20

Loss % = 20%

=> Cost price $= \frac{11.20}{(100-20)} \times 100$

$= \frac{112}{8} = Rs. 14$

Now, to earn 10% profit, => Selling price $= 14 + (\frac{10}{100} \times 14)$

$= 14 + 1.4 = Rs.\ 15.4$

=> Ans - (D)

Question 66

If the cost price of an article is 80% of the selling price, then what is the profit percent?

A 20

B 25

C 30

D 28

   Answer: B

Explanation:
Let selling price = Rs. 10

=> Cost price = $\frac{80}{100} \times 10 = Rs.\ 8$

$\therefore$ Profit % = $\frac{(10-8)}{8} \times 100$

$= \frac{200}{8} = 25\%$

=> Ans - (B)

Question 67

What is the value of (42% of 7200) - (12% of 4800)?

A 2138

B 2448

C 3348

D 2918

   Answer: B

Explanation:
Expression : (42% of 7200) - (12% of 4800)

$= \left(\frac{42}{100} \times 7200\right) - \left(\frac{12}{100} \times 4800\right)$

$= (42 \times 72) - (12 \times 48)$

$= (12 \times 12)(21 - 4)$

$= 144 \times 17 = 2448$

=> Ans - (B)

Question 68

What is the value of 40% of $\frac{3}{4}$ of 1200 ?

A 360

B 480

C 120

D 240

   Answer: A

Explanation:

Expression : 40% of $\frac{3}{4}$ of 1200

$= \frac{40}{100} \times \frac{3}{4} \times 1200$

$= 10 \times 3 \times 12 = 360$

=> Ans - (A)

Question 69

A train crosses a platform in 50 seconds travelling with a speed of 72 km/hr. If the length of the train be 250 metres, then what will be the length (in metres) of the platform?

A 600

B 480

C 750

D 950

   Answer: C

Explanation:

Speed of train = 72 km/hr = $\left(72 \times \frac{5}{18}\right)$ m/s = 20 m/s

Let length of platform = x m and length of train = 250 m

Using, time = distance/speed

$=> \frac{250+x}{20} = 50$

$=> 250 + x = 50 \times 20$

$=> x = 1000 - 250 = 750$ m

=> Ans - (C)

Question 70

Speed of a boat is 8 km/hr in still water and the speed of the stream is 2 km/hr. If the boat takes 8 hours to go to a place and come back, then what is the distance (in km) of the place?

A 24

B 30

C 45

D 42

   Answer: B

Explanation:

Speed of boat in still water = 8 km/hr and speed of stream = 2 km/hr

Let distance covered = d km

According to ques,

$$\Rightarrow \frac{d}{(8-2)} + \frac{d}{(8+2)} = 8$$

$$\Rightarrow \frac{d}{6} + \frac{d}{10} = 8$$

$$\Rightarrow \frac{10d+6d}{60} = 8$$

$$\Rightarrow \frac{4d}{15} = 8$$

$$\Rightarrow d = \frac{15 \times 8}{4} = 30 \text{ km}$$

=> Ans - (B)

Question 71

Rs 5000 are invested in a scheme of compound interest. If the rate of interest is 12% per annum, then what is the interest earned (in Rs) in 2 years?

A 1450

B 1272

C 1520

D 3450

Answer: B

Explanation:
Principal sum = Rs. 5000

Rate of interest = 12% and time period = 2 years

$$\Rightarrow \text{Compound interest} = P[(1 + \frac{R}{100})^T - 1]$$

$$= 5000[(1 + \frac{12}{100})^2 - 1]$$

$$= 5000[(\frac{28}{25})^2 - 1]$$

$$= 5000(\frac{784-625}{625})$$

$$= 8 \times 159 = Rs.\ 1272$$

=> Ans - (B)

Instructions

The table given below shows number of students from stream A and B for a college in the years 2011 to 2015.

Year	A	B
2011	520	740
2012	610	790
2013	490	670
2014	540	720
2015	900	990

Question 72

In the year 2014, the number of students of stream A is what percent of the number of students in stream B?

A 75

B 65

C 62

D   56

   Answer: A

Explanation:

Number of students of stream A in 2014 = 540

Number of students of stream B in 2014 = 720

=> Required % = $\frac{540}{720} \times 100$

= $\frac{3}{4} \times 100 = 75\%$

=> Ans - (A)

Question 73

In the year 2015, the number of students in stream B is how much percent more than the number of students in stream A?

A   9

B   10

C   12

D   18

   Answer: B

Explanation:

Number of students of stream A in 2015 = 900

Number of students of stream B in 2015 = 990

=> Required % = $\frac{(990-900)}{900} \times 100$

= $\frac{90}{9} = 10\%$

=> Ans - (B)

Question 74

What is the average number of students in stream A from 2011 to 2015?

A   612

B   670

C   586

D   630

   Answer: A

Explanation:

Total number of students in stream A from 2011 to 2015

= 520 + 610 + 490 + 540 + 900 = 3060

=> Required average = $\frac{3060}{5} = 612$

=> Ans - (A)

Question 75

In how many years, the number of students in stream B is more than the number of students in stream A?

A 5

B 3

C 2

D 1

   Answer: A

Explanation:

Year	A	B
2011	520	740
2012	610	790
2013	490	670
2014	540	720
2015	900	990

In all the five years, the number of students in stream B is more than the number of students in stream A.

=> Ans - (A)

General Awareness

Instructions

For the following questions answer them individually

Question 76

_____ unemployment happens when people are not able to find jobs during some months of the year.

A Seasonal

B Disguised

C Educated

D Uneducated

   Answer: A

Question 77

Fishing comes under which sector of economic activity?

A Quaternary sector

B Secondary sector

C Tertiary sector

D Primary sector

Answer: D

Question 78

The Indian constitution recognizes every person as _____.

A   poor

B   rich

C   unequal

D   equal

   Answer: D

Question 79

In which year Civil Rights movement began?

A   1950

B   1945

C   1955

D   1960

   Answer: C

Question 80

The city of Lothal stood beside a tributary of which river?

A   Narmada

B   Ganga

C   Yamuna

D   Sabarmati

   Answer: D

Question 81

Which viceroy partitioned Bengal?

A   Lord Warren Hasting

B   Lord Mountbatten

C   Lord Curzon

D   Lord Bentick

   Answer: C

Question 82

Which constellation is called Saptarishi?

A   Ursa major

B   Big bear

C   Small bear

D   Orion

   Answer: A

Question 83

What causes change in the seasons on earth?

A   Rotation

B   Revolution

C   Rotation and Revolution both

D   None of these

   Answer: B

Question 84

Plants with weak stems that cannot stand upright and spread on the ground are called as _____.

A   Creepers

B   Trees

C   Shrubs

D   Herbs

   Answer: A

Question 85

Part of a leaf by which it is attached to the stem is called as _____.

A   Joint

B   Point

C   Petiole

D   Lamina

   Answer: C

Question 86

If the CO_2 concentration in the blood increases, the breathing shall _____.

A Increase

B Decrease

C Affected

D Stop

   Answer: A

Question 87

It is difficult to walk on ice because of _____.

A absence of friction

B less inertia

C more inertia

D more mass

   Answer: A

Question 88

Work done upon a body _____.

A only a vector quantity

B only a scalar quantity

C both vector and scalar

D neither vector nor scalar

   Answer: B

Question 89

Which was the first web browser?

A Safari

B Netscape Navigator

C Internet Explorer

D Chrome

   Answer: B

Question 90

Which of the following acids is present in sour milk?

A   Formic acid

B   Lactic acid

C   Citric acid

D   Tartaric acid

   Answer: B

Question 91

Acids turn blue litmus into which colour?

A   Green

B   Red

C   Pink

D   Colourless

   Answer: B

Question 92

Which of the following represents correct food chain?

A   Grass → Frog→ Insect → Eagle → Snake

B   Grass → Insects → Frog → Snake → Eagle

C   Grass → Snake → Eagle → Insects → Frog

D   Grass → Eagle → Snake → Insects → Frog

   Answer: B

Question 93

Which among the following is not an aim of 'Make in India' campaign?

A   Facilitate investment

B   Enhance skill development

C   Foster innovation

D   Financial inclusion

   Answer: D

Question 94

Who among the following invented battery?

A   Rudolf Diesel

B   Alfred Noble

C Alessandro Volta

D John Napier

   Answer: C

Question 95

Which country won the 2016 Kabaddi World Cup?

A India

B Iran

C South Korea

D Bangladesh

   Answer: A

Question 96

Paintings of Ajanta depict stories of _____.

A Jatakas

B Tenali Rama

C Akbar Birble

D Panchatantra

   Answer: A

Question 97

Who is the winner of Man Booker International Prize 2017?

A David Grossman

B Arundhati Roy

C Steven Spielberg

D George Lucas

   Answer: A

Question 98

Who is the author of the book named "The God of Small things"?

A Nasiruddin Shah

B R.D. Pradhan

C Vijay Darda

D Arundhati Roy

   Answer: D

Question 99

Which country is India's first 2+2 dialogue partner among any country of world?

A Pakistan

B Sri-Lanka

C Bangladesh

D Japan

   Answer: D

Question 100

Indus water treaty 1960 is an agreement between India and _____.

A Bangladesh

B Pakistan

C China

D Nepal

   Answer: B

SSC MTS 21 September 2017 Shift 3

Reasoning

Instructions

For the following questions answer them individually

Question 1

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

2	1	5
4	2	3
3	6	2
25	13	?

A 16

B 30

C 31

D 41

  Answer: C

Explanation:

In each column, the number at the end is the sum of 1 and product of first three numbers.

Eg : $(2 \times 4 \times 3) + 1 = 24 + 1 = 25$

and $(1 \times 2 \times 6) + 1 = 12 + 1 = 13$

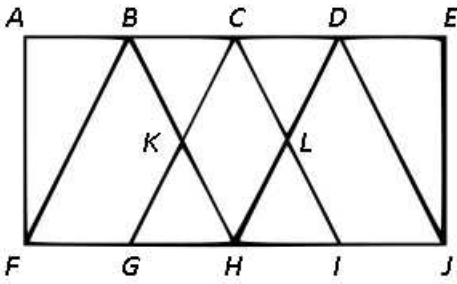Similarly, $(5 \times 3 \times 2) + 1 = 30 + 1 = 31$

=> Ans - (C)

Question 2

How many triangles are there in the given figure ?
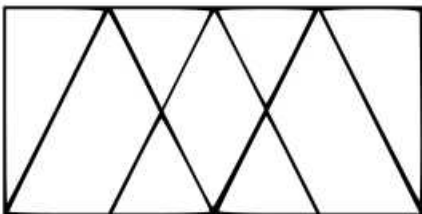
A 8

B 10

C 12

D 9

  Answer: B

Explanation:

Small triangles = ABF, BKC, GKH, CLD, HLI, DEJ

Big triangles = BFH, DHJ, GCI, BDH

Thus, total triangles = **10**

=> Ans - (B)

Question 3

From the given number series select the most appropriate series that follows some order

A 00, 28, 49, 35 ,21

B 95, 67, 32, 56, 12

C 00, 67, 78, 04, 76

D 95, 11, 33, 55, 77

Answer: A

Explanation:
here, we add multiple of 7 from the first digit to the last like
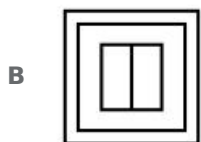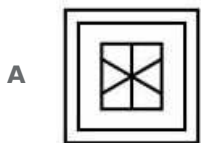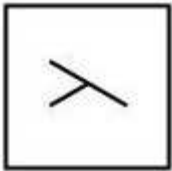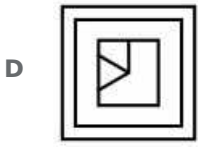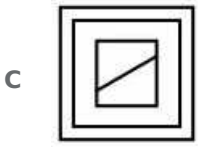
00 + 28 = 28

28 + 21 = 49

21 + 14 = 35

14 + 07 = 21

Question 4

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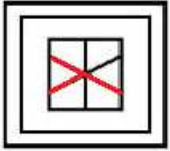

A

B
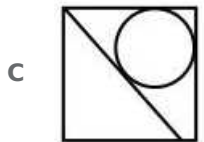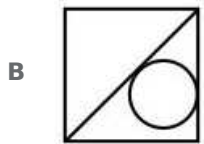
C

D

Answer: A

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

=> Ans - (A)

Question 5

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 6

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

A

B

C

D
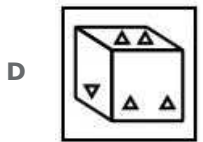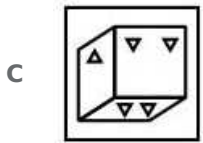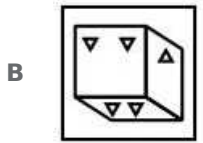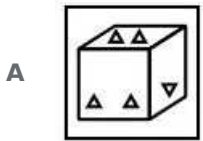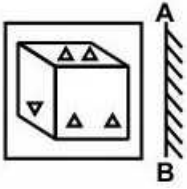
   Answer: A

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

The middle two options are eliminated, since there is no bottom face of the cube.

Also, in the question figure, the triangle at the left face will appear at right side, hence first option is the right image.

=> Ans - (A)

Question 7

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
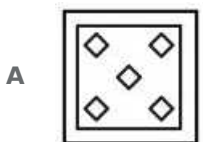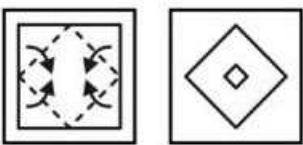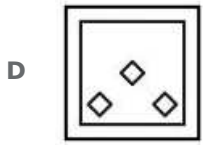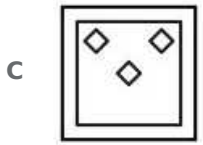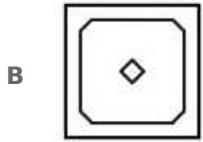
Answer: B

Question 8

If 'A' means '+', 'B' means '-', 'C' means '×' and 'D' means '÷', then which of the following equation is true?

A   12 D 6 A 4 C 3 = 12

B   24 C 3 B 14 = 58

C   14 C 2 D 7 A 3 = 6

D   48 D 3 C 2 = 31

Answer: B

Explanation:
(A) : 12 D 6 A 4 C 3 = 12

$\equiv 12 \div 6 + 4 \times 3 = 12$

L.H.S. $= 2 + 12 = 14 \neq$ R.H.S.

(B) : 24 C 3 B 14 = 58

$\equiv 24 \times 3 - 14 = 58$

L.H.S. $= 72 - 14 = 58 =$ R.H.S.

=> Ans - (B)

Question 9

If 9 $ 4 = 17 and 1 $ 5 = 10, then 3 $ 6 = ?

A   11

B   14

C   13

D   16

Answer: C

Explanation:

The pattern followed is that for the numbers of the form : $a \$ b = (a + b) + 4$

Eg :- $(9 + 4) + 4 = 17$

and $(1 + 5) + 4 = 10$

Similarly, $(3 + 6) + 4 = 13$

=> Ans - (C)

Question 10

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

1. Book
2. Bread
3. Butter
4. Bayern
5. Bulb

A   42135

B   41253

C   42153

D   41235

   Answer: B

Explanation:

As per order of dictionary :

= Bayern -> Book -> Bread -> Bulb -> Butter

$\equiv$ 41253

=> Ans - (B)

Question 11

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

7, 26, ?, 124, 215, 342

A   63

B   65

C   66

D   67

   Answer: A

Explanation:

The numbers are of the form $(n)^3 - 1$ where n is a natural number.

$(2)^3 - 1 = 7$

$(3)^3 - 1 = 26$

$(4)^3 - 1 = 63$

$(5)^3 - 1 = 124$

$(6)^3 - 1 = 215$

$(7)^3 - 1 = 342$

=> Ans - (A)

Question 12

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

A, D, I, P, ?

A   U

B   R

C   W

D   Y

  Answer: D

Explanation:
Consecutive odd numbers are added.

A (+3 letters) = D

D (+5 letters) = I

I (+7 letters) = P

P (+9 letters) = **Y**

=> Ans - (D)

Question 13

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

A   Oxygen : Gas

B   Mercury : Gas

C   Gold : Metal

D   Uranium : Metal

  Answer: B

Explanation:
The second is the property of the first. Oxygen is a gas but mercury is a liquid.

Gold and Uranium are metals.

Hence, **Mercury : Gas** is the odd one.

=> Ans - (B)

Question 14

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

A   4 : 18

B   7 : 51

C 9 : 83

D 6 : 34

Answer: D

Explanation:
The numbers are of the form $= n : n^2 + 2$

(A) : $(4)^2 + 2 = 18$

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

(C) : $(9)^2 + 2 = 83$

(D) : $(6)^2 + 2 = 38 \neq 34$

=> Ans - (D)

Question 15

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

A U

B S

C Q

D G

Answer: A

Explanation:
Among the given alphabets, only **U** is a vowel, hence it is the odd one out.

=> Ans - (A)

Question 16

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

Reptiles, Lizard, Lion

A

B

C

D
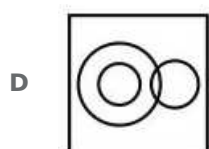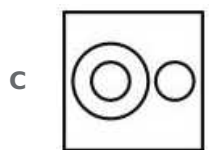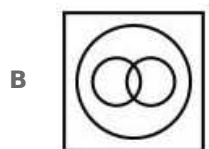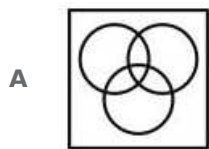
Answer: C

Explanation:
All lizards comes under the category of lizards, but lions are mammals.

Thus, the venn diagram that best describes above relationship is :
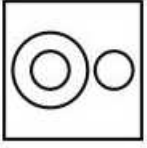
=> Ans - (C)

Question 17

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

Saw : Carpenter : : Axe : ?

A   Ironsmith

B   Woodcutter

C   Cobbler

D   None of those

   Answer: B

Explanation:
Expression = Saw : Carpenter : : Axe : ?

The main tool of a carpenter is a saw with which he does his job, similarly a **woodcutter** uses a saw.

=> Ans - (B)

Question 18

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

8 : 27 : : 64 : ?

A   190

B   144

C   125

D   72

   Answer: C

Explanation:
Expression = 8 : 27 : : 64 : ?

The pattern followed is = $(n)^3 : (n+1)^3$

Eg :- $(2)^3 : (2+1)^3 = 8 : 27$

Similarly, $(4)^3 : (4+1)^3 = 64 : 125$

=> Ans - (C)

Question 19

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

NP : HJ : : SY : ?

A NT

B MS

C MT

D NS

   Answer: B

Explanation:
Expression = NP : HJ : : SY : ?

The pattern followed is that in the pair each letter of the first term is related to the second term as :

N (-6 letters) = H
P (-6 letters) = J

Similarly, S (-6 letters) = M, Y (-6 letters) = S

=> SY : **MS**

=> Ans - (B)

Question 20

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

BILLIONAIRE

A RANT

B BONE

C RAIN

D LINE

   Answer: A

Explanation:
The word BILLIONAIRE does not contain any 'T', thus the term **Rant** cannot be formed.

=> Ans - (A)

Question 21

The ratio of present ages of Raman and Lamba is 7 : 5. After 6 years, age of Raman will be 48 years. What is the present age (in years) of Lamba?

A 30

B 25

C 35

D 40

   Answer: A

Explanation:

It is given that 6 years hence, Raman's age = 48 years

=> Raman's present age = $48 - 6 = 42$ years

Ratio of present ages of Raman and Lamba = 7 : 5

=> Lamba's present age = $\overset{5}{7} \times 42 = 30$ years

=> Ans - (A)

Question 22

Weight of Sona is four times that of Mona. Weight of Mona is 2.5 times of Hona. Weight of Hona is 1.5 times of Dhona. Weight of Dhona is 2.5 times of Rona. Who is the heaviest?

A   Mona

B   Sona

C   Hona

D   Dhona

   Answer: B

Explanation:

Let Rona's weight = 100 kg

Weight of Dhona is 2.5 times of Rona, => Dona's weight = $2.5 \times 100 = 250$ kg

Weight of Hona is 1.5 times of Dhona, => Hona's weight = $1.5 \times 250 = 375$ kg

Weight of Mona is 2.5 times of Hona, => Mona's weight = $2.5 \times 375 = 937.5$ kg

Weight of Sona is four times that of Mona, => Sona's weight = $4 \times 937.5 = 3750$ kg

∴ **Sona** is the heaviest.

=> Ans - (B)

Question 23

In 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. All books are pens.
II. All pens are tables.

Conclusions:

I. Some pens are tables.
II. All tables are books.

A   Only conclusion (I) follows.

B   Only conclusion (II) follows.

C   Both conclusion follow.

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

   Answer: A

Explanation:

The venn diagram for above statements is :
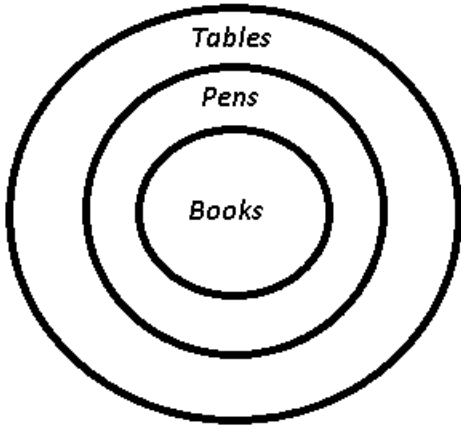
Conclusions:

I. Some pens are tables = true
II. All tables are books = false

Thus, only conclusion (I) follows.

=> Ans - (A)

Question 24

In a certain code language, "PAGE" is written as "QCJI". How is "CALL" written in that code language?

A   DCOP

B   DCOQ

C   DDOP

D   DCOR

   Answer: A

Explanation:

"PAGE" is written as "QCJI"

The pattern followed is :

P	A	G	E
(+1)	(+2)	(+3)	(+4)
Q	C	J	I

Similarly, for CALL : **DCOP**

C	A	L	L
(+1)	(+2)	(+3)	(+4)
D	C	O	P

=> Ans - (A)

Question 25

In a certain code language, "GOAT" is written as "45" and "COAT" is written as "41". How is "BOAT" written in that code language?

A   40

B   41

C 42

D 43

   Answer: A

Explanation:

"GOAT" is written as "45"

The pattern followed is that if we number the alphabets sequentially, i.e. A=1, B=2, C=3 and so on.

Also, '2' is added to the sum of the numbers.

Eg :- GOAT $\equiv (7 + 15 + 1 + 20) + 2 = 45$

and COAT $\equiv (3 + 15 + 1 + 20) + 2 = 41$

Similarly, BOAT $\equiv (2 + 15 + 1 + 20) + 2 = 40$

=> Ans - (A)

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 26

These five sisters (1)/ care for one other (2)/ like mothers. (3)/ No Error (4)/

A   These five sisters

B   care for one other

C   like mothers.

D   No Error

   Answer: B

Question 27

Akshay kumar being a (1)/ good actor he is (2)/ presented with the National Award. (3)/ No Error (4)/

A   Akshay kumar being a

B   good actor he is

C   presented with the National Award.

D   No Error

   Answer: B

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 28

More than thirty years have now passed _____ I had my first flight.

A   since

B   after

C   while

D   when

   Answer: A

Question 29

Raman has come up _____ a problem.

A   for

B   with

C   of

D   into

   Answer: B

Instructions

In the following question, out of the given four alternatives, select the one which best expresses the meaning of the given word.

Question 30

Plight

A   Blessing

B   Aid

C   Relief

D   Difficulty

   Answer: D

Question 31

Articulate

A   Distinct

B   Unclear

C   Disconnect

D   Secret

   Answer: A

Question 32

Mandatory

A   Optional

B   Voluntary

C   Essential

D   Unnecessary

   Answer: C

Instructions

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

Question 33

Negotiate

A   Adjust

B   Consult

C   Debate

D   Remain

   Answer: D

Question 34

Distress

A   Concern

B   Pleasure

C   Anxiety

D   Discomfort

   Answer: B

Question 35

Tolerate

A   Accept

B   Bear

C   Permit

D   Disapprove

   Answer: D

In the following question, out of the given four alternatives, select the alternative which best expresses the meaning of the Idiom/Phrase.

Question 36

Break the ice

A   Bad intention

B   To escape

C   To break the silence

D   To fail

Answer: C

Question 37

Cry in the wilderness

A   Upset the balance

B   An unrealistic demand

C   To defeated completely

D   A sudden shock

Answer: B

Instructions

In the following question, out of the four alternatives, select the alternative which will improve the bracketed part of the sentence. In case no improvement is needed, select "no improvement".

Question 38

(Upto) the time he wasn't here, we were not sure if he will actually come.

A   Till

B   To

C   Until

D   No improvement

Answer: A

Question 39

As feared, (differences into) the families pose a hurdle.

A   difference into

B   difference as in

C difference amongst

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 40

That which cannot be put out

A Illusion

B Indigenous

C Incentive

D Inextinguishable

Answer: D

Question 41

The system which is observed to do progress

A Violation

B Impairing

C Preservation

D Reformism

Answer: D

Instructions

For the following questions answer them individually

Question 42

In the following question, a word has been written in four different ways out of which only one is correctly spelt. Select the correctly spelt word.

A Beneficial

B Benfical

C Benaficial

D Beneficle

Answer: A

Question 43

In the following question, a word has been written in four different ways out of which only one is correctly spelt. Select the correctly spelt word.

A Continuous

B Continous

C Contenuous

D Countionuous

   Answer: A

Instructions

The question below consists of a set of labelled sentences. Out of the four options given, select the most logical order of the sentences to form a coherent paragraph.

Question 44

Integrating diversity

P: governance which is firmly grounded
Q: in international human rights law
R: goes hand in hand with

A QPR

B RPQ

C PRQ

D QRP

   Answer: B

Question 45

Demographic pressure

P: wage rate below
Q: the subsistence level
R: cannot push the

A QPR

B RPQ

C QRP

D PQR

   Answer: B

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.

Books are our __ (1)____ friends. They are our guides. We can learn everything from them. The books contain all the great ___(2)___ of the world's leaders and we can learn them by reading the books. The books help us find ___(3)___ to our questions. The books never fail us. We should read as ___(4)___ books as we can. But all books are not good. So we should ___(5)___ only good books.

Question 46

Books are our _____ friends.

A fake

B original

C real

D majestic

Answer: C

Question 47

the great _____ of our world

A feel

B thoughts

C idle

D money

Answer: B

Question 48

The books help us find _____ to

A answers

B solutions

C relations

D opinions

Answer: A

Question 49

_____ books as we can.

A much

B many

C few

D less

Answer: B

Question 50

So we should _____ only good books and read them.

A remove

B looking

C steel

D choose

   Answer: D

Quant

Instructions

For the following questions answer them individually

Question 51

Which smallest number must be subtracted from 400, so that the resulting number is completely divisible by 7?

A 6

B 1

C 2

D 4

   Answer: B

Explanation:

On dividing 400 by 7, we get : $400 = 7 \times 57 + 1$

Thus, the smallest number which should be subtracted from 400 = 1

Also, $400 - 1 = 399$ is completely divisible by 7.

=> Ans - (B)

Question 52

The sum of three consecutive even integers is 84. Which is the least integer among them?

A 28

B 30

C 32

D 26

   Answer: D

Explanation:

Let the 3 consecutive even integers be $(x - 2), (x), (x + 2)$

Sum = $(x - 2) + (x) + (x + 2) = 84$

=> $3x = 84$

$=> x = \frac{84}{3} = 28$

$\therefore$ Least integer $= 28 - 2 = 26$

$=>$ Ans - (D)

Question 53

A number exceeds its $\frac{1}{6}$ by 30. What is the number?

A   120

B   150

C   36

D   24

   Answer: C

Explanation:

Let the number $= 6x$

According to ques,

$=> 6x - (\frac{1}{6} \times 6x) = 30$

$=> 6x - x = 5x = 30$

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

$\therefore$ Number $= 6 \times 6 = 36$

$=>$ Ans - (C)

Question 54

What is the digit in unit's place of the product $51 \times 52 \times 53 \ldots \ldots 59$?

A   0

B   4

C   3

D   6

   Answer: A

Explanation:

Expression : $51 \times 52 \times 53 \ldots \ldots 59$

The above set of number contains 52 (or any even number) and 55 and the unit's digit of their product is 0.

Thus, the digit in unit's place of the product $51 \times 52 \times 53 \ldots \ldots 59 = 0$

$=>$ Ans - (A)

Question 55

What is the value of 2^{3^2} ?

A   64

B 128

C 512

D 256

   Answer: C

Explanation:

Expression : 2^{3^2}

$= 2^9 = 512$

=> Ans - (C)

Question 56

How many numbers less than 200 are multiples of both 5 and 6?

A 21

B 7

C 9

D 6

   Answer: D

Explanation:

Numbers which are multiples of both 5 and 6 = Numbers which are multiples of L.C.M. (5,6) = 30

We know that $30 \times 6 = 180 < 200$

Thus, numbers less than 200 that are multiples of 30 = **6**

=> Ans - (D)

Question 57

Working 10 hours a day, Aman can complete a piece of work in 18 days. How many hours a day should he work so as to finish the work in 15 days?

A 10

B 12

C 16

D 18

   Answer: B

Explanation:

Using the equation, $D_1 H_1 = D_2 H_2$, where D is the number of days and H is the number of hours

=> $(18 \times 10) = (15 \times h_2)$

=> $h_2 = \frac{18 \times 10}{15}$

=> $h_2 = 6 \times 2 = 12$ hours

=> Ans - (B)

Question 58

A can do a piece of work in 10 days and B in 12 days. With help of C, they finish the work in 4 days. In how many days C alone can do the same work?

A 12

B 15

C 18

D 24

    Answer: B

Explanation:

Let total work is L.C.M. (10,12,4) = 60 units

A alone can complete a work in 10 days, => A's efficiency = $\frac{60}{10} = 6$ units/day

Similarly B's efficiency = $\frac{60}{12} = 5$ units/day

Now, (A+B+C)'s efficiency = $\frac{60}{4} = 15$ units/day

=> C's efficiency = $15 - (6 + 5) = 4$ units/day

∴ Days required by C alone to complete the work = $\frac{60}{4} = 15$ days

=> Ans - (B)

Question 59

The lengths of two diagonals of a rhombus are 24 cm and 32 cm. What is the side (in cm) of the rhombus?

A 20

B 40

C $20\sqrt{2}$

D $40\sqrt{2}$

    Answer: A

Explanation:
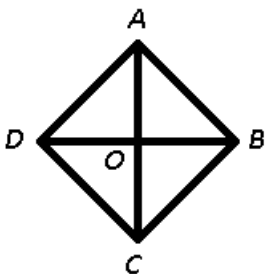
Give : ABCD is a rhombus, AC = 24 cm and BD = 32 cm

To find : AB = ?

Solution : Diagonals of a rhombus bisect each other at right angle.

=> OA = $\frac{24}{2} = 12$ cm and OB = $\frac{32}{2} = 16$ cm

Thus, in △ OAB,

=> $(AB)^2 = (OA)^2 + (OB)^2$

=> $(AB)^2 = (12)^2 + (16)^2$

=> $(AB)^2 = 144 + 256 = 400$

=> $AB = \sqrt{400} = 20$ cm

=> Ans - (A)

Question 60

The marked price of a chair is Rs 550 and a discount of 20% is given on it. What is the selling price (in Rs)?

A 440

B 430

C 470

D 390

   Answer: A

Explanation:
Marked price = Rs. 550

Discount % = 20%

=> Selling price = $\frac{(100-20)}{100} \times 550$

= $8 \times 55 = Rs.\ 440$

=> Ans - (A)

Question 61

The marked price of an article is Rs 960 and it is sold at a discount of Rs 192. What is the discount percentage?

A 15

B 20

C 25

D 30

   Answer: B

Explanation:
Marked price = Rs. 960

Discount price = Rs. 192

=> Discount % = $\frac{192}{960} \times 100$

= $0.2 \times 100 = 20\%$

=> Ans - (B)

Question 62

If A : B = 1 : 4 and B : C = 2 : 3, then what is A : B : C?

A   1 : 4 : 6

B 2 : 8 : 7

C 2 : 8 : 5

D 1 : 4 : 5

   Answer: A

Explanation:

Given = A : B = 1 : 4 and B : C = 2 : 3

=> $\frac{A}{B} = \frac{1}{4}$ ----------------(i)

and $\frac{B}{C} = \frac{2}{3}$ ----------------(ii)

Multiplying equation (ii) by '2', we get : $\frac{B}{C} = \frac{4}{6}$

Now, the value of B is same in both equation, => A : B : C = 1 : 4 : 6

=> Ans - (A)

Question 63

If $\frac{x}{y} = \frac{2}{3}$, then what is the ratio of $(3x + 2y)$ and $(3x - y)$?

A 4 : 1

B 3 : 1

C 2 : 1

D 4 : 3

   Answer: A

Explanation:

Given : $\frac{x}{y} = \frac{2}{3}$

Let $x = 2$ and $y = 3$

To find : $\frac{(3x+2y)}{(3x-y)}$

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

$= \frac{6+6}{6-3} = \frac{12}{3}$

$= 4 : 1$

=> Ans - (A)

Question 64

The average of 21 numbers is 12. The average of the first 11 numbers is 9 and the average of the last 11 numbers is 15. What is the value of the middle number?

A 10

B 11

C 12

D 13

Answer: C

Explanation:
Average of 21 numbers = 12

=> Sum of 21 numbers = $21 \times 12 = 252$

Similarly, sum of first 11 numbers = $11 \times 9 = 99$

Sum of last 11 numbers = $11 \times 15 = 165$

$\therefore$ Value of the middle number = $(99 + 165) - 252 = 264 - 252 = 12$

=> Ans - (C)

Question 65

If the rice is sold at Rs 56 per kg, there would be a 40% loss. To earn a profit of 20% what should be the price of rice (per kg)?

A 112

B 108

C 116

D 124

Answer: A

Explanation:
Selling price = Rs. 56

Loss % = 40%

=> Cost price = $\frac{56}{(100-40)} \times 100$

$= \frac{5600}{60} = Rs. \frac{280}{3}$

Now, to earn 20% profit, => Selling price = $\frac{280}{3} + \left(\frac{20}{100} \times \frac{280}{3} \right)$

$= \frac{280}{3} + \frac{56}{3} = \frac{336}{3} = Rs. 112$

=> Ans - (A)

Question 66

If the profit is 20%, then what will be the ratio of cost price to selling price respectively?

A 4 : 5

B 5 : 6

C 2 : 5

D 3 : 4

Answer: B

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

Profit % = $\frac{(S.P.-C.P.)}{C.P.} \times 100$

=> $\frac{(y-x)}{x} \times 100 = 20$

=> $\frac{(y-x)}{x} = \frac{20}{100} = \frac{1}{5}$

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

$$\Rightarrow 5y = x + 5x = 6x$$

$$\Rightarrow \frac{x}{y} = \frac{5}{6}$$

=> Ans - (B)

Question 67

In a school 60% of the students are girls. If number of boys is 480, then what is the total number of students in the school?

A   1200

B   840

C   96

D   1320

  Answer: A

Explanation:

Let total number of students = $100x$

=> Number of girls = $\frac{60}{100} \times 100x = 60x$

=> Number of boys = $100x - 60x = 40x$

According to ques, => $40x = 480$

$$\Rightarrow x = \frac{480}{40} = 12$$

$\therefore$ Total number of students = $100 \times 12 = 1200$

=> Ans - (A)

Question 68

If one-third of a number is 45, then what will be the 45% of that number?

A   60.75

B   58.25

C   61.25

D   70.75

  Answer: A

Explanation:

Let number = x

According to ques, => $\frac{1}{3} \times x = 45$

$$\Rightarrow x = 45 \times 3 = 135$$

$\therefore$ 45% of $x = \frac{45}{100} \times 135$

$$= \frac{9 \times 27}{4} = \frac{243}{4} = 60.75$$

=> Ans - (A)

Question 69

Speeds of a boat along the current and against the current are 14 km/hr and 7 km/hr respectively. What is the speed of boat (in km/hr) in still water?

A   3.5

B   7.5

C   10.5

D   9.5

   Answer: C

Explanation:
Downstream speed of boat = 14 km/hr

Upstream speed of boat = 7 km/hr

=> Speed of boat (in km/hr) in still water = $\frac{1}{2} \times (14 + 7)$

= $\frac{21}{2}$ = 10.5 km/hr

=> Ans - (C)

Question 70

A person goes from point N to P and comes back. His average speed for the whole journey is 60 km/hr. If his speed while going from N to P is 40 km/hr, then what will be the speed of the person (in km/hr) while coming back from P to N?

A   80

B   100

C   120

D   140

   Answer: C

Explanation:
Speed of the person from point N to P = 40 km/hr

Let speed on return journey = s km/hr

Since, equal distances are covered, average speed = harmonic mean of both speeds = $\frac{2xy}{x+y}$

=> $\frac{2 \times s \times 40}{s+40} = 60$

=> $\frac{80s}{s+40} = 60$

=> $\frac{4s}{s+40} = 3$

=> $4s = 3s + 120$

=> $4s - 3s = s = 120$

∴ Speed of the person (in km/hr) while coming back from P to N = 120 km/hr

=> Ans - (C)

Question 71

A certain principal is invested in a scheme of compound interest. The amount obtained after 1 year is Rs 2400 and the amount obtained after 2 years is Rs 2880. What is the rate of interest (in percentage)?

A 20

B 15

C 25

D 10

Answer: A

Explanation:

Amount obtained after 1 year = Rs. 2400

Amount obtained after 2 years = Rs. 2880

$$=> \text{Rate of interest} = \frac{(2880-2400)}{2400} \times 100$$

$$= \frac{480}{24} = 20\%$$

=> Ans - (A)

Instructions

The line chart given below shows the profit (in crores) of a company for the years 2008 to 2015.
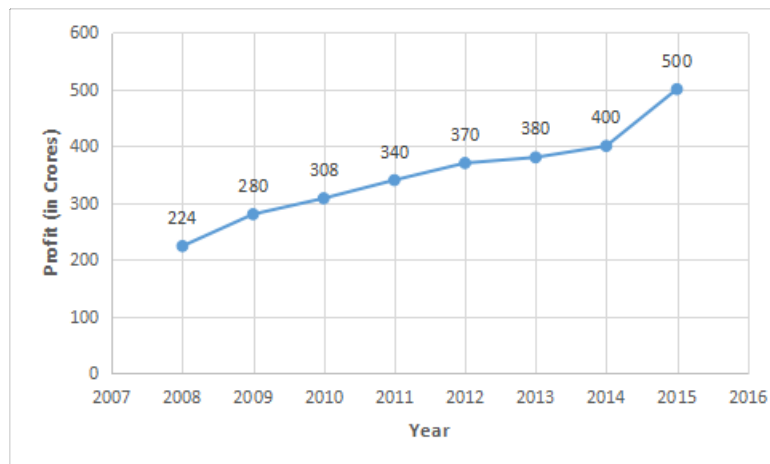
Question 72

In how many years from 2009 to 2015 the increase in profit with respect to previous years is more than 30 crores?

A 3

B 2

C 5

D 1

Answer: A

Explanation:

In the years : 2009, 2011 and 2015 the increase in profit with respect to previous years is respectively 56, 32 and 100 crores, i.e. more than 30 crores.

=> Ans - (A)

Question 73

What is the percentage increase in profit in the year 2010 in comparison to the previous year?

A 20

B 12

C 10

D 25

   Answer: C

Explanation:
Profit (in crores) in 2009 = 280

Profit (in crores) in 2010 = 308

=> Required % increase = $\frac{(308-280)}{280} \times 100$

= $\frac{280}{28} = 10\%$

=> Ans - (C)

Question 74

The profit in 2015 is what percent of the profit in 2014?

A 75

B 115

C 135

D 125

   Answer: D

Explanation:
Profit (in crores) in 2015 = 500

Profit (in crores) in 2014 = 400

=> Required % = $\frac{500}{400} \times 100$

= $\frac{500}{4} = 125\%$

=> Ans - (D)

Question 75

What is the average profit per year from 2011 to 2015?

A 398

B 406

C 384

D 387

   Answer: A

Explanation:

Total profits (in crores) per year from 2011 to 2015

= 340 + 370 + 380 + 400 + 500 = 1990

=> Average profit for 5 years = $\frac{1990}{5} = 398$

=> Ans - (A)

General Awareness

Instructions

For the following questions answer them individually

Question 76

Micro-economics is also called _____

A   Profit theory

B   Loss theory

C   Price theory

D   Expenditure theory

   Answer: A

Question 77

Transport comes under which sector of economic growth?

A   Secondary sector

B   Primary sector

C   Tertiary sector

D   Quaternary sector

   Answer: C

Question 78

Which among the following refers the existence of more than one level of Government in the Country?

A   Democracy

B   Federalism

C   Monarchy

D   Bicameral

   Answer: B

Question 79

Which among the following Amendment Act is also known as 'Mini Constitution'?

A 2nd Amendment

B 42nd Amendment

C 48th Amendment

D 57th Amendment

   Answer: B

Question 80

In which language did Vardhaman Mahavira taught?

A Prakrit

B Hindi

C Pali

D Sanskrit

   Answer: A

Question 81

During which period Non-Cooperation Movement gained momentum?

A 1910-1912

B 1915-1917

C 1921-1922

D 1930-1932

   Answer: C

Question 82

The moon that we see in the sky is a _____.

A Planet

B Star

C Sun

D Satellite

   Answer: D

Question 83

The world's longest river the Nile, flows through which continent?

A South America

B Africa

C North America

D Europe

   Answer: B

Question 84

Which category of compound is most concentrated energy source?

A Fats

B Starch

C Proteins

D Vitamins

   Answer: A

Question 85

What is main root of plants called as?

A Tap root

B Lateral roots

C Fibrous roots

D Anchor

   Answer: A

Question 86

The exchange of materials between blood and interstitial fluid occurs only at the _____.

A Veins

B Capillaries

C Arteries

D Arterioles

   Answer: B

Question 87

The commonly used thermometric substance is _____.

A mineral oil

B Alcohol

C   Mercury

D   Petrol

   Answer: C

Question 88

Heat flows as a result of difference of _____.

A   Temperature

B   Density

C   mass

D   Volume

   Answer: A

Question 89

What is the full form of GUI?

A   Graphical Universal Interface

B   Graphical User Interface

C   Graphical User Integration

D   Graphical Universal Integration

   Answer: B

Question 90

A proton is identical to _____.

A   the nucleus of helium

B   the nucleus of a hydrogen atom

C   an alpha-particle

D   a beta particle

   Answer: D

Question 91

An ∝ particle is _____.

A   A hydrogen molecule

B   A helium nucleus

C   An atom of hydrogen

D   A proton

Answer: B

Question 92

What is the process of waste water treatment is commonly known?

A   Waste water management

B   Cleaning of water

C   Sewage treatment

D   Decontamination

  Answer: C

Question 93

When was "Pradhan Mantri Mudra Yojana" launched?

A   September 2014

B   November 2014

C   April 2015

D   January 2016

  Answer: C

Question 94

Who among the following discovered electron?

A   J.J Thomson

B   Max Born

C   Antoine Lavoisier

D   Mendeleef

  Answer: A

Question 95

Which team has won the 2016 -17 Ranji Trophy?

A   Mumbai

B   Gujarat

C   Karnataka

D   Tamil Nadu

  Answer: B

Question 96

Madhubani artwork started in which state of India?

A   Bihar

B   Uttar Pradesh

C   Rajasthan

D   Gujrat

   Answer: A

Question 97

Who is the recipient of Kala Ratna Award 2017?

A   Anupam Kher

B   Om Puri

C   Naseeruddin Shah

D   Prahlaj Nihalani

   Answer: A

Question 98

Who is the author of the book named "Making India Awesome"?

A   Jairam Ramesh

B   Tarun Khanna

C   Chetan Bhagat

D   Amitav Ghosh

   Answer: C

Question 99

Which country has established new 2+2 ministerial dialogue with India similar to India Japan 2+2 dialogue?

A   Britain

B   Australia

C   USA

D   Israel

   Answer: C

Question 100

Which neighbouring country of India lies to the south of Lakshadweep islands?

A   Maldives

B   Bangladesh

C   Myanmar

D   Indonesia

   Answer: A