

SSC MTS 9 October 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.

1	6	7	28
4	2	9	30
8	5	3	?

- A 30
- B 32
- C 64
- D 44

Answer: B

Explanation:

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

$$\text{Eg :- } 2 \times (1 + 6 + 7) = 2 \times 14 = 28$$

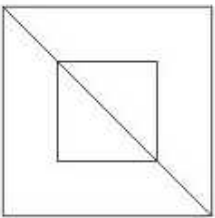
$$\text{and } 2 \times (4 + 2 + 9) = 2 \times 15 = 30$$

$$\text{Similarly, } 2 \times (8 + 5 + 3) = 2 \times 16 = 32$$

=> Ans - (B)

Question 2

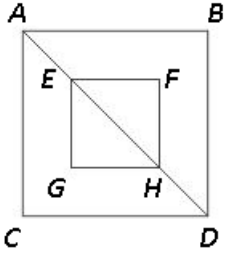
How many triangles are there in the given figure ?



- A 2
- B 3
- C 4
- D 6

Answer: C

Explanation:



Small triangles = EGH, EFH

Big triangles = ACD, ABD

Thus, total triangles = 4

=> 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 on in the given two matrices. The columns and rows of Matrix-I are numbered from 0 to 4 and that 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, 'D' can be represented by 04, 77, etc., and 'U' can be represented by 33, 65, etc., Similarly you have to identify the set for the word "LOVE",

Matrix-I

	0	1	2	3	4
0	U	V	F	C	D
1	L	Y	K	E	J
2	X	P	V	M	K
3	B	R	E	U	H
4	A	L	D	X	N

Matrix-II

	5	6	7	8	9
5	S	N	L	A	H
6	U	O	Z	Y	E
7	B	X	D	C	P
8	X	H	S	M	T
9	V	F	A	X	O

A 10, 65, 95, 69

B 57, 66, 96, 13

C 57, 99, 01, 69

D 41, 99, 23, 69

Answer: C

Explanation:

(A) : 10, 65, 95, 69 = LUVE

(B) : 57, 66, 96, 13 = LOFE

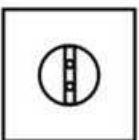
(C) : 57, 99, 01, 69 = **LOVE**

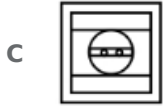
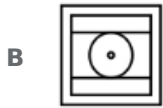
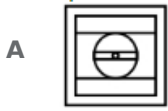
(D) : 41, 99, 23, 69 = LOME

=> Ans - (C)

Question 4

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





Answer: C

Explanation:

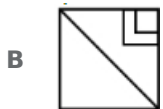
The second and last options are clearly eliminated since, they do not have a circle having a pair of parallel lines.

Of the remaining two options, since there are two dots within the lines, hence third option is correct.

=> Ans - (C)

Question 5

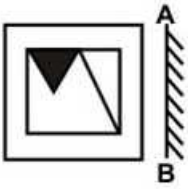
Which answer figure will complete the pattern in the question figure ?



Answer: C

Question 6

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



Answer: C

Explanation:

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

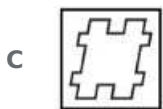
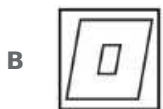
So the black triangle at the top left will be reversed and will appear at top right, thus the first and last options will be eliminated.

Also, in the question figure, the line is from the corner is touching the triangle, 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 ?



D



Answer: D

Question 8

If 'Q' means '+', 'L' means '×', 'T' means '÷', 'Z' means '-', then
 $17 \text{ Q } 4 \text{ T } 9 \text{ L } 18 = ?$

A 36

B 25

C 42

D 54

Answer: B

Explanation:

Expression : $17 \text{ Q } 4 \text{ T } 9 \text{ L } 18 = ?$

$$\equiv 17 + 4 \div 9 \times 18$$

$$= 17 + (4 \times \frac{18}{9})$$

$$= 17 + 8 = 25$$

=> Ans - (B)

Question 9

If $17 \times 13 = 4$ and $16 \times 14 = 2$, then $29 \times 23 = ?$

A 5

B 7

C 6

D 8

Answer: C

Explanation:

Given : $17 \times 13 = 4$ and $16 \times 14 = 2$

If we replace '×' with '-', then L.H.S. = R.H.S.

$$\text{Eg :- } 17 - 13 = 4 \text{ and } 16 - 14 = 2$$

$$\text{Similarly, } 29 - 23 = 6$$

=> Ans - (C)

Question 10

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

1. Heart
2. Henry
3. Heavy
4. Hence
5. Hedge

- A 15342
B 31452
C 13425
D 13542

Answer: D

Explanation:

As per the order of dictionary :

= Heart -> Heavy -> Hedge -> Hence -> Henry

≡ 13542

=> Ans - (D)

Question 11

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

4, 1, 16, 9, 36, 25, 64, 49, ?

- A 64
B 81
C 100
D 121

Answer: C

Explanation:

Series : 4, 1, 16, 9, 36, 25, 64, 49, ?

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

First being square of even natural numbers and second of odd natural numbers.

1st : 4, 16, 36, 64, **100**

2nd : 1, 9, 25, 49

=> Ans - (C)

Question 12

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

T, P, L, H, ?

- A B

B C

C D

D E

Answer: C

Explanation:

The pattern followed is :

T (-4 letters) = P

P (-4 letters) = L

L (-4 letters) = H

H (-4 letters) = **D**

=> Ans - (C)

Question 13

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

A Deserts

B Mountains

C Plains

D Plants

Answer: D

Explanation:

Deserts, mountains and plains are types of landforms while plants are living organisms, hence they are the odd one out.

=> Ans - (D)

Question 14

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

A 14 - 12

B 22 - 20

C 35 - 33

D 43 - 40

Answer: D

Explanation:

The difference between each pair of the numbers is 2

(A) : $14 - 12 = 2$

(B) : $22 - 20 = 2$

(C) : $35 - 33 = 2$

(D) : $43 - 40 = 3 \neq 2$

=> Ans - (D)

Question 15

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

A DEC

B MNL

C RSQ

D WXU

Answer: D

Explanation:

(A) : D (+1 letter) = E (-2 letters) = C

(B) : M (+1 letter) = N (-2 letters) = L

(C) : R (+1 letter) = S (-2 letters) = Q

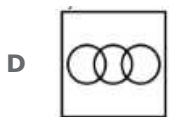
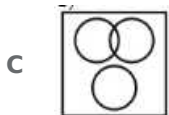
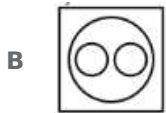
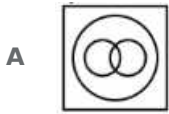
(D) : W (+1 letter) = X (-3 letters) = U

=> Ans - (D)

Question 16

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

Crockery, Cup, Plate



Answer: B

Explanation:

Cup and plates are some of the types of crockery, but are completely opposite from each other (hence do not intersect).

Thus, the venn diagram that best describes above relationship is :

=> Ans - (B)

Question 17

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

Pen : Paper :: Hammer : ?

- A Nail
- B Strike
- C Crushing
- D Hole

Answer: A

Explanation:

Expression = Pen : Paper :: Hammer : ?

The first is used on the second, i.e. we write on paper using a pen, similarly a hammer is used to hit on a **nail**.

=> Ans - (A)

Question 18

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

49 : 146 :: 63 : ?

- A 176
- B 188
- C 192
- D 204

Answer: B

Explanation:

Expression = 49 : 146 :: 63 : ?

The pattern followed is = $n : 3n - 1$

Eg :- $(3 \times 49) - 1 = 147 - 1 = 146$

Similarly, $(3 \times 63) - 1 = 189 - 1 = 188$

=> Ans - (B)

Question 19

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

PO : MQ :: IN : ?

- A EQ
- B FP
- C FQ
- D EP

Answer: B

Explanation:

Expression = PO : MQ :: IN : ?

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

P (-3 letters) = M

O (+2 letters) = Q

Similarly, I (-3 letters) = F , N (+2 letters) = P

=> IN : **FP**

=> Ans - (B)

Question 20

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

MACHINERY

A NEAR

B MICE

C MIND

D HAIRY

Answer: C

Explanation:

The word MACHINERY does not contain any 'D', thus the term **Mind** cannot be formed.

=> Ans - (C)

Question 21

Shiva walks 18 km towards east. He turns left and walks 37 km. He turns left and walks 24 km. In which direction is he from his starting point?

A South-East

B North-East

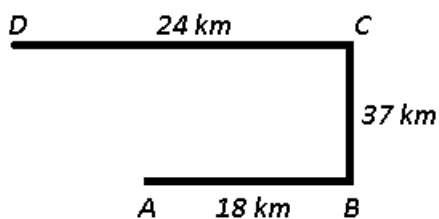
C North-West

D South-West

Answer: C

Explanation:

Let Shiva starts from point A and walks 18 km towards east to reach point B. He turns left and walks 37 km to reach C. He again turns left and walks 24 km to finally stop at point D.



Thus, he is in **North-West** direction from his starting point.

=> Ans - (C)

Question 22

Sahil is 7th from top and 10th from bottom. How many people are there in the row?

A 18

B 17

C 16

D 19

Answer: C

Explanation:

Sahil's rank from top = 7th

Sahil's rank from bottom = 10th

=> Total number of people = $(7 + 10) - 1 = 16$

=> 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 books are brown.

II. All brown are wood.

Conclusions:

I. Some books are wood.

II. Some books are not wood.

A Only conclusion (I) follows.

B Only conclusion (II) follows.

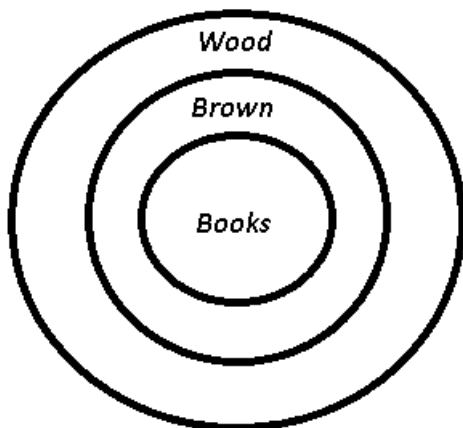
C Both conclusion follow.

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

Answer: A

Explanation:

The venn diagram for above statements is :



Conclusions:

- I. Some books are wood = true
 II. Some books are not wood = false

Thus, only conclusion (I) follows.

=> Ans - (A)

Question 24

In a certain code language, "ACID" is written as "BDJE". How is "BAKE" written in that code language?

- A CBLD
- B CBLF
- C CBMF
- D CCLF

Answer: B

Explanation:

"ACID" is written as "BDJE"

The pattern followed is :

A	C	I	D
(+1)	(+1)	(+1)	(+1)
B	D	J	E

Similarly, for BAKE : **CBLF**

B	A	K	E
(+1)	(+1)	(+1)	(+1)
C	B	L	F

=> Ans - (B)

Question 25

In a certain code language, "INK" is written as "33" and "PIN" is written as "38". How is "TIP" written in that code language?

- A 43
- B 44
- C 45
- D 46

Answer: B

Explanation:

"INK" is written as "33"

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

Also, '1' is subtracted from the sum of the numbers.

Eg :- $INK \equiv (9 + 14 + 11) - 1 = 33$

and $PIN \equiv (16 + 9 + 14) - 1 = 38$

Similarly, $TIP \equiv (20 + 9 + 16) - 1 = 44$

=> 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

An Country's Central News Agency (a)/ said the launch was a (b)/ "muscle-flexing". (c)/ No Error (d)

A a

B b

C c

D d

Answer: A

Question 27

A total of 300 economically backward (a)/ students would being awarded (b)/ the Narendra Modi Scholarship. (c) No Error (d)

A a

B b

C c

D d

Answer: B

Instructions

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

Question 28

I asked her if I _____ borrow her necklace for a day.

A could

B would

C should

D can

Answer: A

Question 29

She doesn't know _____ to accept or refuse the proposal.

- A** if
- B** that
- C** whether
- D** which

Answer: C

Question 30

Smear

- A** Discolour
- B** Honor
- C** Laud
- D** Upgrade

Answer: A

Question 31

Concession

- A** Denial
- B** Protest
- C** Retrograde
- D** Allowance

Answer: D

Question 32

Fickle

- A** Cognizant
- B** Unstable
- C** Accidental
- D** Steadfast

Answer: B

Instructions

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

Question 33

Grudge

- A Spite
- B Averse
- C Dislike
- D Goodwill

Answer: D

Question 34

Hail

- A Rain
- B Storm
- C Greet
- D Dribble

Answer: D

Question 35

Incite

- A Encourage
- B Arise
- C Drive
- D Prohibit

Answer: A

Instructions

In the following question, select the option which best describes the meaning of the word/phrase given.

Question 36

With open arms

- A Cordially
- B Often
- C Seldom
- D Frequently

Answer: A

Question 37

A bone of contention

- A Strong and healthy bones
- B Tough man
- C Cause of dispute
- D Peaceful thing

Answer: C

Instructions

For the following questions answer them individually

Question 38

Improve the bracketed part of the sentence.

No mention was made (to a) key amendment to the Constitution to accommodate demands that had been defeated just last Monday.

- A of a
- B in a
- C by a
- D No improvement

Answer: A

Question 39

Improve the bracketed part of the sentence.

Yet, it would be a mistake to presume that ties can so easily return to their pre-2015 strength, as the ground (had) shifted in too many ways since then.

- A have
- B has
- C was
- 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

Amount paid to a man for his labour.

- A Incentive

- B** Remuneration
- C** Gratuity
- D** Honorarium

Answer: B

Question 41

A diplomatic representative in another country.

- A** Spy
- B** Spinster
- C** Bureaucrat
- D** Ambassador

Answer: D

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** Secratary
- B** Secretery
- C** Secratery
- D** Secretary

Answer: D

Question 43

- A** Heinius
- B** Heinies
- C** Heinous
- D** Hienous

Answer: C

Instructions

For the following questions answer them individually

Question 44

Rearrange the parts of the sentence in correct order.

Friendship

P: an asset

Q: in life

R: is indeed

- A PQR
- B RPQ
- C QPR
- D PRQ

Answer: B

Question 45

Rearrange the parts of the sentence in correct order.

If you don't want

P: freedom either

Q: you can't have

R: to take responsibility

- A RPQ
- B RQP
- C PRQ
- 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.

Poverty means _____ of basic necessities such as food, house, clean drinking water, shelter, toilet, etc. Poverty is mostly _____ in developing countries such as India, Bangladesh, Africa, Latin America, etc. Poor people stay in underprivileged living environment. Without _____ food and nutrition, many poor people suffer from malnutrition. Without clean drinking water, they are forced to either stay thirsty or drink unclean water. Young children are seen engaged as child labourers. Without proper _____ and toilets, they are forced to _____ in open fields. Homeless people have no choice but to live in the open.

Question 46

Poverty means _____ of basic necessities

- A deprivation
- B appreciation
- C indulgence
- D presentation

Answer: A

Question 47

Poverty is mostly _____ in developing countries

- A irrelevant

- B** prevalent
- C** relevant
- D** malevolent

Answer: B

Question 48

Without _____ food and nutrition,

- A** unfit
- B** insufficient
- C** adequate
- D** useless

Answer: C

Question 49

Without proper _____ and toilets, they are forced

- A** edition
- B** inaction
- C** intuition
- D** sanitation

Answer: D

Question 50

to _____ in open fields.

- A** abdicate
- B** eliminate
- C** allocate
- D** defecate

Answer: D

Quant

Instructions

For the following questions answer them individually

Question 51

If a number is divided by 30 then it leaves 17 as a remainder. What will be the remainder when the same number is divided by 10?

- A 7
- B 3
- C 1
- D 2

Answer: A

Explanation:

The number when divided by 30 leaves remainder 17, \Rightarrow Number is of the form $= N = 30k + 17$, where k is a whole number.

Now, when N is divided by 10, we get : $\frac{30k+17}{10}$

$$= \left(\frac{30k}{10}\right) + \left(\frac{17}{10}\right)$$

$\because 30k$ is completely divisible by 10, hence the second term will determine the remainder.

\Rightarrow Remainder when 17 is divided by 10 is $17\%10 = 7$

\Rightarrow Ans - (A)

Question 52

What is the value of $162 + 172 + 182 + \dots + 252$?

- A 2325
- B 2465
- C 2105
- D 2070

Answer: D

Explanation:

Expression : $162 + 172 + 182 + \dots + 252$

The above series is an A.P. with first term, $a = 162$, last term, $l = 252$ and common difference, $d = 10$

Let number of terms be $= n$

$$\Rightarrow \text{Last term} = l = a + (n - 1)d$$

$$\Rightarrow 162 + (n - 1)10 = 252$$

$$\Rightarrow (n - 1)10 = 252 - 162$$

$$\Rightarrow (n - 1) = \frac{90}{10} = 9$$

$$\Rightarrow n = 9 + 1 = 10$$

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

$$= \frac{10}{2}(162 + 252)$$

$$= 5 \times 414 = 2070$$

=> Ans - (D)

Question 53

How many times digit '5' appears in the number from 1 to 100?

- A 20
- B 21
- C 19
- D 18

Answer: A

Explanation:

1 digit numbers : 0-9, => '5' appears only once = 1

2 digit numbers : 10-99, => Numbers with '5' at ten's place = 10 (50-59)

Numbers with '5' at unit's place = 9 (15,25,.....,95)

=> Total number of times digit '5' appears in the number from 1 to 100 = $1 + 10 + 9 = 20$

=> Ans - (A)

Question 54

What is the unit digit of 5124×1245 ?

- A 5
- B 1
- C 0
- D 2

Answer: C

Explanation:

Expression : 5124×1245

Unit digit of the above numbers is equal to the product of unit digits of each number = $4 \times 5 = 20$

Thus, the unit digit of $5124 \times 1245 = 0$

=> Ans - (C)

Question 55

What is the value of $[(a^{-2}b^3) \div (a^1b^{-1})] \times [(a^2b^{-4}) \div (a^{-1}b^2)]$?

- A b^2
- B $\frac{1}{b^2}$
- C a^2
- D a^2b^2

Answer: B

Explanation:

$$\text{Expression : } [(a^{-2}b^3) \div (a^1b^{-1})] \times [(a^2b^{-4}) \div (a^{-1}b^2)]$$

$$= [(a)^{-2-1} \times (b)^{3+1}] \times [(a)^{2+1} \times (b)^{-4-2}]$$

$$= [(a)^{-3} \times (b)^4] \times [(a)^3 \times (b)^{-6}]$$

$$= (a)^{-3+3} \times (b)^{4-6}$$

$$= (a)^0 \times (b)^{-2} = (b)^{-2}$$

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

=> Ans - (B)

Question 56

Which of the following number is divisible by 11?

A 44433

B 45332

C 23581

D 59609

Answer: D

Explanation:

If the positive difference between the sum of even digits and odd digits (starting from unit's place) is divisible by 11, then the number is also divisible by 11.

$$(A) : 44433 = (3 + 4 + 4) - (3 + 4) = 11 - 7 = 4$$

$$(B) : 45332 = (2 + 3 + 4) - (3 + 5) = 9 - 8 = 1$$

$$(C) : 23581 = (1 + 5 + 2) - (8 + 3) = 8 - 11 = 3$$

$$(D) : 59609 = (9 + 6 + 5) - (0 + 9) = 20 - 9 = 11$$

In the above numbers, only in the last option, 11 is divisible by 11, hence 59609 is divisible by 11.

=> Ans - (D)

Question 57

A can do a piece of work in 20 days and B can do the same piece of work in 30 days. They start working together and work for 5 days and then both leave the work. C alone finishes the remaining work in 14 days. In how many days will C alone finish the whole work?

A 24

B 18

C 36

D 42

Answer: A

Explanation:

Let total work is L.C.M. (20,30) = 60 units

A alone can complete the work in 20 days, => A's efficiency = $\frac{60}{20} = 3$ units/day

Similarly B's efficiency = $\frac{60}{30} = 2$ units/day

Now, (A+B)'s 5 day's work = $(3 + 2) \times 5 = 25$ units

$$\text{Work left} = 60 - 25 = 35 \text{ units}$$

Now, 35 units of work is completed by C alone in 14 days.

$$\Rightarrow \text{C's efficiency} = \frac{35}{14} = 2.5 \text{ units/day}$$

$$\therefore \text{Days required by C alone to complete the work} = \frac{60}{2.5} = 24 \text{ days}$$

\Rightarrow Ans - (A)

Question 58

P, Q and R undertook a work for Rs 48000. Together P and Q complete $\frac{5}{12}$ th part of the work. What is the share (in Rs) of R?

A 21000

B 28000

C 27000

D 31000

Answer: B

Explanation:

Let total work be 1 unit and P and Q complete $\frac{5}{12}$ th part of the work.

$$\Rightarrow \text{Work done by R} = 1 - \frac{5}{12} = \frac{7}{12}$$

$$\Rightarrow \text{Ratio of work done by (P+Q) and R} = 5:7$$

$$\Rightarrow \text{R's share} = \frac{7}{(5+7)} \times 48,000$$

$$= 7 \times 4,000 = \text{Rs. } 28,000$$

\Rightarrow Ans - (B)

Question 59

The length of two parallel sides of a trapezium are 30 cm and 40 cm. If the area of the trapezium is 350 cm², then what is the value (in cm) of its height?

A 8

B 10

C 15

D 12

Answer: B

Explanation:

Sum of two parallel sides of a trapezium = $30 + 40 = 70$ cm

Let height = h cm

$$\Rightarrow \text{Area of trapezium} = \frac{1}{2} \times h \times (\text{sum of parallel sides})$$

$$\Rightarrow \frac{1}{2} \times (h) \times (70) = 350$$

$$\Rightarrow \frac{h}{2} = \frac{350}{70} = 5$$

$$\Rightarrow h = 5 \times 2 = 10 \text{ cm}$$

=> Ans - (B)

Question 60

If the difference between discount of 35% and two successive discounts of 20% on a certain bill is Rs 3, then what is the amount (in Rs) of the bill?

- A 250
- B 300
- C 350
- D 400

Answer: B

Explanation:

Let amount of the bill = Rs. $100x$

$$\begin{aligned} \text{I : Amount after discount of 35\%} &= 100x - \left(\frac{35}{100} \times 100x\right) \\ &= 100x - 35x = 65x \end{aligned}$$

$$\begin{aligned} \text{II : Amount after first discount of 20\%} &= 100x - \left(\frac{20}{100} \times 100x\right) \\ &= 100x - 20x = 80x \end{aligned}$$

$$\begin{aligned} \text{Amount after second discount of 20\%} &= 80x - \left(\frac{20}{100} \times 80x\right) \\ &= 80x - 16x = 64x \end{aligned}$$

According to ques, => $65x - 64x = 3$

$$\Rightarrow x = 3$$

\therefore Amount of the bill = $100 \times 3 = \text{Rs. } 300$

=> Ans - (B)

Question 61

If a shopkeeper marks the price of goods 40% more than their cost price and allows a discount of 40%, then what is his gain or loss percent?

- A 16%, Loss
- B 16%, Profit
- C 10%, Loss
- D 12%, Profit

Answer: A

Explanation:

Let cost price of the article = Rs. 100

$$\begin{aligned} \Rightarrow \text{Marked price} &= 100 + \left(\frac{40}{100} \times 100\right) \\ &= 100 + 40 = \text{Rs. } 140 \end{aligned}$$

Discount % = 40%

$$\Rightarrow \text{Selling price} = 140 - \left(\frac{40}{100} \times 140\right)$$

$$= 140 - 56 = \text{Rs. } 84$$

$$\therefore \text{Loss \%} = \frac{(100-84)}{100} \times 100 = 16\%$$

=> Ans - (A)

Question 62

The ratio of two positive numbers is 9 : 11. Their product is 6336. What is the smallest number?

A 32

B 72

C 88

D 48

Answer: B

Explanation:

Let the two numbers be $9x$ and $11x$ respectively.

$$\text{Product} = 9x \times 11x = 6336$$

$$\Rightarrow 99x^2 = 6336$$

$$\Rightarrow x^2 = \frac{6336}{99} = 64$$

$$\Rightarrow x = \sqrt{64} = 8$$

$$\therefore \text{Smaller number} = 9 \times 8 = 72$$

=> Ans - (B)

Question 63

B starts some business by investing Rs 90000. After 4 months, D joins business by investing Rs 80000. At the end of the year, in what ratio will they share the profit?

A 10 : 7

B 9 : 4

C 27 : 16

D 7 : 3

Answer: C

Explanation:

B invested Rs. 90,000 for 12 months and D invested Rs. 80,000 for 8 months

$$\text{Ratio of profits of } B : D = (12 \times 90,000) : (8 \times 80,000)$$

$$= 108 : 64$$

$$= 27 : 16$$

\therefore At the end of the year, they will share the profit in the ratio = 27 : 16

=> Ans - (C)

Question 64

Average of 9 numbers is 20. If a number 30 is also included, then what will be the average of these 10 numbers?

- A** 20.5
- B** 21
- C** 19.5
- D** 21.5

Answer: B

Explanation:

Average of 9 numbers = 20

=> Total sum of the numbers = $(20 \times 9) = 180$

New included number = 30

New average = $\frac{180+30}{10}$

= $\frac{210}{10} = 21$

=> Ans - (B)

Question 65

By selling 50 metres of cloth, a person gains the cost price of 20 metres of cloth. What is his gain percent?

- A** 40
- B** 25
- C** 20
- D** 10

Answer: A

Explanation:

Let cost price of 1 m cloth = Rs. x and selling price of 1 m cloth = Rs. y

=> Profit by selling 50 m cloth = Rs. $50(y - x)$

According to ques,

=> $50(y - x) = 20x$

=> $5y - 5x = 2x$

=> $5y = 2x + 5x = 7x$

=> $\frac{x}{y} = \frac{5}{7}$

Let $x = 5$ and $y = 7$

∴ Gain percent = $\frac{(y-x)}{x} \times 100$

= $\frac{(7-5)}{5} \times 100$

= $2 \times 20 = 40\%$

=> Ans - (A)

Question 66

If some articles are bought at Rs 10 each and sold at Rs 7 each, then what is the loss percentage?

- A 60
- B 16.67
- C 25
- D 30

Answer: D

Explanation:

Cost price of articles = Rs. 10 and selling price = Rs. 7

$$\begin{aligned}\therefore \text{Loss percent} &= \frac{(C.P.-S.P.)}{C.P.} \times 100 \\ &= \frac{(10-7)}{10} \times 100 \\ &= 3 \times 10 = 30\% \\ &\Rightarrow \text{Ans - (D)}\end{aligned}$$

Question 67

A man saves 30% of his income in 1 year. If he wants to save the same amount in 8 months, then by how much percentage should he increase his monthly savings?

- A 20
- B 30
- C 40
- D 50

Answer: D

Explanation:

Let monthly income of man = Rs. 100

$$\Rightarrow \text{Monthly savings} = \frac{30}{100} \times 100 = \text{Rs. } 30$$

$$\text{Yearly savings} = 30 \times 12 = \text{Rs. } 360$$

Now, income in 8 months = Rs. 800

$$\text{Saving the same amount, his new monthly savings} = \frac{360}{800} \times 100 = \text{Rs. } 45$$

$$\begin{aligned}\therefore \text{Increase in monthly savings} &= \frac{(45-30)}{30} \times 100 \\ &= \frac{15}{3} \times 10 = 50\%\end{aligned}$$

\Rightarrow Ans - (D)

Question 68

A man spends 80% of his income and saves the rest. If his income and spending both increases by 10%, then what is the percentage change in his savings?

- A 10% increase

- B** 5% decrease
- C** 5% increase
- D** 15% decrease

Answer: A

Explanation:

Let income of man = Rs. 100

$$\text{Money spent} = \frac{80}{100} \times 100 = \text{Rs. } 80$$

$$\Rightarrow \text{Money saved} = (100 - 80) = \text{Rs. } 20$$

$$\text{If his income and spending both increases by 10\%, } \Rightarrow \text{New income} = 100 + \left(\frac{10}{100} \times 100\right) = \text{Rs. } 110$$

$$\text{and new amount spent} = 80 + \left(\frac{10}{100} \times 80\right) = \text{Rs. } 88$$

$$\Rightarrow \text{Money saved} = (110 - 88) = \text{Rs. } 22$$

$$\therefore \text{Percentage increase in his savings} = \frac{(22-20)}{20} \times 100$$

$$= 2 \times 5 = 10\%$$

\Rightarrow Ans - (A)

Question 69

A car travels at a speed of 25 m/s for 8 hours. What is the distance (in km) travelled by the car?

- A** 360
- B** 720
- C** 450
- D** 900

Answer: B

Explanation:

$$\text{Speed of car} = 25 \text{ m/s} = \left(25 \times \frac{18}{5}\right) = 90 \text{ km/hr}$$

Time taken = 8 hours

$$\Rightarrow \text{Distance covered} = \text{speed} \times \text{time}$$

$$= 90 \times 8 = 720 \text{ km}$$

\Rightarrow Ans - (B)

Question 70

A 450 meter long train crosses a bridge 650 meters long in 36 seconds. What is speed (in km/hr) of the train?

- A** 110
- B** 125
- C** 150
- D** 95

Answer: A

Explanation:

Length of train = 450 m and length of bridge = 650 m

Time taken = 36 seconds

=> Speed = distance/time

$$= \frac{(450+650)}{36}$$

$$= \frac{1100}{36} = \frac{275}{9} \text{ m/s}$$

$$= \frac{275}{9} \times \left(\frac{18}{5}\right) \text{ km/hr}$$

$$= 55 \times 2 = 110 \text{ km/hr}$$

=> Ans - (A)

Question 71

The population of a town increases at the rate of 15% per annum. If the present population is 108445 of town, then what was the population 2 years ago?

A 72000

B 79000

C 82000

D 85000

Answer: C

Explanation:

Let population 2 years ago = $100x$

Population after 1st year increasing by 15% = $100x \times \left(\frac{115}{100}\right) = 115x$

Population after 2nd year = $115x \times \left(\frac{115}{100}\right) = 132.25x$

According to ques,

$$\Rightarrow 132.25x = 108445$$

$$\Rightarrow x = \frac{108445}{132.25} = 820$$

∴ Population 2 years ago = $100 \times 820 = 82000$

=> Ans - (C)

Instructions

The table given below shows the number of customers (in thousands) visiting 2 shopping complexes A and B from January 2017 to June 2017.

Question 72

What was the percentage change in number of customers to complex B from March to April?

Month	Number of Customers (in thousands)	
	Complex-A	Complex-B
January	20	22
February	25	24
March	15	20
April	25	28
May	14	20
June	20	15

- A 20
- B 40
- C 28
- D 56

Answer: B

Explanation:

Number of customers to complex B (in 000's) in March = 20

Number of customers to complex B (in 000's) in April = 28

$$\Rightarrow \text{Percentage increase} = \frac{(28-20)}{20} \times 100$$

$$= 8 \times 5 = 40\%$$

\Rightarrow Ans - (B)

Question 73

What is the maximum difference (in thousands) between the numbers of customers in the 2 complexes among the given months?

Month	Number of Customers (in thousands)	
	Complex-A	Complex-B
January	20	22
February	25	24
March	15	20
April	25	28
May	14	20
June	20	15

- A 5
- B 6
- C 8

D 4

Answer: B

Explanation:

Difference (in thousands) between the numbers of customers in the 2 complexes in :

January : $22 - 20 = 2$

February : $25 - 24 = 1$

March : $20 - 15 = 5$

April : $28 - 25 = 3$

May : $20 - 14 = 6$ **[Max]**

June : $20 - 15 = 5$

=> Ans - (B)

Question 74

What is the total number of customers (in thousands) in the 2 complexes in the month of April?

Month	Number of Customers (in thousands)	
	Complex-A	Complex-B
January	20	22
February	25	24
March	15	20
April	25	28
May	14	20
June	20	15

A 52

B 53

C 50

D 56

Answer: B

Explanation:

Number of customers to complex A (in 000's) in April = 25

Number of customers to complex B (in 000's) in April = 28

=> Total number of customers (in thousands) in the 2 complexes in the month of April = $25 + 28 = 53$

=> Ans - (B)

Question 75

What is the average number of customers (in thousands) in complex B from February to May?

Month	Number of Customers (in thousands)	
	Complex-A	Complex-B
January	20	22
February	25	24
March	15	20
April	25	28
May	14	20
June	20	15

- A 22
- B 24
- C 23
- D 25

Answer: C

Explanation:

Total number of customers (in thousands) in complex B from February to May

$$= 24 + 20 + 28 + 20 = 92$$

$$\Rightarrow \text{Required average in 4 months} = \frac{92}{4} = 23$$

\Rightarrow Ans - (C)

General Awareness

Instructions

For the following questions answer them individually

Question 76

What is the income of all the residents of the country called?

- A Per capita income
- B Average income
- C Total income
- D None of these

Answer: C

Explanation:

The income of all the residents of the country is called **Total income**.

Per capita income is the average income earned per person in a given area.

\Rightarrow Ans - (C)

Question 77

What are the deposits in the bank accounts that can be withdrawn on demand called?

- A** Time deposits
- B** Demand deposits
- C** Withdrawal
- D** Accumulations

Answer: B

Explanation:

The deposits in the bank accounts that can be withdrawn on demand are called **Demand deposits**.

=> Ans - (B)

Question 78

Under which article the President declares 'Presidents Rule' in India?

- A** Article 100
- B** Article 356
- C** Article 401
- D** Article 90

Answer: B

Explanation:

Under **Article 356** the President declares 'Presidents Rule' in India.

=> Ans - (B)

Question 79

In which form of government, each adult citizen must have one vote and each vote must have one value?

- A** Aristocratic
- B** Monarchic
- C** Democratic
- D** Autocratic

Answer: C

Explanation:

In a **Democratic** government, each adult citizen must have one vote and each vote must have one value.

=> Ans - (C)

Question 80

Where was the first capital of Chalukyas?

- A** Madras
- B** Aihole
- C** Hyderabad
- D** Kanchipuram

Answer: B

Explanation:

The first capital of Chalukyas was in **Aihole**.

=> Ans - (B)

Question 81

Who raised the slogan "Swaraj is my birth right and I shall have it"?

- A** Mahatma Gandhi
- B** Subhash Chandra Bose
- C** Lala Lajpat Rai
- D** Bal Gangadhar Tilak

Answer: D

Explanation:

Bal Gangadhar Tilak raised the slogan "Swaraj is my birth right and I shall have it".

=> Ans - (D)

Question 82

Why Earth is called the blue planet?

- A** Because of two-thirds surface covered by water
- B** Because of water laden clouds in the atmosphere
- C** Because of pollution in the atmosphere
- D** None of these

Answer: A

Explanation:

Earth is called the blue planet because two-thirds of its surface is covered by water.

=> Ans - (A)

Question 83

What is the shape of the Pacific Ocean?

- A** Almost Circular

- B** S' shaped
- C** Almost Triangular
- D** None of these

Answer: C

Explanation:

The Pacific Ocean is **triangular** in shape.

=> Ans - (C)

Question 84

Heat is which component of habitat?

- A** Biotic component
- B** Abiotic component
- C** Both Biotic and Abiotic component
- D** Neither of the two components

Answer: B

Explanation:

Heat is the **abiotic component** of habitat.

=> Ans - (B)

Question 85

Pepsin digests _____.

- A** proteins in stomach
- B** carbohydrates in mouth
- C** fats in duodenum
- D** minerals in ileum

Answer: A

Explanation:

Pepsin is an enzyme which digests **proteins** in stomach.

=> Ans - (A)

Question 86

Anemia is related to _____.

- A** iodine deficiency
- B** calcium deficiency
- C** iron deficiency
- D** food poisoning

Answer: C

Explanation:

Deficiency of **iron** causes Anemia.

=> Ans - (C)

Question 87

How many terminals does an electric cell has?

A 1

B 2

C 3

D 4

Answer: B

Explanation:

An electric cell has **two** terminals,i.e. positive and negative.

=> Ans - (B)

Question 88

The size of the image formed by a plane mirror is always ____ to/than the object.

A Equal

B Greater

C Smaller

D None of these

Answer: A

Explanation:

The size of the image formed by a plane mirror is always **equal** to the object.

=> Ans - (A)

Question 89

Microsoft excel is also called ____.

A Document

B Table

C Spreadsheet

D Label

Answer: C

Explanation:

Microsoft excel is also called **spreadsheet**.

=> Ans - (C)

Question 90

_____ the correct formula for ammonium phosphate.

- A $N_4H_6PO_4$
- B $(NH_4)_3PO$
- C $(NH_4)_3PO_4$
- D $(NH_4)_2PO_4$

Answer: C

Explanation:

The correct formula for ammonium phosphate is $(NH_4)_3PO_4$

=> Ans - (C)

Question 91

Law of Triad was proposed by _____.

- A Newland
- B Rutherford
- C Mendeleev
- D Dobereiner

Answer: D

Explanation:

Law of Triads that suggested a relationship between the properties of elements and their atomic weights was proposed by **Dobereiner**.

=> Ans - (D)

Question 92

What are the microorganisms that breakdown the dead remains and waste product of organisms called?

- A Consumers
- B Producers
- C Decomposers
- D None of these

Answer: C

Explanation:

Decomposers breakdown the dead remains and waste product of organisms.

=> Ans - (C)

Question 93

What is the rate of Krishi Kalyan Cess which was proposed in budget 2016?

- A 0.5%
- B 2%
- C 5%
- D 0.25%

Answer: A

Explanation:

The rate of Krishi Kalyan Cess which was proposed in budget 2016 was **0.5%**

=> Ans - (A)

Question 94

What was invented by 'Zacharias Janssen'?

- A Telescope
- B Microscope
- C Stethoscope
- D Periscope

Answer: B

Explanation:

Zacharias Janssen invented the **microscope** in 1590.

=> Ans - (B)

Question 95

"Hitting below the belt" is a phrase associated with which sports?

- A Boxing
- B Cricket
- C Hockey
- D Baseball

Answer: A

Explanation:

"Hitting below the belt" is associated with **Boxing**.

=> Ans - (A)

Question 96

The Vedas, Upanishads, Puranas and Dharmasutras are all written in which language?

- A Hindi
- B Prakrit
- C Pali

D Sanskrit

Answer: D

Explanation:

The Vedas, Upanishads, Puranas and Dharmasutras are all written in **Sanskrit** language.

=> Ans - (D)

Question 97

Which airport in India is ranked first in customer satisfaction Index Survey conducted for the period of Jan-June 2017?

A Raipur's Swami Vivekananda Airport

B New Delhi's Indira Gandhi Airport

C Lucknow's Chaudhary Charan Singh Airport

D Mumbai's Chhatrapati Shivaji Airport

Answer: A

Explanation:

Raipur's Swami Vivekananda Airport is ranked first in customer satisfaction Index Survey conducted for the period of Jan-June 2017

=> Ans - (A)

Question 98

Who is the author of book named "India 2020: A vision for the new Millennium"?

A M.V. Kamath

B Kiran Bedi

C Dr. A.P.J. Abdul Kalam

D A.K Damodaran

Answer: C

Explanation:

Dr. A.P.J. Abdul Kalam wrote the book "India 2020: A vision for the new Millennium" in 1998.

=> Ans - (C)

Question 99

Where was the first International Agrobiodiversity Congress held?

A Prague

B New Delhi

C Kuming

D Thimpu

Answer: B

Explanation:

The first International Agrobiodiversity Congress was held in **New Delhi** in 2016.

=> Ans - (B)

Question 100

Petrapole Integrated Check Post is the South Asia's biggest land port that exists between India and _____.

- A** Pakistan
- B** Nepal
- C** Bangladesh
- D** Afghanistan

Answer: C

Explanation:

Petrapole Integrated Check Post is the South Asia's biggest land port that exists between India and **Bangladesh**.

=> Ans - (C)