

SSC CHSL 4 March 2018 Morning Shift

General Awareness

Instructions

For the following questions answer them individually

Question 1

The competitive position of a company can be improved by_____.

- A increasing the selling price
- B reducing the margin of profit
- C ignoring competitors
- D understanding and fulfilling customers' needs

Answer: D

Question 2

In Deficit financing, the government borrows money from which organisation?

- A International Monetary Fund
- B Ministry of Finance
- C Reserve Bank of India
- D World Trade Organization

Answer: C

Question 3

Which of the following information is found in Ashoka's inscriptions?

- A Life story
- B Internal policy
- C Foreign policy
- D All option are correct.

Answer: D

Question 4

Bahadur Shah, the ruler of Gujarat was killed in a conflict with which of the following?

- A Dutch
- B English
- C Portuguese
- D French

Answer: C

Question 5

Which part of the Earth has the abundance of nickel and iron?

- A SIAL
- B SIMA
- C NIFE
- D No option is correct.

Answer: C

Question 6

Konkan coast is stretched from where to where?

- A Goa to Kochi
- B Goa to Diu
- C Daman to Goa
- D Goa to Mumbai

Answer: D

Question 7

Which of the following pair is NOT matched correctly?

- A Bharatanatyam - Tamilnadu
- B Kathakali - Karnataka
- C Odissi - Odisha
- D Kuchipudi - Andhra Pradesh

Answer: B

Question 8

How much water has been allowed to India for irrigation, power generation and transport purposes from Indus river?

- A 10%
- B 15%
- C 20%
- D 25%

Answer: C

Question 9

Who among the following was NOT one of the recipients of Dronacharya Award for the year 2017?

- A R. Gandhi
- B Prashant Singh
- C Heera Nand Kataria
- D Sanjay Chakarvorthy

Answer: B

Question 10

China has the longest border with which of the following country?

- A Russia

- B India
- C Myanmar
- D Mongolia

Answer: D

Question 11

Which of the following statement(s) is/are CORRECT?

- I. Bakelite is a good conductor of heat.
- II. Bakelite is a poor conductor of electricity.
- III. Bakelite can be softened by heating.

- A Only I and II
- B Only I and III
- C Only II
- D All I, II and III

Answer: C

Question 12

- Which of the following has minimum ignition temperature?

- A Petrol
- B Plastic
- C Wood
- D Paper

Answer: A

Question 13

- Which Article of Indian Constitution empowers Indian Parliament to amend the constitution?

- A Article 368
- B Article 252

C Article 254

D Article 256

Answer: A

Question 14

- Which part of Indian constitution deals with Union Territories?

A Part VI

B Part VII

C Part VIII

D Part IX

Answer: C

Question 15

- The rhythmic contraction of the lining of muscles of canal to push the food along the gut is called _____.

A peristalsis

B facilitation

C guttation

D No option is correct.

Answer: A

Question 16

- Which of the following represents the pair of sex chromosomes in men?

A XY

B XX

C YY

D No option is correct.

Answer: A

Question 17

- How much amount has been reserved for the 'National Biopharma Mission' named 'i3' by the Government of India?

- A USD 250 million
- B USD 350 million
- C USD 500 million
- D USD 150 million

Answer: A

Question 18

- Scientists of which country have developed working human skeletal muscle from stem cells in the laboratory for the first time?

- A China
- B Japan
- C India
- D United States of America

Answer: D

Question 19

In July 2017, how much revised cost was approved for the cost Socio Economic and Caste Census 2011 (SECC 2011) ?

- A Rs. 4893 crore
- B Rs. 7983 crore
- C Rs. 9893 crore
- D Rs. 10,000 crore

Answer: A

Question 20

- From May 2017, the Real Estate Act has come into effect. Under the Act, the Regulatory Authorities are required to dispose of complaints in how many days?

A 60

B 30

C 45

D 90

Answer: A

Question 21

- A body of mass 4 kg accelerates from 15 m/s to 25 m/s in 5 seconds due to the application of a force on it. Calculate the magnitude of this force (in N).

A 32

B 8

C 16

D 64

Answer: B

Question 22

- During _____ motion of an object along a straight line, the change in velocity of the object for any time interval is zero.

A linear

B translational

C equilibrium

D uniform

Answer: D

Question 23

- The tropical rainforests _____.

- A are dry and hot
- B are in the coastal regions only
- C are mostly covered in snow
- D get plenty of rainfall

Answer: D

Question 24

- Which of the statements given below are correct?

- A) Valentino Rossi won the Motorcycle race 2017 Dutch TT MotoGP.
- B) United Kingdom hosted the Table Tennis 2017 ITTF Women's World Cup.
- C) In 2017, Glenn Maxwell captained the IPL team Kings XI Punjab.

- A A and B
- B B and C
- C A and C
- D A, B and C

Answer: C

Question 25

- In Microsoft Word, under character formatting _____ is used to underline some particular text.

- A Font style
- B Underline
- C Effects
- D Size

Answer: B

English

Instructions

For the following questions answer them individually

Question 26

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'.

Due to the (1) snow the (2) marks was unrecognisable. (3) No error (4)

A 1

B 2

C 3

D 4

Answer: C

Question 27

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'.

Acceptance is not about allowing everything to occur or to go on, (1) it is neither related to passivity and weakness, (2) nor is it about confirmation or mediocrity.

(3) No error (4)

A 1

B 2

C 3

D 4

Answer: C

Question 28

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.

She jumped _____ the bar table.

A upon

B up

C in

D into

Answer: A

Question 29

- 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.

Sun is a _____ perfect sphere of hot plasma, with internal convective motion that generates a magnetic field.

A nearly

B near

C about

D more

Answer: A

Question 30

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

Hybrid

A Homogeneous

B Composite

C Pure

D Love

Answer: B

Question 31

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

Discreet

A Described

B Careful

C Rash

D Mundane

Answer: B

Question 32

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

Heed

A Care

B Caution

C Attention

D Neglect

Answer: D

Question 33

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

Articulate

A Unclear

B Enunciate

C Eloquent

D Coherent

Answer: A

Question 34

- Rearrange the parts of the sentence in correct order.

All the sound reasons

P : ever given for conserving

Q : to the conservation of wildlife

R : other natural resources apply

A PRQ

B RQP

C PQR

D QRP

Answer: A

Question 35

- A sentence has been given in Active/Passive Voice. Out of the four given alternatives, select the one which best expresses the same sentence in Passive/Active Voice.

She will finish the thesis in a fortnight.

A The thesis would be finished in a fortnight by her.

B The thesis will finished by her in a fortnight.

C The thesis will be finished by her in a fortnight.

D A fortnight is required to finish the thesis.

Answer: B

Question 36

- A sentence has been given in Direct/Indirect Speech. Out of the four given alternatives, select the one which best expresses the same sentence in Indirect/Direct Speech.

“I know her well” said Manisha.

- A Manisha said that she knew her well.
- B Manisha said if she knows her well.
- C Manisha said that she knows her.
- D Manisha says that she knew her well.

Answer: A

Question 37

- 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 Commiety
- B Committee
- C Comittee
- D Commitee

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.

Now, what exactly does big business want? Though they cite some _____ worded performance indicators to compile the index, the true intention appears to be something _____. They want land at throwaway prices even _____ it is fertile agriculture land; they want licenses to be issued immediately even if the proposed activities are likely to result in environmental _____; they want labour laws to be favourable to them so it becomes easy to hire _____ fire and exploit workers; and they want the government to respond favourably to their 'bailout' demands from time to time so they can transfer their risk on to taxpayers, notwithstanding the fact that they enjoyed their profits during their heyday.

Question 38

they cite some _____ worded performance

- A cleverly
- B cleverer
- C cleverest
- D cleverness

Answer: A

Question 39

something _____. They want land at

A other

B extra

C added

D else

Answer: D

Question 40

prices even _____ it is fertile agriculture land;

A if

B then

C but

D also

Answer: A

Question 41

environmental _____; they want labour laws

A degrade

B degrading

C degraded

D degradation

Answer: D

Question 42

easy to hire _____ fire and exploit

A and

B if

C thus

D so

Answer: A

Instructions

For the following questions answer them individually

Question 43

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

After one's own heart

A Sharing or having one's tastes or views.

B Infatuation with a person which is not reciprocated.

C Memorise some thing by heart.

D Don't have the courage to do something bad for a good person.

Answer: A

Question 44

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

Pull the wool over someone's eyes

A To protect someone.

B To keep oneself warm.

C Deceive someone by telling lies.

D To pretend to be blind to the other person's bad behaviour.

Answer: C

Question 45

- In the following question, out of the four alternatives, select the alternative which is the best substitute of the words/sentence.

A warning of impending danger

- A Naive
- B Monition
- C Obtuse
- D Daft

Answer: B

Question 46

- In the following question, out of the four alternatives, select the alternative which is the best substitute of the words/sentence.

Concerned with beauty or the appreciation of beauty

- A Foul
- B Aesthetic
- C Hideous
- D Gross

Answer: B

Question 47

- 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".

We sat on the floor to eat dinner and he (appreciate) the fresh food my mother served.

- A had appreciated
- B appreciated
- C will appreciate

D no improvement

Answer: B

Question 48

- 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".

We sat there (enjoy) the view.

A enjoyed

B enjoying

C enjoys

D no improvement

Answer: B

Question 49

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.

Life is never meant to

A-country like India

B-be easy, especially if you

C-live in a developing

A BAC

B ACB

C BCA

D ABC

Answer: C

Question 50

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

A stridancy

B stridensy

C stridansy

D stridency

Answer: A

Reasoning

Instructions

For the following questions answer them individually

Question 51

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

Train : Track :: ? : ?

A Car : Four wheeler

B Aeroplane : Fly

C Truck : Road

D Car : Speed

Answer: C

Explanation:

Expression = Train : Track :: ? : ?

The first is the mode of transmission and the second is the medium it runs on, i.e. train runs on track, similarly truck runs on roads.

=> Ans - (C)

Question 52

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

53 : 35 :: ? : ?

A 37 : 73

B 42 : 22

C 16 : 62

D 54 : 43

Answer: A

Explanation:

Expression = 53 : 35 :: ? : ?

The second number is the reverse of the first number.

Similar pattern is observed only in **37 : 73**, where 73 is reverse of 37.

=> Ans - (A)

Question 53

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

PAL : RDP :: MRF : ?

A FAJ

B KUC

C OUJ

D RPT

Answer: C

Explanation:

Expression = PAL : RDP :: MRF : ?

The pattern followed is :

P	A	L
(+2)	(+3)	(+4)
R	D	P

Similarly, for MRF : **OUJ**

M	R	F
(+2)	(+3)	(+4)
O	U	J

=> Ans - (C)

Question 54

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

- A Reptile - Lizard
- B Mammal - Deer
- C Mammal - Elephant
- D Rodent - Rabbit

Answer: D

Explanation:

Second is one of the types of first, Lizard is a reptile, deer and elephants are mammals, while rabbit belongs to the lagomorpha family, hence it is the odd one out.

=> Ans - (D)

Question 55

In the following question, four number pairs are given. The number on left side of (-) is related to the number of the right side of (-) with some Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.

- A 20 - 30
- B 35 - 45
- C 45 - 55
- D 25 - 30

Answer: D

Explanation:

The difference between each of the pair of numbers is 10.

But in the last option => $30 - 25 = 5$

Thus, (25 - 30) is the odd one out.

=> Ans - (D)

Question 56

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

A RQP

B XWV

C ZYX

D AZX

Answer: D

Explanation:

(A) : R (-1 letter) = Q (-1 letter) = P

(B) : X (-1 letter) = W (-1 letter) = V

(C) : Z (-1 letter) = Y (-1 letter) = X

(D) : A (-1 letter) = Z (-2 letters) = X

=> Ans - (D)

Question 57

From the given alternatives, according to dictionary, which word will come at **THIRD** position?

1. Chimney

2. Cherry

3. Childish

4. Chess

5. Chest

A Chest

B Childish

C Chimney

D Chess

Answer: A

Explanation:

As per the order of dictionary :

= Cherry -> Chess -> Chest -> Childish -> Chimney

Thus, the third word = **Chest**

=> Ans - (A)

Question 58

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

19, 9, 28, 37, 65, ?

- A 99
- B 97
- C 102
- D 113

Answer: C

Explanation:

The given series is a type of Fibonacci series where the previous two numbers are added to get the next number.

$$19 + 9 = 28$$

$$9 + 28 = 37$$

$$28 + 37 = 65$$

$$37 + 65 = 102$$

=> Ans - (C)

Question 59

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

I, L, O, R, ?

- A S
- B T
- C U
- D V

Answer: C

Explanation:

Series : I, L, O, R, ?

The pattern followed is :

$$I (+3 \text{ letters}) = L (+3 \text{ letters}) = O (+3 \text{ letters}) = R (+3 \text{ letters}) = U$$

=> Ans - (C)

Question 60

Present ages of Ankur and his sister are in the ratio of 4 : 3. After 6 years ratio of ages of Ankur's sister and his brother will be 3 : 2. If the present age of his brother is 32 years, then after 3 years what will be the age (in years) of Ankur?

A 71

B 68

C 70

D 65

Answer: A

Explanation:

Ankur's brother's age 6 years from now = $32 + 6 = 38$ years

Ratio of Ankur's sister and his brother after 6 years = $3 : 2$

\Rightarrow Ankur's sister's age 6 years from now = $\frac{3}{2} \times 38 = 57$ years

\Rightarrow Ankur's sister's present age = $57 - 6 = 51$ years

Ratio of Ankur and his sister's present age = $4 : 3$

\Rightarrow Ankur's present age = $\frac{4}{3} \times 51 = 68$ years

\therefore Ankur's age 3 years from now = $68 + 3 = 71$ years

\Rightarrow Ans - (A)

Question 61

From the given alternatives, select the word which CANNOT be formed using the letters of the given word.

Statement

A Men

B Same

C Start

D State

Answer: C

Explanation:

The word STATEMENT does not contain any 'R', thus the term **Start** cannot be formed.

=> Ans - (C)

Question 62

In a certain code language, "FRAME" is written as "IUDPH". How is "ROYAL" written in that code

A XVTGM

B MRDXO

C XIDPH

D URBDO

Answer: D

Explanation:

"FRAME" is written as "IUDPH"

The pattern followed is :

F	R	A	M	E
(+3)	(+3)	(+3)	(+3)	(+3)
I	U	D	P	H

Similarly, for ROYAL :

R	O	Y	A	L
(+3)	(+3)	(+3)	(+3)	(+3)
U	R	B	D	O

=> Ans - (D)

Question 63

- In a certain code language, '-' represents 'x', '÷' represents '+', '+' represents '÷' and 'x' represents '-'. Find the answer to the following question.

$$15 - 6 + 10 \times 3 \div 2 = ?$$

A 24

B 9

C 2

D 8

Answer: D

Explanation:

Expression : $15 - 6 + 10 \times 3 \div 2 = ?$

$$\equiv 15 \times 6 \div 10 - 3 + 2$$

$$= \frac{90}{10} - 1$$

$$= 9 - 1 = 8$$

\Rightarrow Ans - (D)

Question 64

The following equation is incorrect. Which two signs should be interchanged to correct the equation?

$$12 + 10 - 28 \div 7 \times 4 = 48$$

A - and \times

B \div and +

C - and \div

D \times and +

Answer: A

Explanation:

$$\text{Expression : } 12 + 10 - 28 \div 7 \times 4 = 48$$

(A) :- and \times

$$\equiv 12 + 10 \times 28 \div 7 - 4 = 48$$

$$\text{L.H.S.} = 12 + (10 \times \frac{28}{7}) - 4$$

$$= 12 + 40 - 4 = 48 = \text{R.H.S.}$$

\Rightarrow Ans - (A)

Question 65

If $-4\$1 = 4$, $7\$-7 = 49$ and $3\$1 = -3$, then find the value of $-8\$-5 = ?$

A -1

B 92

C -40

D -69

Answer: C

Explanation:

Given : $-4\$1 = 4$, $7\$-7 = 49$ and $3\$1 = -3$

If we replace '\$' with ' \times ' and multiply the product with '-1', then we will get the desired result.

Eg :- $(-4 \times 1) \times (-1) = 4$

and $(7 \times -7) \times (-1) = 49$

and $(3 \times 1) \times (-1) = -3$

Similarly, $(-8 \times -5) \times (-1) = -40$

=> Ans - (C)

Question 66

Which of the following terms follows the trend of the given list?

ABABAbab, ABABabaB, ABAbabAB, ABabaBAB, AbabABAB, _____.

A aBABABab

B abaBABAB

C ABABAbab

D ABABabaB

Answer: B

Explanation:

Expression : ABABAbab, ABABabaB, ABAbabAB, ABabaBAB, AbabABAB, _____.

The pattern followed is that there is a combination of 4 'AB', in which there are 3 consecutive small terms starting from right end and shifting one place to the left.

Thus, in the missing term, the first three terms will be small = **abaBABAB**

=> Ans - (B)

Question 67

- A hiker walks 2 km South, then he turns West and walks for 4 km, then he turns North and walks for 5 km, then he turns to his right and walks for 4 km.

Where is he now with respect to his starting position?

A 7 km North

B 3 km North

C 3 km South

D 7 km South

Answer: B

Question 68

- In the question two statements are given, followed by two conclusions, I and II. You have to consider the statements to be true even if it seems to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follows from the given statements.

Statement I: No spaghetti are noodles

Statement II: Some food are spaghetti

Conclusion I: All noodles are food

Conclusion II: All food are noodles

A Only conclusion I follows

B Only conclusion II follows

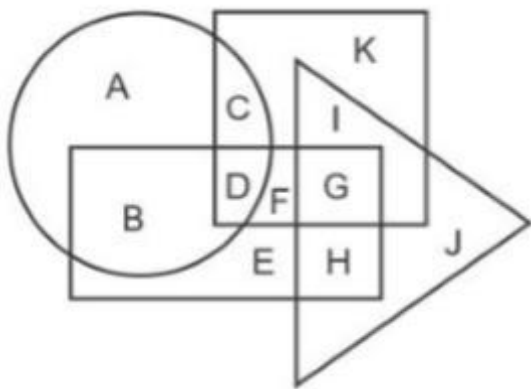
C Both conclusions I and II follow

D Neither conclusion I nor conclusion II follows

Answer: D

Question 69

In the following figure, rectangle represents Plumbers, circle represents Athletes, triangle represents Garners and square represents Cricketers. Which set of letters represents those who are Athletes as well as Cricketers?



A CD

B AB

C FG

D EH

Answer: A

Question 70

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

COT, DQU, ESV, FUW, ?

A GWY

B GVX

C GWX

D GVV

Answer: C

Explanation:

Series : COT, DQU, ESV, FUW, ?

The pattern followed in each letter of the terms is :

1st letter : C (+1 letter) = D (+1 letter) = E (+1 letter) = F (+1 letter) = G

2nd letter : O (+2 letters) = Q (+2 letters) = S (+2 letters) = U (+2 letters) = W

3rd letter : T (+1 letter) = U (+1 letter) = V (+1 letter) = W (+1 letter) = X

Thus, missing term = **GWX**

=> Ans - (C)

Question 71

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

49, 46, 43, 40, ?, 34

A 38

B 37

C 36

D 39

Answer: B

Explanation:

'3' is subtracted from all the numbers.

$$49 - 3 = 46$$

$$46 - 3 = 43$$

$$43 - 3 = 40$$

$$40 - 3 = 37$$

$$37 - 3 = 34$$

\Rightarrow Ans - (B)

Question 72

- In the following question, four groups of three numbers are given. In each group the second and third number are related to the first number by a Logic/Rule/Relation. Three are similar on basis of same Logic/Rule/Relation. Select the odd one out from the given alternatives.

A (1, 11, 1111)

B (2, 22, 4444)

C (4, 44, 4444)

D (8, 88, 8888)

Answer: B

Explanation:

The numbers are of the form : $(x, 11x, 1111x)$

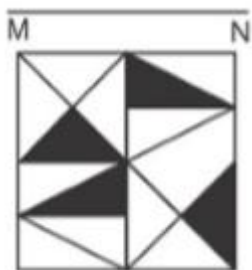
But in the second option, we have $= 1111 \times 2 = 2222 \neq 4444$

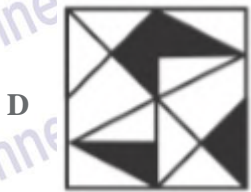
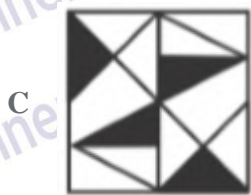
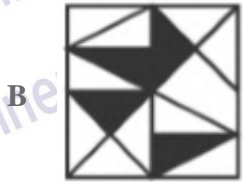
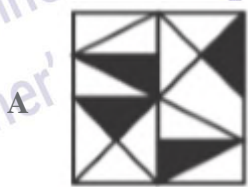
Thus, (2, 22, 4444) is the odd one out.

\Rightarrow Ans - (B)

Question 73

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

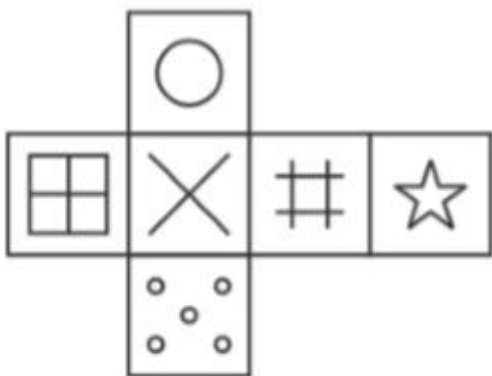




Answer: A

Question 74

Which of the following cube in the answer figure cannot be made based on the unfolded cube in the question figure?



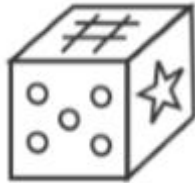
B



C



D



Answer: A

Question 75

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 S to 9. A letter from these matrices can be represented first by its row and next by its column, for example 'I.' can be represented by 21, 33 etc and 'Z' can be represented by 56, 98 etc. Similarly, you have to identify the set for the word 'TOMB'.

Matrix - I					
	0	1	2	3	4
0	I	K	L	L	K
1	G	F	E	F	F
2	H	L	B	A	F
3	I	A	I	L	I
4	E	D	F	M	A

Matrix - II					
	5	6	7	8	9
5	V	Z	U	R	O
6	R	W	N	S	O
7	Q	U	T	U	V
8	Q	T	N	P	X
9	Q	Y	V	Z	R

A 77,69,43,22

B 11,88,34,55

C 42,66,12,58

D 30,65,24,65

Answer: A

Explanation:

(A) : 77,69,43,22 = TOMB

(B) : $11,88,34,55 = \text{FPIV}$

(C) : $42,66,12,58 = \text{FWER}$

(D) : $30,65,24,65 = \text{IRFR}$

=> Ans - (A)

Quant

Instructions

For the following questions answer them individually

Question 76

Find the value $((49)^{\frac{3}{2}} + (49)^{\frac{-3}{2}})$

A $117549/343$

B $117550/343$

C $117649/343$

D $117650/343$

Answer: C

Explanation:

$$\text{Expression} = ((49)^{\frac{3}{2}} + (49)^{\frac{-3}{2}})$$

$$= ((7^2)^{\frac{3}{2}} + (7^2)^{\frac{-3}{2}})$$

$$= 7^3 + 7^{-3}$$

$$= 343 + \frac{1}{343}$$

$$= \frac{117649}{343}$$

=> Ans - (C)

Question 77

Calculate the total numbers of prime factors in the expression $(4)^{11} \times (5)^5 \times (3)^2 \times (13)^2$

A 30

B 31

C 3^3

D 32

Answer: B

Explanation:

$$\text{Expression : } (4)^{11} \times (5)^5 \times (3)^2 \times (13)^2$$

$$\text{Prime factorization} = (2)^{22} \times (5)^5 \times (3)^2 \times (13)^2$$

$$\text{Now, there are 4 distinct factors} = 2, 3, 5, 13$$

$$\text{Total number of prime factors} = 22 + 5 + 2 + 2 = 31$$

=> Ans - (B)

Question 78

Which of the following is the correct rationalize form of $\frac{15}{\sqrt{5+2}}$ = ?

A $5\sqrt{5} - 6$

B $5\sqrt{5} - 30$

C $15\sqrt{5} - 30$

D $45\sqrt{5} - 630$

Answer: C

Explanation:

$$\text{Expression : } \frac{15}{\sqrt{5+2}} = ?$$

Rationalizing the denominator, we get :

$$= \frac{15}{\sqrt{5+2}} \times \frac{(\sqrt{5}-2)}{(\sqrt{5}-2)}$$

$$= \frac{15(\sqrt{5}-2)}{5-4} = 15\sqrt{5} - 30$$

=> Ans - (C)

Question 79

Determine the value of 'x' if $x = \frac{(943+864)^2(943-864)^2}{(1886 \times 1728)}$

A 1

B 4

C 79

D 1789

Answer: A

Explanation:

$$\text{Expression : } x = \frac{(943+864)^2 - (943-864)^2}{(1886 \times 1728)}$$

Using, $a^2 - b^2 = (a + b)(a - b)$, where $a = (943 + 864)$ and $b = (943 - 864)$

$$= \frac{[(943+864) + (943-864)] \times [(943+864) - (943-864)]}{(1886 \times 1728)}$$

$$= \frac{(943+943) \times (864+864)}{(1886 \times 1728)}$$

$$= \frac{(1886) \times (1728)}{(1886 \times 1728)} = 1$$

=> Ans - (A)

Question 80

Which of the following options is/are CORRECT about the similarity of the two triangles?

- A The corresponding sides are proportional to each other.
- B The corresponding angles are equal.
- C The corresponding sides may or may not be equal to each other.
- D All option are correct.

Answer: D

Explanation:

If two triangles are similar, then the corresponding sides are proportional to each other. Also, the corresponding angles are equal, but the corresponding sides may or may not be equal to each other. Thus, all are correct.

=> Ans - (D)

Question 81

If the height of the equilateral triangle is $2\sqrt{3}$ cm, then determine the area (in cm^2) of the equilateral triangle.

- A 6
- B $2\sqrt{3}$
- C $4\sqrt{3}$

D 12

Answer: C

Explanation:

Let side of the equilateral triangle = s cm

$$\text{Median} = \text{Height of triangle} = 2\sqrt{3} = \frac{\sqrt{3}s}{2}$$

$$\Rightarrow s = 2 \times 2 = 4 \text{ cm}$$

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

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

$$= 4\sqrt{3} \text{ cm}^2$$

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

Question 82

Length and breadth of a rectangle are increased by 10% and 20% respectively. What will be the percentage increase in the area of rectangle?

A 30%

B 32%

C 28%

D 33%

Answer: B

Explanation:

Let both length and breadth of the rectangle be $l = 10$ cm and $b = 10$ cm

$$\text{Area of rectangle} = A = l \times b = 10 \times 10 = 100 \text{ cm}^2$$

$$\text{New length when it is increased by 10\%} = l' = 10 + \left(\frac{10}{100} \times 10\right) = 11 \text{ cm}$$

$$\text{Similarly, new breadth when it is increased by 20\%} = b' = 10 + \left(\frac{20}{100} \times 10\right) = 12 \text{ cm}$$

$$\Rightarrow \text{New area} = A' = 11 \times 12 = 132 \text{ cm}^2$$

$$\therefore \% \text{ increase} = \frac{(132-100)}{100} \times 100 = 32\%$$

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

Question 83

The ratio of three numbers is 3 : 6 : 8. If their product is 9216, then what is the sum of the three numbers?

A 96

B 72

C 144

D 68

Answer: D

Explanation:

Let the numbers be $3x$, $6x$ and $8x$

$$\text{Product} = 3x \times 6x \times 8x = 9216$$

$$\Rightarrow x^3 = \frac{9216}{144} = 64$$

$$\Rightarrow x = \sqrt[3]{64} = 4$$

$$\therefore \text{Sum of the numbers} = 3x + 6x + 8x = 17x$$

$$= 17 \times 4 = 68$$

$$\Rightarrow \text{Ans} = (D)$$

Question 84

Rohit started a business with Rs 75000 and after some months Simran joined him with Rs 60000. If the profit at the end of the year is divided in the ratio 3 : 1, then after how many months did Simran join Rohit?

A 7

B 6

C 8

D 4

Answer: A

Explanation:

Rohit invested Rs. 75,000 for 12 months and Simran invested Rs. 60,000 for x months

$$\Rightarrow \text{Ratio of profits of P:Q} = (75,000 \times 12) : (60,000 \times x)$$

According to ques,

$$\Rightarrow \frac{75}{5x} = \frac{3}{1}$$

$$\Rightarrow 5x \times 3 = 75$$

$$\Rightarrow x = \frac{75}{15} = 5$$

Thus, Simran joined Rohit after = $12 - 5 = 7$ months

=> Ans - (A)

Question 85

A boy bought 50 chocolates for Rs 1000. If the average price of 30 chocolates is Rs 25, then what is the average price (in Rs) of the remaining chocolates?

A 10

B 12.5

C 15

D 17.5

Answer: B

Explanation:

Total price of 50 chocolates = Rs. 1000

Total price of 30 chocolates = $30 \times 25 = \text{Rs. } 750$

=> Total price of remaining $(50 - 30 = 20)$ chocolates = $1000 - 750 = \text{Rs. } 250$

\therefore Average price of 20 chocolates = $\frac{250}{20} = \text{Rs. } 12.5$

=> Ans - (B)

Question 86

The simple interest on a sum for 8 years is Rs 47500. The rate of interest for the first 5 years is 10% per annum and for the next 3 years is 15% per annum. What is the value (in Rs) of sum?

A 50000

B 60000

C 45000

D 62500

Answer: A

Explanation:

Let the sum = Rs. $100x$

Rate of interest for first 5 years = 10% and for next 3 years = 15%

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

$$\Rightarrow \left(\frac{100x \times 10 \times 5}{100} \right) + \left(\frac{100x \times 15 \times 3}{100} \right) = 47500$$

$$\Rightarrow 50x + 45x = 47500$$

$$\Rightarrow x = \frac{47500}{95} = 500$$

$$\therefore \text{Sum} = 100 \times 500 = \text{Rs. } 50,000$$

\Rightarrow Ans - (A)

Question 87

Selling price of a chair is Rs 1386. If loss percentage is 23%, then what is the cost price (in Rs) of chair?

A 1600

B 1800

C 1900

D 1067

Answer: B

Explanation:

Selling price = Rs. 1386

Loss % = 23%

$$\Rightarrow \text{Cost price} = \frac{1386}{(100-23)} \times 100$$

$$= \frac{126}{7} \times 100 = \text{Rs. } 1800$$

\Rightarrow Ans - (B)

Question 88

Marked price of a computer is Rs 48000 and discount is 13%. What is additional discount (in percentage) should be offered to the customer to bring the price of computer to Rs 39672?

A 10

B 5

C 8

D 9

Answer: B

Explanation:

Marked price of computer = Rs. 48,000 and discount = 13%

$$\Rightarrow \text{Selling price} = 48,000 - \left(\frac{13}{100} \times 48,000 \right)$$

$$= 48000 - 6240 = \text{Rs. } 41,760$$

$$\text{Final selling price} = \text{Rs. } 39,672$$

$$\Rightarrow \text{Additional discount \%} = \frac{(41760 - 39670)}{41760} \times 100$$

$$= \frac{2090}{4176} \approx 5\%$$

\Rightarrow Ans - (B)

Question 89

Which of the following statement is/are true ?

$$\text{I. } \sqrt{144} \times \sqrt{36} < \sqrt[3]{125} \times \sqrt{121}$$

$$\text{II. } \sqrt{324} + \sqrt{49} > \sqrt[3]{216} \times \sqrt{9}$$

A Only I

B Only II

C Neither I nor II

D Both I and II

Answer: B

Explanation:

$$\text{I: } \sqrt{144} \times \sqrt{36} < \sqrt[3]{125} \times \sqrt{121}$$

$$\text{L.H.S.} = 12 \times 6 = 72$$

$$\text{R.H.S.} = 5 \times 11 = 55$$

$$\text{Thus, L.H.S.} > \text{R.H.S.}$$

$$\text{II: } \sqrt{324} + \sqrt{49} > \sqrt[3]{216} \times \sqrt{9}$$

$$\text{L.H.S.} = 18 + 7 = 25$$

$$\text{R.H.S.} = 6 \times 3 = 18$$

$$\text{Thus, L.H.S.} > \text{R.H.S., which is correct.}$$

\therefore Only II is correct.

\Rightarrow Ans - (B)

Question 90

Pipe X can fill a tank in 20 hours and Pipe Y can fill the tank in 35 hours. Both the pipes are opened on alternate hours. Pipe Y is opened first, then in how much time (in hours) the tank will be full?

A 269/11

B 280/11

C 179/7

D 172/7

Answer: C

Explanation:

Let capacity of tank = L.C.M. (20,35) = 140 litres

Pipe X can fill the tank in 20 hours, \Rightarrow X's efficiency = $\frac{140}{20} = 7\text{l/hr}$

Similarly, Y's efficiency = $\frac{140}{35} = 4\text{l/hr}$

Pipes Y and X are alternatively opened, \Rightarrow Tank filled in 2 hours = $4 + 7 = 11$ litres

Multiplying both sides by 12, we get \Rightarrow Tank filled in 24 hours = 132 litres

Now, it's Y's turn to be opened, it will 4 more litres, \Rightarrow In 25 hours = 136 litres

Thus, the remaining tank is filled by pipe X in $\frac{4}{7}$ hours

\Rightarrow Total time = $25 + \frac{4}{7} = \frac{179}{7}$ hours

\Rightarrow Ans - (C)

Question 91

A train is moving at the speed of 54 km/hr. How many seconds it will take to cover a distance of 450 metres?

A 60

B 30

C 45

D 36

Answer: B

Explanation:

Speed of train = 54 km/hr = $(54 \times \frac{5}{18}) = 15\text{m/s}$

Let time taken to cover 450 m = t seconds

Using, time = distance/speed

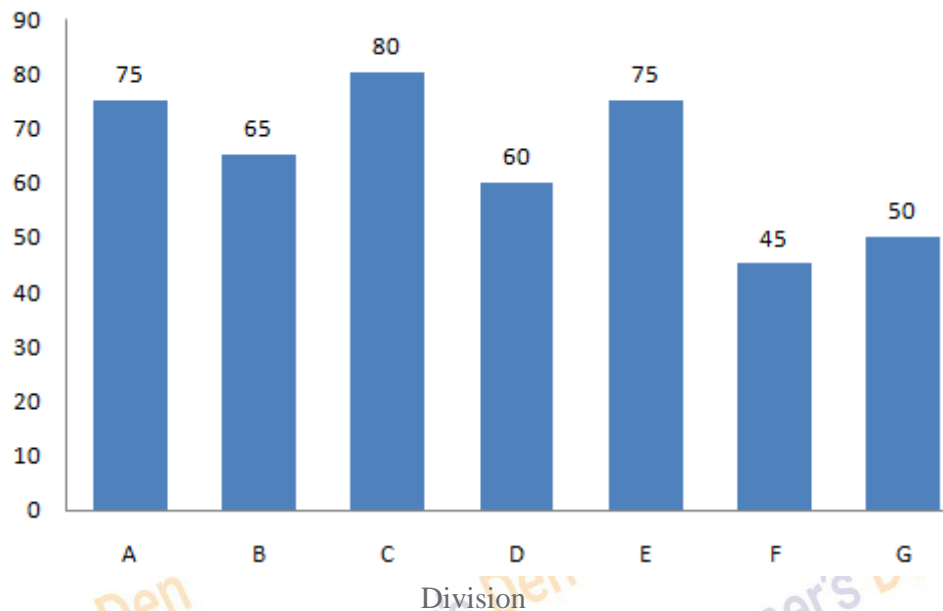
$\Rightarrow t = \frac{450}{15} = 30\text{seconds}$

\Rightarrow Ans - (B)

Instructions

The bar graph shows average marks scored in a 100 marks Science exam by students of 7 divisions of Standard X. Study the diagram and answer the following questions.

Average Science Marks



Question 92

Which division scored the second lowest marks?

A F

B B

C G

D D

Answer: C

Explanation:

Marks when arranged in ascending order are : $45 < 50 < 60 < 65 < 75, 75 < 80$

Corresponding division is : F, G, D, B, A, E, C

Thus, G division scored second lowest marks.

=> Ans - (C)

Question 93

What is the ratio of average marks scored by Division D to Division A?

A 4 : 5

B 5 : 4

C 4 : 7

D 7 : 4

Answer: A

Explanation:

Average marks scored by Division D = 60

Average marks scored by Division A = 75

$$\Rightarrow \text{Required ratio} = \frac{60}{75} = 4 : 5$$

\Rightarrow Ans - (A)

Question 94

Marks of division F were lesser than that of Division C by _____

A 35%

B 47.25%

C 45%

D 43.75%

Answer: D

Explanation:

Marks scored by Division F = 45

Marks scored by Division C = 80

$$\Rightarrow \text{Required \%} = \frac{(80-45)}{80} \times 100$$

$$= \frac{35 \times 5}{4} = 43.75\%$$

\Rightarrow Ans - (D)

Question 95

If all students of Division A lost 5 marks each for indiscipline then their new average marks would decrease by how much?

- A 5%
- B 11.11%
- C 6.67%
- D 10%

Answer: C

Explanation:

Current average marks of all students of Division A = 75

If all students of Division A lost 5 marks each, then new average marks = $75 - 5 = 70$

$$\Rightarrow \text{Required \% decrease} = \frac{(75-70)}{75} \times 100$$

$$= \frac{100}{15} = 6.67\%$$

\Rightarrow Ans - (C)

Instructions

For the following questions answer them individually

Question 96

If the length of one side and the diagonal of a rectangle are 7 cm and 25 cm respectively, then find its perimeter (in cm).

- A 124
- B 36
- C 62
- D 72

Answer: C

Explanation:

Let l be the length of rectangle and breadth = $b = 7$ cm

Diagonal of rectangle = $d = 25$ cm

$$\Rightarrow (l)^2 = (d)^2 - (b)^2$$

$$\Rightarrow (l)^2 = (25)^2 - (7)^2$$

$$\Rightarrow (l)^2 = 625 - 49 = 576$$

$$\Rightarrow l = \sqrt{576} = 24 \text{ cm}$$

$$\therefore \text{Perimeter of rectangle} = 2(l + b)$$

$$= 2(24 + 7) = 2 \times 31 = 62 \text{ cm}$$

=> Ans - (C)

Question 97

If a regular polygon has 5 sides then the measure of its interior angle is greater than the measure of its exterior angle by how many degrees?

A 60°

B 36°

C 90°

D 100°

Answer: B

Explanation:

Sum of interior angles of a regular polygon = $(n - 2) \times 180^\circ$

Sum of all interior angles of a pentagon = $(5 - 2) \times 180^\circ = 540^\circ$

=> Measure of an interior angle of a polygon = $\frac{540}{5} = 108^\circ$

Sum of all exterior angles of a pentagon = 360°

=> Measure of an exterior angle of a polygon = $\frac{360}{5} = 72^\circ$

\therefore Required difference = $108^\circ - 72^\circ = 36^\circ$

=> Ans - (B)

Question 98

Find the volume in cm^3 of a cube of side 3.5 cm.

A 69.845

B 42.875

C 19.765

D 11.165

Answer: B

Explanation:

Side of cube = $a = 3.5 \text{ cm}$

$$\Rightarrow \text{Volume of cube} = a^3$$

$$= (3.5)^3 = 42.875 \text{ cm}^3$$

\Rightarrow Ans - (B)

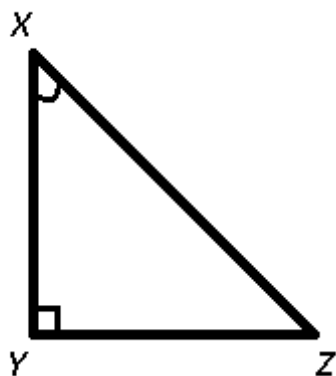
Question 99

ΔXYZ is right angled at Y. If $m\angle X = 60^\circ$, then find the value of $(\sec Z + 2/\sqrt{3})$

- A $4/\sqrt{3}$
- B $(\sqrt{2}+2)/2\sqrt{2}$
- C $7/2\sqrt{3}$
- D $4/2\sqrt{3}$

Answer: A

Explanation:



$$\text{Sum of angles of } \Delta XYZ = \angle X + \angle Y + \angle Z = 180^\circ$$

$$\Rightarrow 60^\circ + 90^\circ + \angle Z = 180^\circ$$

$$\Rightarrow \angle Z = 180^\circ - 150^\circ = 30^\circ$$

$$\text{To find : } \left(\sec Z + \frac{2}{\sqrt{3}} \right)$$

$$= \sec(30^\circ) + \frac{2}{\sqrt{3}}$$

$$= \frac{2}{\sqrt{3}} + \frac{2}{\sqrt{3}} = \frac{4}{\sqrt{3}}$$

\Rightarrow Ans - (A)

Question 100

In ΔUVW measure of angle V is 90° . If $\tan U = 12/5$, and $UV = 10\text{cm}$, then what is the length (in cm) of side VW?

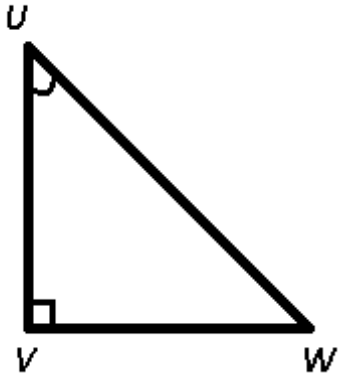
- A 26
- B 24

C 25

D 5

Answer: B

Explanation:



Given : $\tan U = \frac{12}{5}$

Also, $\tan U = \frac{VW}{UV} = \frac{12}{5}$

Let $VW = 12x$ cm and $UV = 5x$ cm

According to ques, $\Rightarrow 5x = 10$

$\Rightarrow x = \frac{10}{5} = 2$

$\therefore VW = 12 \times 2 = 24$ cm

\Rightarrow Ans - (B)

