2017 SSC CGL 20 Aug Shift-3

Reasoning

Instructions
For the following questions answer them individually

Question 1

Select the related word from the given alternatives.
Cotton : White :: Coal : ?

A Fire

B Mine

C Wood

D Black

   Answer: D

Explanation:
Cotton is generally white in colour, and coal is black.

=> Ans - (D)

Question 2

Select the related letters from the given alternatives.
WVT : SRP :: MLJ : ?

A KHG

B IHG

C IHF

D HEF

   Answer: C

Explanation:
Expression = WVT : SRP

The pattern followed is =

W	V	T
(-4)	(-4)	(-4)
S	R	P

Similarly, for MLJ :

M	L	J
(-4)	(-4)	(-4)
I	H	F

=> Ans - (C)

Question 3

Select the related number from the given alternatives.
12.5 : 6.25 :: 7 : ?

A 3.5

B 3.25

C 6.5

D 12

    Answer: A

Explanation:
Expression = 12.5 : 6.25 :: 7 : ?

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

Eg = $12.5 : \frac{12.5}{2} = 12.5 : 6.25$

Similarly, $\frac{7}{2} = 3.5$

=> Ans - (A)

Question 4

Select the odd word from the given alternatives.

A Apple

B Mango

C Orange

D Almond

    Answer: D

Explanation:
All except almond are fruits, while almond is a dry fruit, hence it's the odd one out.

=> Ans - (D)

Question 5

Select the odd letters from the given alternatives.

A UTS

B PNM

C KIH

D FDC

    Answer: A

Explanation:
(A) : U (**-1** letter) = T (-1 letter) = S

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

(C) : K (-2 letters) = I (-1 letter) = H

(D) : F (-2 letters) = D (-1 letter) = C

=> Ans - (A)

Question 6

Select the odd number from the given alternatives.

A 27

B 39

C 65

D 51

  Answer: C

Explanation:
Among the given number, only 65 is divided by 5, hence it is the odd one out.

=> Ans - (C)

Question 7

A series is given, with one word missing. Choose the correct alternative from the given ones that will complete the series.
Money, Amity, Camera, Animal, Telomere, ?

A Talisman

B Litmus

C Matter

D Shame

  Answer: A

Explanation:
Expression : Money, Amity, Camera, Animal, Telomere, ?

The position of the letter 'm' in each term is shifted one place to the right.

Eg : **M**oney (1st place) , A**m**ity (2nd place) , Ca**m**era (3rd place) , Ani**m**al (4th place) , Telo**m**ere (5th place)

Thus, in the next term, 'm' will be at 6th position, and among the options, next word = Talis **m**an

=> Ans - (A)

Question 8

A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.
CDE, IHG, KLM, QPO, STU, ?

A YXW

B WXY

C XYW

D XWY

  Answer: A

Explanation:
Expression : CDE, IHG, KLM, QPO, STU, ?

The pattern followed is that in a group of 3 letters, English alphabetical series is written. One alphabet is missing between two consecutive terms. Also, every second term is written in reverse order.

Thus, missing letter after U = V

Now, WXY will be written in reverse order, missing term = **YXW**

=> Ans - (A)

Question 9

A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series.
6, 18, 54, ? , 486, 1458

A 164

B 160

C 168

D 162

  Answer: D

Explanation:
Each number is multiplied by 3

6 ×3 = 18

18 ×3 = 54

54 ×3 = **162**

162 ×3 = 486

486 ×3 = 1458

=> Ans - (D)

Question 10

Arnav's birthday is on Tuesday 14th March. On what day of the week will be Pranay's Birthday in the same year if Pranay was born on 13th September?

A Monday

B Tuesday

C Wednesday

D Thursday

  Answer: C

Explanation:
According to the question, 14th March is Tuesday

Number of days left in March = $31 - 14 = 17$

Similarly, odd days from 14th March till 13th September = $(17 + 30 + 31 + 30 + 31 + 31 + 13)\%7$

$= 3 + 2 + 3 + 2 + 3 + 3 + 6 = 22$

Now, dividing 22 by 7, remainder = 1

Thus, day on 13th September = Tuesday (+1) = Wednesday

=> Ans - (C)

Question 11

The weights of 4 boxes are 90, 40, 80 and 50 kilograms. Which of the following cannot be the total weight, in kilograms, of any combination of these boxes and in a combination a box can be used only once?

A 200

B 260

C 180

D 170

   Answer: A

Explanation:
Weights of 4 boxes = 90, 40, 80 and 50 kilograms

(A) : 200 = not possible

(B) : 260 = 40 + 50 + 80 + 90

(C) : 180 = 40 + 50 + 90

(D) : 170 = 80 + 90

=> Ans - (A)

Question 12

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

A THING

B CHAIN

C CHEAT

D CLING

   Answer: C

Explanation:
The word LATCHING does not contain any 'E', and thus the word 'Cheat' cannot be formed.

=> Ans - (C)

Question 13

If BOULDER is coded as ZMSJBCP, then how will ELK be coded as?

A XIG

B EOC

C CJI

D BXM

   Answer: C

Explanation:
BOULDER is coded as ZMSJBCP

The pattern followed is :

B	O	U	L	D	E	R
(-2)	(-2)	(-2)	(-2)	(-2)	(-2)	(-2)
Z	M	S	J	B	C	P

Similarly, for ELK :

E	L	K
(-2)	(-2)	(-2)
C	J	I

=> Ans - (C)

Question 14

In a certain code language, '+' represents 'x', '-' represents '+', 'x' represents '÷' and '÷' represents '-'. What is the answer to the following question?
56 ÷ 8 + 12 - 72 = ?

A 32

B 88

C 44

D 82

Answer: A

Explanation:
Expression = 56 ÷ 8 + 12 - 72 = ?

$\equiv 56 - 8 \times 12 + 72$

$= 56 - 96 + 72 = 32$

=> Ans - (A)

Question 15

If 6#30=5; 8#24=3; 7#28=4; then what is the value of 8#40=?

A 47

B 4

C 5

D 24

Answer: C

Explanation:
The second number is divided by the first.

Eg : 6#30 = $\frac{30}{6} = 5$

and 8#24 = $\frac{24}{8} = 3$

and 7#28 = $\frac{28}{7} = 4$

Similarly, 8#40 = $\frac{40}{8} = 5$

=> Ans - (C)

Question 16

Select the missing number from the given responses

134	34	100
117	86	31
87	?	64

A   120

B   23

C   55

D   30

   Answer: B

Explanation:

In each row, the number at the middle is obtained by subtracting third number from first.

Eg : $134 - 100 = 34$

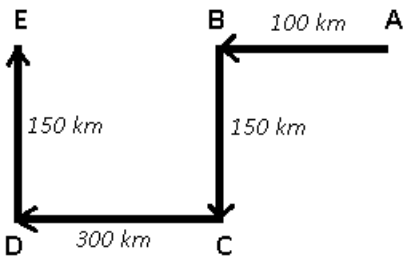and $117 - 31 = 86$

Similarly, $87 - 64 = 23$

=> Ans - (B)

Question 17

A plane flies 100 km West, then it turns South and flies 150 km, then it turns West and flies 300 km, then it turns to its right and flies 150 km. Where is it now with reference to its starting position?

A   400 km East

B   200 km West

C   400 km West

D   200 km East

   Answer: C

Explanation:

Let the plane starts from point A and travels west for 100 km and reaches B, then it turns South and reaches C after travelling 150 km. Then again it turns west for 300 km and finally reaches point E.

Thus, AE = 100 + 300 = 400 km

∴ The plane is 400 km to the west of its initial position.

=> Ans - (C)

Question 18

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 1 : All dawn is day.
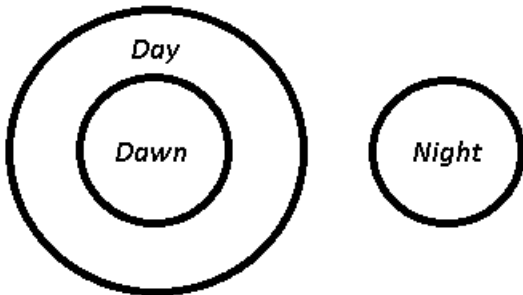Statement 2 : No day is night.
Conclusion I : No night is day.
Conclusion II : Some dawn is night.

A Only conclusion I follows

B Only conclusion II follows

C Both I and II follow

D Neither I nor II follows

  Answer: A

Explanation:
The venn diagram for above statements is :

Conclusion I : No night is day = true
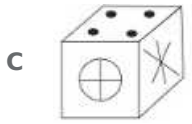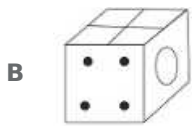
Conclusion II : Some dawn is night = false

Thus, only conclusion I follows

=> Ans - (A)

Question 19

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

A

B

C

D
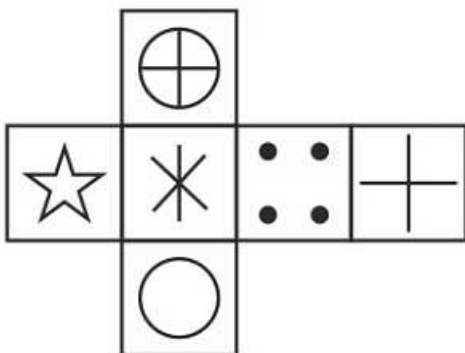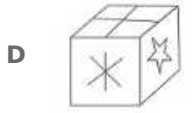
Answer: D

Explanation:

When we fold the given figure, the side with a '+' sign will become the top of the cube and the side with 'X' sign will become base, and thus they will face each other. Similarly, the sides which will face each other will be :
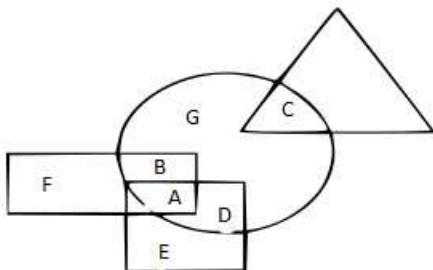

Since, the opposite sides cannot be adjacent in the cube, thus the cube in the last option is not possible.

=> Ans - (D)

Question 20

In the following figure, square represents Runners, triangle represents Scientists, circle represents Indians and rectangle represents Mothers. Which set of letters represents Indians who are runners?
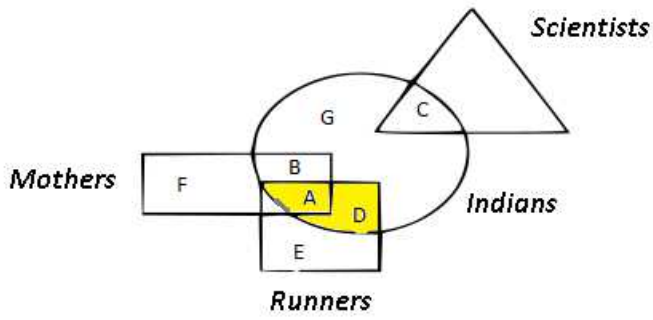

A   F,B,D,E

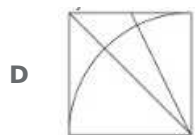**B**   A,D
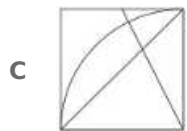
C   G,C,D

D   B,C,G,F
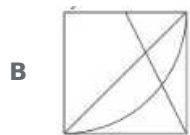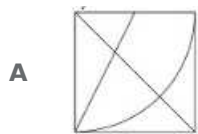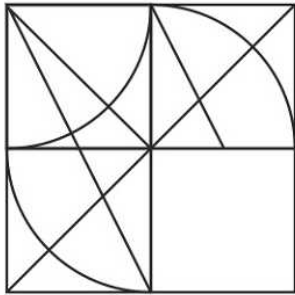
Answer: B

Explanation:

Indians who are runners are represented by yellow region = A + D

=> Ans - (B)

Question 21

Which answer figure will complete the pattern in the question figure

A

B

C

D

Answer: D

Explanation:
When we complete the above figure, we get :
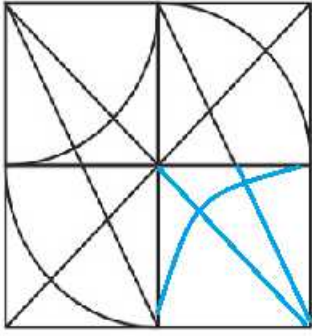
Now, the last figure resembles the above missing part in blue colour.

=> Ans - (D)

Question 22

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

A

B

C

D
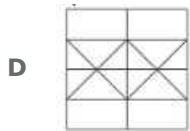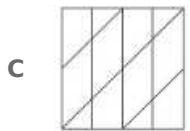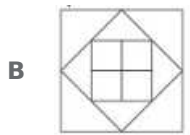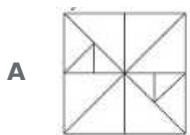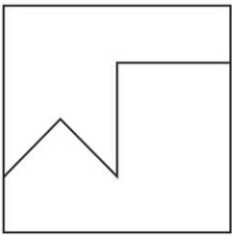
 Answer: D

Explanation:
The question figure is embedded in the following figure :
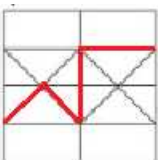
=> Ans - (D)

Question 23

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
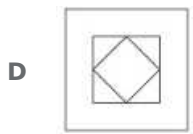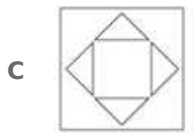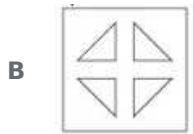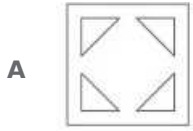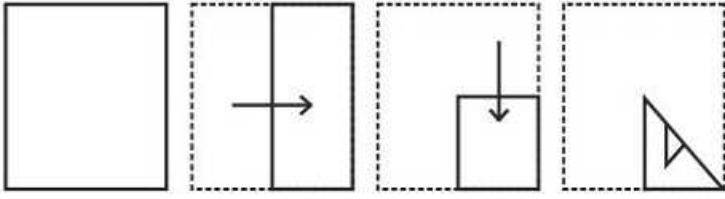
Answer: B

Question 24

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

A

B

C
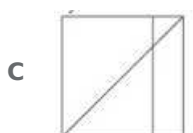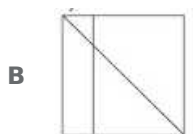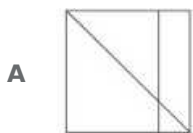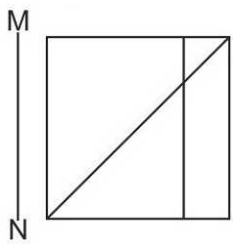
D
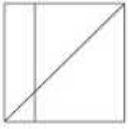
Answer: B

Explanation:
A vertical mirror is placed, so the object at the left will appear at the right and vice-versa. So, the right diagonal in the question figure will appear as left diagonal in the mirror image, and thus the last two options are eliminated.

Also, the vertical line will also, change its initial position, so first option is invalid.

=> Ans - (B)

Question 25

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 'K' can be represented by 10, 22 etc and 'Z' can be represented by 85, 58 etc. Similarly, you have to identify the set for the word 'PERK'.

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

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

A   13,02,66,68

B   95,41,57,22

C   32,02,87,56

D   30,04,75,96

Answer: B

Explanation:
(A) : 13,02,66,68 = LJQT

(B) : 95,41,57,22 = **PERK**

(C) : 32,02,87,56 = IJNW

(D) : 30,04,75,96 = BAXY

=> Ans - (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'.
At this moment that (1)/ terrible door burst noisily open and (2)/ banged for the wall. (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'.

While an electron (1)/ carries a negative electrical (2)/ charge, a neutron is neutral. (3)/No Error (4)

A   1

B   2

C   3

D   4

  Answer: D

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.

The big stone monument was the only _____ the lost traveller remembered.

A   specimen

B   souvenir

C   piece

D   landmark

  Answer: D

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.

The airline was unable to give us a reason for the _____ departure delay.

A   indivisible

B   invincible

C   invisible

D   inexplicable

  Answer: D

Question 30

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

A   Disenchant

B   Entice

C   Repulse

D   Bully

   Answer: B

Question 31

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

A   Unpretentions

B   Timid

C   Arrogant

D   Couteous

   Answer: C

Question 32

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

A   Condescending

B   Curt

C   Humble

D   Haughty

   Answer: C

Question 33

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

A   Indifference

B   Diligence

C Acuity

D Circumspection

   Answer: A

Question 34

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

A Propose marriage

B Inform about the death of a loved one

C Call someone on the telephone

D Trap somebody in a difficult relationship

   Answer: C

Question 35

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.
Leave no stone unturned

A Search for the hidden treasure

B Do a futile task

C Be known for achieving a tremendous feat

D Try every possible course of action in order to achieve something

   Answer: D

Question 36

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".
She and Dad would (has had loved) Amit.

A has loved

B have loved

C to loved

D no improvement

   Answer: B

Question 37

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".
Someone must (being) killed.

A have been

B has been

C been

D no improvement

   Answer: A

Question 38

In the following question, out of the four alternatives, select the alternative which is the best substitute of the words/sentence.
The state or quality of being holy

A Avarice

B Baseness

C Sanctity

D Parsimony

   Answer: C

Question 39

In the following question, out of the four alternatives, select the alternative which is the best substitute of the words/sentence.
A substance easily evaporated at normal temperatures

A Volatile

B Steadfast

C Enduring

D Definite

   Answer: A

Question 40

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

A hypnotyst

B hipnotyst

C hipnotist

D hypnotist

   Answer: D

Question 41

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

A theurise

B theoris

C theuris

D theorise

Answer: D

Question 42

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.
They had seen enough of the
X-them to come a step farther
Y-desert already, and no number
Z-of knives would have tempted

A YXZ

B YZX

C XZY

D XYZ

Answer: B

Question 43

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.
Such are the strata which we
X-species as those now living in the Mediterranean
Y-meet with in the south of Sicily, filled
Z-with shells for the most part of the same

A YXZ

B XZY

C XYZ

D YZX

Answer: D

Question 44

In the following question, a sentence has been given in Active/Passive voice. Out of the four alternatives suggested, select the one which best expresses the same sentence in Passive/Active voice.
The movie critic wrote a sarcastic review.

A A sarcastic review is written by the movie critic.

B A review which is sarcastic was written by the movie critic.

C A review which is sarcastic is written by the movie critic.

D A sarcastic review was written by the movie critic.

Answer: D

Question 45

In the following question, a sentence has been given in Direct/Indirect speech. Out of the four alternatives suggested, select the one which best expresses the same sentence in Indirect/Direct speech. The trainee asked his boss, "Shall I email this letter again, Sir?"

A The trainee asked his boss politely if he shall email that letter again.

B The trainee asked his boss politely if he should email that letter again, sir.

C The trainee asked his boss politely if he shall email that letter again, sir.

D The trainee asked his boss politely if he should email that letter again.

Answer: D

Instructions

A passage is given with 5 questions following it. Read the passage carefully and choose the best answer to each question out of the four alternatives.

The flora and fauna of Cubbon Park captures our attention more than anything else. But when you take time to look closely at the statue, you will marvel at its sheer grandeur. Sculpted by Sir Thomas Brock, the 11 feet high marble statue is larger than life. It brings out the personality of Queen Victoria, who had been the Monarch of Great Britain from 1837 till 1901, depicting a rather proud, stern person with pronounced features.

In 1906, the statue was unveiled in the city by George Frederick Ernest Albert, Prince of Wales and Duke of Cornwall and York, making it stand in all its glory in its 111th year. Even though there is a wealth of history to the statue, and it was made to appear imposing, the busy Bengalureans would probably refer to it as just another landmark. As the workers are busy in discussion on the instructions given to them, life continues as usual in the Park.

Question 46

Queen Victoria ruled Great Britain for how many years?

A 64 years

B 34 years

C 54 years

D 44 years

Answer: A

Question 47

How many people unveiled the Queen Victoria statue at Cubbon Park?

A One

B Six

C Four

D Two

   Answer: D

Question 48

The Bengalureans would refer to the Queen Victoria statue as _____.

A wealth of history

B a landmark

C Symbol of British rule

D Bengaluru culture

   Answer: B

Question 49

Queen Victoria had all of the following traits, except _____.

A proud

B generous

C stern

D pronounced features

   Answer: B

Question 50

Which of the following is false regarding the Queen Victoria statue in Bengaluru?

A It is made of marble

B It is 11 feet tall

C It is 111 years old

D It is standing in Queen Victoria park

   Answer: D

General Awareness

Instructions
For the following questions answer them individually

Question 51

If the _____ firm has zero costs or only has fixed cost, the quantity supplied in equilibrium is given by the point where the marginal revenue is zero.

A   Perfect Competition

B   Monopoly

C   Oligopoly

D   Monopolistic Competition

   Answer: B

Question 52

The short run marginal cost curve is ____ shaped.

A   U

B   V

C   X

D   W

   Answer: A

Question 53

"Betting and gambling" is listed in which list given in the Seventh Schedule in the Constitution of India.

A   Union

B   State

C   Global

D   Concurrent

   Answer: B

Question 54

There are total _____ parliamentary seats (Lok Sabha constituency) in West Bengal.

A   42

B   2

C   14

D   40

   Answer: A

Question 55

In 1916 Mahatma Gandhi travelled to which place to inspire the peasants to struggle against the oppressive plantation system?

A   Dandi

B   Sabarmati

C   Champaran

D   Chauri Chaura

   Answer: C

Question 56

Mahatma Gandhi returned to India from _____ in January 1915.

A   South Africa

B   England

C   USA

D   Russia

   Answer: A

Question 57

_____ is separated from India by a narrow channel of sea formed by Palk Strait and the Gulf of Mannar.

A   Sri Lanka

B   Myanmar

C   Bangladesh

D   Pakistan

   Answer: A

Question 58

The land mass of India has an area of _____ million square km.

A   1.28

B   2.28

C   3.28

D   4.28

   Answer: C

Question 59

_____ being a higher category, is the assemblage of families which exhibit a few similar characters.

A   Order

B   Species

C Genus

D Class

  Answer: A

Question 60

Sexual reproduction in Algae that takes place through fusion of two dissimilar size gametes is called?

A Zoospores

B Anisogamous

C Isogamous

D Oogamous

  Answer: B

Question 61

The animals in which the body cavity is absent are known as _____.

A Coelomates

B Wild

C Pseudocoelomates

D Acoelomates

  Answer: D

Question 62

According to the Second Law of Motion, for a given force, acceleration is inversely proportional to the ____ of an object.

A density

B volume

C force

D mass

  Answer: D

Question 63

The coil wire in the electric room heater or electric cooking heater is called _____.

A Circuit

B Element

C Filament

D Cells

Answer: B

Question 64

_____ software are freely available and can be edited and customized by anyone.

A Free Source

B Open Source

C Easy Source

D Unpaid Source

Answer: B

Question 65

_____ is obtained by evaporation of sea.

A Sugar

B Iron

C Salt

D Steel

Answer: C

Question 66

The passage of an electric current through a conducting liquid causes _____.

A Galvanisation

B Evaporation

C Physical Reaction

D Chemical Reaction

Answer: D

Question 67

_____ is the number of individuals of the population who left the habitat and gone elsewhere during the time period under consideration.

A Natality

B Mortality

C Immigration

D Emigration

Answer: D

Question 68

_____ was launched by Prime Minister Narendra Modi as a part of the Beti Bachao, Beti Padhao campaign.

A Sukanya Samridhi Account

B Bal Swachta Mission

C Pradhan Mantri Jan Dhan Yojana

D Beti Bachao Beti Padhao Yojana

Answer: A

Question 69

Who created the first mechanical computer, which proved to be the prototype for future computers?

A Archimedes

B John Harrison

C Cai Lun

D Charles Babbage

Answer: D

Question 70

In which sport did India win Bronze medal at Rio Olympics 2016?

A Badminton

B Boxing

C Hockey

D Wrestling

Answer: D

Question 71

Ajanta and Ellora caves are situated in which state of India?

A Kerala

B Odisha

C Maharashtra

D Jammu & Kashmir

Answer: C

Question 72

To whom the Nobel Prize in Physiology or Medicine 2016 was awarded?

A   David J. Thouless

B   Yoshinori Ohsumi

C   J. Michael Kosterlitz

D   Sir J. Fraser Stoddart

   Answer: B

Question 73

Which of the statements given below are correct?
1. The author of 'A Foreign Policy For India' is L.K Advani.
2. 'Wings of Fire' is a book written by A.P.J Abdul kalaam.
3. 'Open' is an Autobiography of Andre Agassi.

A   1 and 2

B   2 and 3

C   1 and 3

D   1, 2 and 3

   Answer: B

Question 74

According to Stockholm International Peace Research Institute, with spending of $55.9 Billion in 2016, which country became world's fifth-largest military spender?

A   China

B   USA

C   Russia

D   India

   Answer: D

Question 75

Which of the following river originates in Nepal and flows into the Ganges?

A   Kosi

B   Jhelum

C   Chenab

D   Ravi

   Answer: A

Mathematics

Question 76

9997 x 10003 = ?
9997 x 10003 =?

A   9999991

B   99999911

C   99999991

D   9999911

   Answer: C

Explanation:
9997 x 10003 = (10000-3)(10000+3) = 100000000 - 9 = 99999991

So the answer is option C.

Question 77

A can do a work in 36 days and B in 12 days. If they work on it together, then in how many days will they be able to do the work?

A   8

B   6

C   10

D   9

   Answer: D

Explanation:
Let total work = L.C.M of 36&12 = 36units

A's efficiency = 36/36 = 1

B's efficiency = 36/12 = 3

To complete total work, i.e; 36 units of work,

both can take $\frac{36}{1+3} = 9$ days

so the answer is option D.

Question 78

What is the area (in sq cm) of a rhombus if the lengths of the diagonals are 12 cm and 14 cm?

A   42

B   168

C 84

D 63

  Answer: C

Explanation:

Area of rhombus $= \frac{1}{2}d_1d_2 = \frac{1}{2}(12)(14) = 84$

So the answer is option C.

Question 79

If the shopkeeper sells an item at Rs 4400 which is marked as Rs 5000, then what is the discount that he is offering?

A 20%

B 12%

C 15%

D 10%

  Answer: B

Explanation:

Discount = MP-SP = 5000-4400 = 600

%of discount $= \frac{600}{5000} \times 100 = 12\%$

So the answer is option B.

Question 80

The flight fare between two cities is increased in the ratio 9:11. What is the increase (in Rs in the fare, if the original fare was Rs. 18,000?

A 22000

B 3600

C 4000

D 20000

  Answer: C

Explanation:

$\frac{original price}{price after increase} = \frac{9}{11}$

$\frac{18000}{price after increase} = \frac{9}{11}$

price after increase = 22,000

price increase = 22,000 - 18,000 = 4000

So the answer is option C.

Question 81

Of the 3 numbers whose average is 40, the first is 1/3 rd the sum of other 2. What is the first number?

A 20

B 50

C 25

D 30

   Answer: D

Explanation:

Let those numbers are A, B, C

(A+B+C)/3 = 40 ---> A+B+C = 120-------(1)

A = (1/3)(B+C) ----> 3A = B+C -------(2)

substitute (2) in (1)

A+3A = 120

4A = 120

A = 30

So the answer is option D.

Question 82

A trader buys 500 kgs of cotton for Rs 9,000. 10% of this cotton is spoiled due to rain. At what rate (Rs/Kg) should he sell the rest to earn 10% profit?

A 25

B 30

C 22

D 20

   Answer: C

Explanation:

Cotton left = 500 - 10% 0f 500 = 500 - 50 = 450kg

To get 10% profit, SP = 9000 + 10% of 9000 = 9000 + 900 = 9900/-

SP price/kg = 9900/450 = 22

So the answer is option C.

Question 83

A student has to secure 40% marks to pass. He gets 67 and fails by 13 marks. What is the maximum marks?

A 300

B 200

C 150

D 240

   Answer: B

Explanation:
He would have been passed if he had gotten 67+13=80marks

40% of total marks is 80

(40/100)*(total marks) = 80

Total marks = 200

So the answer is option B.

Question 84

A spaceship travels at 1,260 km/h. How many metres does it travel in 1/10 th of a second?

A 126

B 35

C 36

D 125

  Answer: B

Explanation:
Speed = 1260 kmph = 1260*(5/18) m/s = 350m/s

In 1 second it travells 350 meters

In 1/10th second it travells 350/10 = 35 meters.

So the answer is option B.

Question 85

If the amount received at the end of 2nd and 3rd year at Compound Interest on a certain Principal is Rs 1,800, and Rs 1,926 respectively, what is the rate of interest?

A 7.5%

B 7%

C 6%

D 6.5%

  Answer: B

Explanation:
Amount received at the end of 2nd yr = $P\left(1 + \frac{R}{100}\right)^2 = 1800$ -------(1)

Amount received at the end of 3rd yr = $P\left(1 + \frac{R}{100}\right)^3 = 1926$ -------(2)

divide (2) with (1)

$\Rightarrow \frac{P(1+\frac{R}{100})^3}{P(1+\frac{R}{100})^2} = \frac{1926}{1800}$

$\Rightarrow 1 + \frac{R}{100} = \frac{1926}{1800}$

$\Rightarrow \frac{R}{100} = \frac{1926}{1800} - 1$

$\Rightarrow \frac{R}{100} = \frac{1926-1800}{1800}$

$\Rightarrow \frac{R}{100} = \frac{126}{1800}$

$\Rightarrow \frac{R}{100} = \frac{7}{100}$

$\Rightarrow R = 7\%$

So the answer is option B.

Question 86

If (-1/2) * (x - 5) + 3 = -5/2, then what is the value of x?

A   16

B   4

C   -6

D   -4

  Answer: A

Explanation:
-x/2 + 5/2 + 3 = -5/2

-x/2 = -5/2 - 5/2 -3

-x/2 = -8

x = 16

So the answer is option A.

Question 87

If a - b = 1 and ab = 6, then what is the value of $a^3 - b^3$?

A   21

B   23

C   19

D   25

  Answer: C

Explanation:
$a^3 - b^3 = (a - b)^3 + 3ab(a - b) = (1)^3 + 3(6)(1) = 19$

So the answer is option C.

Question 88

A number is greater than 58 times its reciprocal by 3/4. What is the number?

A   -8

B   12

C   -12

D   8

  Answer: D

Explanation:
Let that number be x

$$58\left(\frac{1}{x}\right) + \frac{3}{4} = x$$

$$\Rightarrow 4x^2 - 3x - 232 = 0$$

$$\Rightarrow \left(x - \frac{32}{4}\right)\left(x + \frac{29}{4}\right) = 0$$

$$\Rightarrow (x - 8)\left(x + \frac{29}{4}\right) = 0$$

$$\Rightarrow x = 8 \, or - 29/4$$

so the answer is option D.

Question 89

What is the sum of the first 13 terms of an arithmetic progression if the first term is -10 and last term is 26?

A   104

B   140

C   84

D   98

   Answer: A

Explanation:
$$S_n = \frac{n}{2}[a + l]$$

$$S_{13} = \frac{13}{2}[-10 + 26]$$

$$S_{13} = \frac{13}{2}[16] = 104$$

So the answer is option A.

Question 90

What is the reflection of the point (-0.5, 6) in the x-axis?

A   (0.5, -6)

B   (-6, -0.5)

C   (6, -0.5)

D   (-0.5, -6)

   Answer: D

Explanation:
(diagram)

from the diagram answer = (-0.5 , -6)

So the answer is option D.

Question 91

In what ratio does the point T(x,0) divide the segment joining the points S(-4,-1) and U(1,4)?

A   1 : 4

B   4 : 1

C 1 : 2

D 2 : 1

  Answer: A

Explanation:

$(x, y) = \left(\dfrac{mx_2 + nx_1}{m+n}, \dfrac{my_2 + ny_1}{m+n} \right)$

$(x, 0) = \left(\dfrac{m-4n}{m+n}, \dfrac{4m+n}{m+n} \right)$

4m+n = 0

4m = -n

m/n = -1/4

So the answer is option A.

Question 92

At what point does the line 2x - 3y = 6 cuts the Y axis?

A (0, 2)

B (-2, 0)

C (2, 0)

D (0, -2)

  Answer: D

Explanation:
put x = 0 in 2x - 3y = 6

0 - 3y = 6

y = -2

the point is (0 , -2)

So the answer is option D.

Question 93

The areas of two similar triangles ΔABC and ΔPQR are 36 sq cms and 9 sq cms respectively. If PQ = 4 cm then what is the length of AB (in cm)?

A 16

B 12

C 8

D 6

  Answer: C

Explanation:
For similar triangles

Ratio of sides = $\sqrt{(ratio\, of\, areas)} = \sqrt{36:9} = 2:1$

AB/PQ = 2/1

AB/4 = 2/1

AB = 8

So the answer is option C.

Question 94

What is the value of Cot 45° + Cosec 60°?

A (√6 + 1)/√3

B (1 + √c)/2

C 5/√3

D (√3 + 2)/√3

 Answer: D

Explanation:
Cot 45° + Cosec 60°= 1 + 2/√3 = (√3+2)/√3

So the answer is option D.

Question 95

Δ LMN is right angled at M. If ∠N = 60°., then Tan L =_____.

A 1/2

B 1/√3

C 1/√2

D 2

 Answer: B

Explanation:
M = 90° N = 60°

then L = 30° (∵ $L + M + N = 180°$)

Tan L = Tan 30° = 1/√3

So the answer is option B.

Question 96

If Tan θ = 4/3, then what is the value of Sin θ?

A 3/5

B 4/5

C 4/3

D 5/4

 Answer: B

Explanation:
Tan θ = 4/3 = opp/adj

$\mathrm{hyp} = \sqrt{opp^2 + adj^2} = \sqrt{4^2 + 3^2} = 5$

Sin θ = opp/hyp = 4/5

So the answer is option B.

Instructions

The pie chart shows the breakup in percentages of the various expenses of a Company. Study the diagram and answer the following questions.
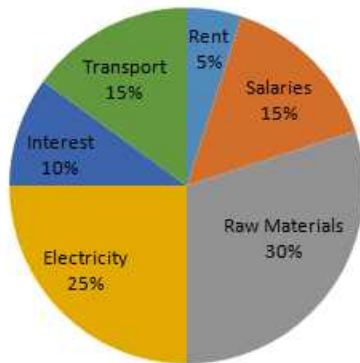
Question 97

Which is the second biggest expense of the company?

A   Raw materials

B   Salaries

C   Transport

D   Electricity

  Answer: D

Explanation:
Electricity with 25% is the 2nd biggest expence.

So the answer is option D.

Question 98

The ratio of company's expenditure on Raw material and Transport to Salaries is:

A   2 : 1

B   1 : 1

C   1 : 2

D   3 : 1

  Answer: D

Explanation:
Ratio = (raw+transport)/(salaries) = (30+15)/(15) = 45/15 = 3/1 = 3 : 1

So the answer is option D.

Question 99

The company's expenditure on interest is greater than expenditure on rent by

A   100%

B   50%

C   200%

D   150%

   Answer: A

Explanation:
 Expenditure on interest = 10%

Expenditure on rent = 5%

answer = $\frac{10-5}{5} \times 100 = \frac{5}{5} \times 100 = 100\%$

So the answer is option A.

Question 100

If the total expenses of the company are Rs 50 crores, the total expenditure (in Rs crores) on Transport and Electricity is:

A   7.5

B   12.5

C   20

D   10

   Answer: C

Explanation:
Expenditure on transport = 15%

Expenditure on Electricity = 25%

total = 40%

If total expences are 50 cr

then, the total expenditure (in Rs crores) on Transport and Electricity is = 40% of 50cr = $\frac{40}{100} \times 50 = 20cr$

So the answer is option C.