2017 SSC CGL 20 Aug Shift-2

Reasoning

Question 1

Select the related word from the given alternatives.
Plane : Pilot :: Ship : ?

A   Captain

B   Soldier

C   Navy

D   Major

  Answer: A

Explanation:
A pilot is a person who operates a plane, similarly the one who controls a ship is called the captain.

=> Ans - (A)

Question 2

Select the related letters from the given alternatives.
DFI : ACF :: OQT : ?

A   LNQ

B   MNO

C   MOR

D   HJL

  Answer: A

Explanation:
Expression = DFI : ACF

The pattern followed is :

D	F	I
(-3)	(-3)	(-3)
A	C	F

Similarly, for OQT :

O	Q	T
(-3)	(-3)	(-3)
L	N	Q

=> Ans - (A)

Question 3

Select the related number from the given alternatives.
77 : 84 :: 121 : ?

A   132

B 144

C 88

D 212

    Answer: A

Explanation:

Expression = 77 : 84 :: 121 : ?

The pattern followed is = $11n : 12n$, where n is a natural number.

Eg = $11(7) : 12(7) = 77 : 84$

Thus, $11x = 121$

$=> x = \frac{121}{11} = 11$

∴ Missing term = $12(11) = 132$

=> Ans - (A)

Question 4

Select the odd word from the given alternatives.

A Hills

B Valleys

C Trees

D Mountains

    Answer: C

Explanation:

Apart from trees, all of hills, valleys and mountains are very high from the ground, hence trees are the odd one out.

=> Ans - (C)

Question 5

Select the odd letters from the given alternatives.

A IKM

B OQS

C GEC

D UWY

    Answer: C

Explanation:

(A) : I (+2 letters) = K (+2 letters) = M

(B) : O (+2 letters) = Q (+2 letters) = S

(C) : G (**-2** letters) = E (**-2** letters) = C

(D) : U (+2 letters) = W (+2 letters) = Y

=> Ans - (C)

Question 6

Select the odd number from the given alternatives.

A 341

B 342

C 810

D 405

    Answer: A

Explanation:
All the numbers except 341 are divisible by 9, hence it is the odd one.

=> Ans - (A)

Question 7

A series is given, with one word missing. Choose the correct alternative from the given ones that will complete the series.
nephew, anther, tenses, prunes, preens, ?

A teen

B pester

C repent

D return

    Answer: D

Explanation:
Expression : nephew, anther, tenses, prunes, preens, ?

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

Eg : **n**ephew (1st place) , a**n**ther (2nd place) , te**n**ses (3rd place) , pru**n**es (4th place) , pree**n**s (5th place)

Thus, in the next term, 'n' will be at 6th position, and among the options, next word = retur **n**

=> Ans - (D)

Question 8

A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.
K, J, L, I, M, ?

A G

B H

C F

D N

    Answer: B

Explanation:

The pattern followed is :

K (-1 letters) = J

J (+2 letters) = L

L (-3 letters) = I

I (+4 letters) = M

M (-5 letters) = **H**

=> Ans - (B)

Question 9

A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series.
-4, ? , 1, 3.5, 6, 8.5

A   2

B   1.5

C   -1.5

D   -2

  Answer: C

Explanation:
The pattern followed is :

-4 + 2.5 = **-1.5**

-1.5 + 2.5 = 1

1 + 2.5 = 3.5

3.5 + 2.5 = 6

6 + 2.5 = 8.5

=> Ans - (C)

Question 10

Aarav's birthday is on Sunday, 12th March . On what day of the week will be Madhup's Birthday in the same year if Madhup was born on 10th August?

A   Thursday

B   Wednesday

C   Friday

D   Saturday

  Answer: A

Explanation:
According to the question, 12th March is Sunday

Number of days left in March $= 31 - 12 = 19$

Similarly, odd days from 12th March till 10th August $= (12 + 30 + 31 + 30 + 31 + 10)\%7$

$= 5 + 2 + 3 + 2 + 3 + 3 = 18$

Now, dividing 18 by 7, remainder = 4

Thus, day on 10th August = Sunday (+4) = Thursday

=> Ans - (A)

Question 11

The weights of 4 boxes are 20, 30, 50 and 70 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 170

B 160

C 120

D 150

   Answer: B

Explanation:

Weights of 4 boxes = 20, 30, 50 and 70 kilograms

(A) : 170 = 20 + 30 + 50 + 70

(B) : 160 = not possible

(C) : 120 = 50 + 70

(D) : 150 = 30 + 50 + 70

=> Ans - (B)

Question 12

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

A SHADE

B MEDIAS

C MASHED

D AMUSED

   Answer: D

Explanation:

The word FAMISHED does not contain any 'U', and thus the word 'Amused' cannot be formed.

=> Ans - (D)

Question 13

If ENCRYPT is coded as CLAPWNR, then how will ARC be coded as?

A PQE

B YPA

C ZSX

D QTB

   Answer: B

Explanation:

ENCRYPT is coded as CLAPWNR

The pattern followed is :

E	N	C	R	Y	P	T
(-2)	(-2)	(-2)	(-2)	(-2)	(-2)	(-2)
C	L	A	P	W	N	R

Similarly, for ARC :

A	R	C
(-2)	(-2)	(-2)
Y	P	A

=> Ans - (B)

Question 14

In a certain code language, '+' represents 'x', '-' represents '+', 'x' represents '÷' and '÷' represents '-'. What is the answer to the following question?
550 x 22 - 24 + 3 = ?

A 91

B 97

C 77

D 68

  Answer: B

Explanation:

Expression = 550 x 22 - 24 + 3 = ?

$\equiv 550 \div 22 + 24 \times 3$

$= 25 + 72 = 97$

=> Ans - (B)

Question 15

If 9@7=4; 6@1=10; 7@4=6; then what is the value of 8@2=?

A 1

B 35

C 26

D 12

  Answer: D

Explanation:

The positive difference of the number is multiplied by 2.

Eg = 9@7 = $(9 - 7) \times 2 = 2 \times 2 = 4$

and 6@1 = $6 - 1) \times 2 = 5 \times 2 = 10$

and 7@4 = $(7 - 4) \times 2 = 3 \times 2 = 6$

Similarly, 8@2 $= (8 - 2) \times 2 = 6 \times 2 = 12$

=> Ans - (D)

Question 16

Select the missing from the given responses

?	105	96
13	15	12
5	7	8

A 9

B 201

C 65

D 101

  Answer: C

Explanation:
In each column, the number at the top is obtained by multiplying the other two numbers.

Eg : $15 \times 7 = 105$

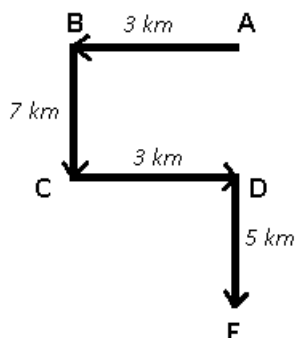and $12 \times 8 = 96$

Similarly, $13 \times 5 = 65$

=> Ans - (C)

Question 17

A man walks 3 km West, then turns South and walks 7 km, then turns East and walks 3 km, then turns to his right and walks 5 km. Where is he now with reference to her starting position?

A 12 km North

B 2 km South

C 12 km South

D 2 km North

  Answer: C

Explanation:

Let the man started from point A, he travels west for 3 km and reaches B, then he travels south for 7 km and reaches point C.

Now, the man turns east and travel for 3 km and finally stops at point E.

Thus, AE = 7 + 5 = 12 km

∴. The man is 12 km to the south of his 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 : Some books are diaries.
Statement 2 : All books are paper.
Conclusion I : All diaries are paper.
Conclusion II : Some paper are diaries.

A Only conclusion I follows

B Only conclusion II follows

C Both I and II follow

D Neither I nor II follows

Answer: B

Explanation:
The venn diagram for above statements is :
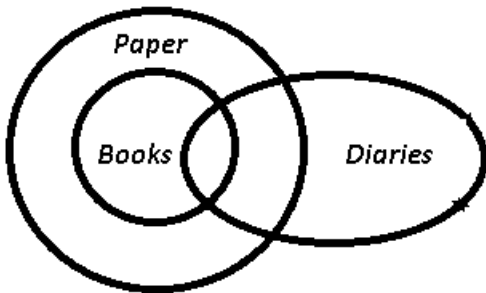
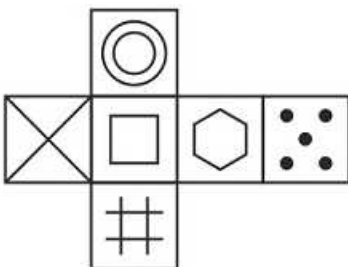Conclusion I : All diaries are paper = false
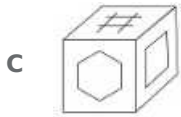
Conclusion II : Some paper are diaries = true

Only conclusion II follows

=> Ans - (B)

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: A

Explanation:

When we fold the given figure, the side with a 'square' sign will become the base of the cube and the side with '5 dots' sign will become top, and thus they will face each other. Similarly, the sides which will face each other will be :
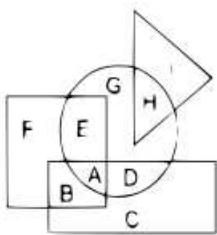

Since, the opposite sides cannot be adjacent in the cube, thus the cube in the first option is not possible.
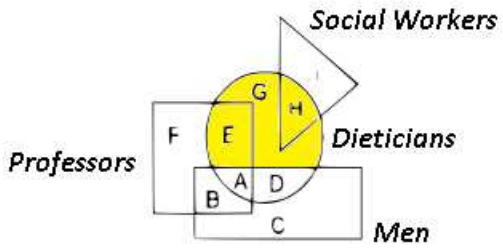
=> Ans - (A)

Question 20

In the following figure, square represents Professors, triangle represents Social Workers, circle represents Dieticians and rectangle represents Men. Which set of letters represents Dieticians who are not men?

A A,D

B B,C

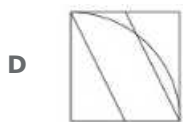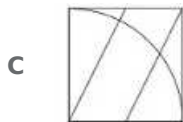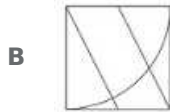**C** E, G,H

D A,B,C,D,E,G,H
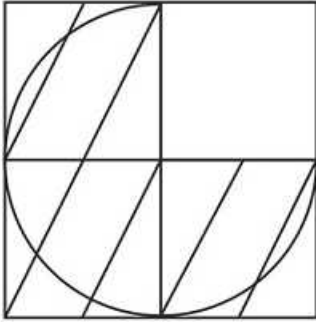
Answer: C

Explanation:

Dieticians who are not men are represented by yellow region = E + G + H
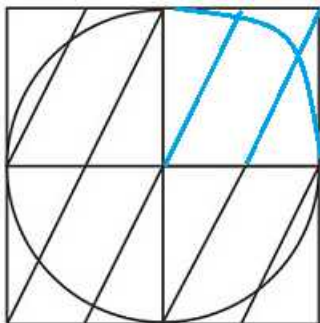
=> Ans - (C)

Question 21

A

B

C

D

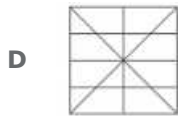**Answer:** C

Explanation:
When we complete the above figure, we get :

Now, the third figure resembles the above missing part in blue colour.

=> Ans - (C)

Question 22

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

A

B

C

D
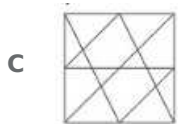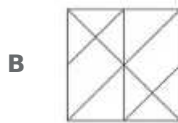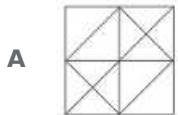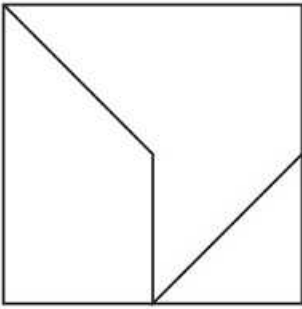
Answer: B

Explanation:

The question figure is embedded in the following figure :

=> Ans - (B)

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
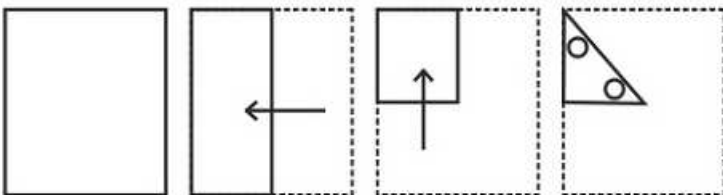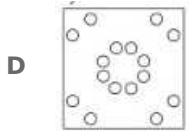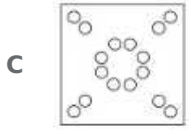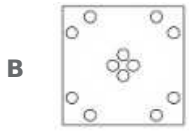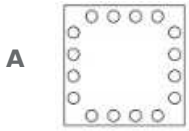
Answer: D

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
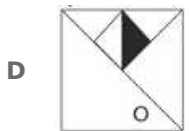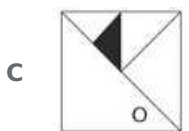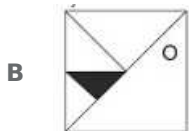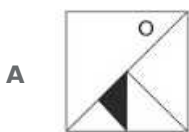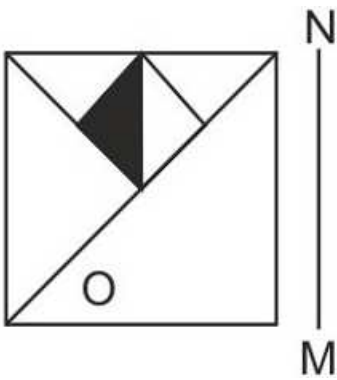
Answer: D

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 figure will appear as left diagonal in the mirror image, and thus the first two options are eliminated.

Also, the black and white triangles of the rhombus will be swapped, thus third option is also not possible.

=> Ans - (D)

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 30, 41 etc and 'Z' can be represented by 77, 68 etc. Similarly, you have to identify the set for the word 'NEST'.

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

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

A   67,12,75,78

B   12,14,58,75

C   44,41,55,78

D   44,31,79,76

Answer: A

Explanation:
(A) : 67,12,75,78 = **NEST**

(B) : 12,14,58,75 = EDYS

(C) : 44,41,55,78 = JKST

(D) : 44,31,79,76 = JCST

=> Ans - (A)

General Awareness

Instructions
For the following questions answer them individually

Question 26

A commodity market has a _____ structure, if there is one seller of the commodity, the commodity has no substitute, and entry into the industry by another firm is prevented.

A   Perfect Competition

B   Monopoly

C   Oligopoly

D   Monopolistic Competition

Answer: B

Question 27

The short run average cost curve is ____ shaped.

A   U

B   V

C   X

D   W

   Answer: A

Question 28

"Foreign jurisdiction" is listed in the _____ list given in the Seventh Schedule in the Constitution of India.

A   Union

B   State

C   Global

D   Concurrent

   Answer: A

Question 29

Which Fundamental Right in the Indian Constitution includes abolition of untouchability?

A   Right to Liberty and Personal Freedom

B   Right to Freedom of Religion

C   Right to Equality

D   Cultural and Educational Rights

   Answer: C

Question 30

_____, succeeded to the throne of Ferghana in 1494 when he was only 12 years old.

A   Humayun

B   Akbar

C   Jahangir

D   Babur

   Answer: D

Question 31

Name the British General who was responsible for the Jallianwalla Bagh massacre.

A   Hastings

B   Cornwallis

C   Dyer

D   Dalhousie

  Answer: C

Question 32

_____ influences the rate of weathering and humus in soil formation.

A   Flora & Fauna

B   Time

C   Parent rock

D   Climate

  Answer: D

Question 33

The longitudes of main land of India extends between _____.

A   68°7' E and 97°25' E

B   68°7' W and 97°25' W

C   68°7' N and 97°25' N

D   68°7' S and 97°25' S

  Answer: A

Question 34

A healthy adult man has, on an average, _____ (in millions) of RBCs mm-3 of blood.

A   5 - 5.5

B   4 - 4.5

C   3 - 3.5

D   6 - 6.5

  Answer: A

Question 35

The female sex organs in a flower is the _____.

A   Zoospores

B   stamen

C   pistil

D   Chlorophyceae

Answer: C

Question 36

Animals in which the cells are arranged in two embryonic layers are called _____.

A   Diploblastic

B   Extoderm

C   Triploblastic

D   Endoderm

Answer: A

Question 37

An image formed by a plane mirror, that cannot be obtained on a screen is called _____.

A   Virtual image

B   Real image

C   Inverted image

D   Erect image

Answer: A

Question 38

The force exerted by a magnet is an example of _____.

A   Non-contact force

B   Muscular force

C   Contact force

D   Electrostatic force

Answer: A

Question 39

A _____ is a collection of letters, digits, punctuation characters, and so on.

A Numbers

B String

C Arrays

D Boolean Values

   Answer: B

Question 40

A change in which a substance undergoes a change in its physical properties is called _____.

A Chemical Properties

B Physical Properties

C Chemical Change

D Physical Change

   Answer: D

Question 41

The process of depositing a layer of zinc on iron is called _____ .

A Galvanisation

B Crystallisation

C Rusting

D Baking

   Answer: A

Question 42

_____ is the most ecologically relevant environmental factor.

A Water

B Temperature

C Light

D Soil

   Answer: B

Question 43

_____ project is an ambitious Union Government Project which integrates the efforts to clean and protect the Ganga river in a comprehensive manner.

A Uday Desh Ka Aam Nagrik

B Urja Ganga

C Ek Bharat Shrestha Bharat

D Namami Ganga Yojana

   Answer: D

Question 44

Who discovered Antarctica?

A James Cook

B Friedrich Miescher

C George Crum

D Christopher Columbus

   Answer: A

Question 45

The final of 2014 FIFA Men's World Cup was played between which of the following countries?

A France and Argentina

B Germany and France

C Germany and Argentina

D Italy and Germany

   Answer: C

Question 46

Bikaner school, Jaipur school, Marwar school, Mewar school are all schools of?

A Miniature paintings

B Rajput paintings

C Madhubani paintings

D Cave paintings

   Answer: B

Question 47

Which film won the award for Best Film at the 61st Filmfare Award held in 2016?

A Tubelight

B Sultan

C Bajirao Mastani

D Badlapur

Answer: C

Question 48

Which of the statements given below are correct?
1. The author of 'My Country My Life' is L.K Advani.
2. 'Wings of Fire' is an Autobiography of Subhash Chandra.
3. The author of 'The Great Indian Novel' is Shashi Tharoor.

A 1 and 2

B 2 and 3

C 1 and 3

D 1, 2 and 3

Answer: C

Question 49

IMF has predicted that the global economy would grow at _____ % in 2017.

A 5.5

B 4.5

C 3.5

D 2.5

Answer: C

Question 50

Citizen of which neighbouring country does not require a passport or visa to enter India?

A Pakistan

B Bangladesh

C Nepal

D China

Answer: C

English

Instructions
For the following questions answer them individually

Question 51

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'.
My sister had a tough time (a:/removing the chewing gum that (b:/stuck with her hair.(c:/No Error (d:

A   1

B   2

C   3

D   4

   Answer: C

Question 52

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'.
The Captain along with (a:/his team has been (b:/invited to the function.(c:/No Error (d:

A   1

B   2

C   3

D   4

   Answer: D

Question 53

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.
Common adverse _____ of this medication include, bleeding, nausea and vomiting.

A   affects

B   effect

C   effects

D   affect

   Answer: C

Question 54

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.
_____ to my political rival's statement, the data reveals crime has not increased in this country.

A   Accepting

B   Contrary

C Reference

D Assisting

  Answer: B

Question 55

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

A Lucid

B Patent

C Abyss

D Palpable

  Answer: C

Question 56

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

A Vault

B Azure

C Lid

D Dimension

  Answer: D

Question 57

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

A Rebuke

B Snub

C Nix

D Praise

  Answer: D

Question 58

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

A   Ebb

B   Fade

C   Extend

D   Wane

   Answer: C

Question 59

In the following question, out of the four alternatives, select the alternative which best expresses the meaning of the idiom/phrase.
Ball is in your court

A   Put the blame on the other person.

B   Request someone to return your belonging.

C   It is up to you to make the next decision or step.

D   To tell someone politely about his/her mistake.

   Answer: C

Question 60

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

A   Two best teams compete with each other.

B   A situation wherein someone has the privilege of enjoying two different opportunities.

C   Gods who rule heaven and earth.

D   A person who is respected even by his enemies.

   Answer: B

Question 61

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".
The shoes were very expensive; I couldn't afford (to buying) them.

A   buying

B   to buy

C   bought

D no improvement

Answer: B

Question 62

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".
After they (had finished) eating they went for a walk.

A no improvement

B have finished

C finish

D will finish

Answer: A

Question 63

In the following question, out of the four alternatives, select the alternative which is the best substitute of the words/sentence.
Interrupt (a public speaker) with derisive or aggressive comments or abuse

A Heckle

B Soothe

C Allay

D Dulcify

Answer: A

Question 64

In the following question, out of the four alternatives, select the alternative which is the best substitute of the words/sentence.
Not being what it purports to be

A Legitimate

B Palpable

C Evident

D Spurious

Answer: D

Question 65

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

A castegated

B castigatad

C castigated

D casttigated

   Answer: C

Question 66

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

A poseses

B posesses

C possesses

D posseses

   Answer: C

Question 67

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.
The room which yielded so
X-the fourth floor of a
Y-boarding-house in Bleecker Street
Z-much satisfaction to the two boys was on

A XZY

B YXZ

C ZXY

D ZYX

   Answer: C

Question 68

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.
By the time government
X-offices or educational institutions
Y-open, many daylight
Z-hours are already lost

A YZX

B ZXY

C XYZ

D XZY

   Answer: C

Question 69

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.
Sarla changed the curtains.

A   Sarla changes the curtains.

B   The curtains were changed by Sarla.

C   The curtain was changed by Sarla.

D   Sarla was the one by whom the curtains were changed.

   Answer: B

Question 70

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.
My father said to the stranger, "Where do you live?"

A   My father asked the stranger where he lives.

B   My father asked the stranger where he has been living.

C   My father asked where he lives to the stranger.

D   My father asked the stranger where he lived.

   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.

My coat's pretty warm, even though it cost £9.99 and came from the flea market. It had a label in it, CHRISTIN BIOR, but I cut it out as soon as I got home. You can't work where I work and have CHRISTIN BIOR in your coat. You could have a genuine vintage Christian Dior label. Or something Japanese. Or maybe no label because you make your clothes yourself out of retro fabrics that you source at Alfies Antiques. But not CHRISTIN BIOR.

As I get near Catford Bridge, I start to feel a knot of tension. I really don't want to be late today. My boss has started throwing all sorts of hissy fits about people "swanning in at all times," so I left an extra twenty minutes early, in case it was a bad day. I can already see: It's a god-awful day. They've been having a lot of problems on our line recently and keep cancelling trains with no warning. Trouble is, in London rush hour, you can't just cancel trains. What are all the people who were planning to get on that train supposed to do? Evaporate?

Question 71

What aspect of the coat she wanted to hide?

A   That is was too warm.

B   That it was a cheap copy.

C   That it was expensive.

D   That it was from a luxury market.

   Answer: B

Question 72

The author would prefer to be seen wearing all of the following types of clothes, except?

A   Those with the Christian Dior label.

B   Any Japanese brand.

C   Clothes stitched by herself.

D   Those with the CHRISTIN BIOR label.

   Answer: D

Question 73

Why is her boss angry?

A   Because he has started suffering from fits.

B   Because it is a bad day.

C   Because she was late the day before.

D   Because employees are coming late to work.

   Answer: D

Question 74

What has been the problem with London trains lately?

A   The trains have become awful.

B   There are more trains during rush hour.

C   People are late to work because of train delays.

D   Trains are cancelled without prior intimation.

   Answer: D

Question 75

Which of the following situations creates a 'bad day' for the author?

A   Being caught wearing a cheap brand coat.

B   Cancelled trains during London rush hour.

C   When other employees are on time but she is late.

D   Having to spend money on expensive clothes.

   Answer: B

Mathematics

Question 76

What is the HCF of 6345 and 2160?

A   45

B   135

C   270

D   15

   Answer: B

Explanation:
6345 = 3*3*3*5*47

2160 = 3*3*3*5*16

HCF = product of common prime factors = 3*3*3*5 = 135

So the answer is option B.

Question 77

A can do a work in 24 days and B in 40 days. If they work on it together for 10 days, then what fraction of work is left?

A   1/2

B   1/3

C   2/3

D   3/4

   Answer: B

Explanation:
Let the total work = LCM of 24 & 40 = 120 units

A's efficiency = 120/24 = 5

B's efficiency = 120/40 = 3

In 1day they can complete 8 units of work

In 10days they can complete 80 units of work

work left =120-80 = 40 units

fraction of work left = 40/120 = 1/3

So the answewr is option B.

Question 78

What is the circumference (in cm) of a circle whose area is 616 sq cm?

A   44

B 66

C 22

D 88

 Answer: D

Explanation:
Area of a circle = 616

$\pi r^2 = 616$

$\frac{22}{7} r^2 = 616$

$r = 14 cm$

circumference = $2\pi r = 2 \times \frac{22}{7} \times 14 = 88$

So the answer is option D.

Question 79

If a retailer offers a discount of 20% on the marked price of his goods and thus ends up selling at cost price, what was the % mark up?

A 20

B 25

C 30

D 40

 Answer: B

Explanation:
Let markup percentage = x

$\frac{100-20}{100} \times \frac{100+x}{100} \times (CP) = CP$

$\frac{80}{100} \times \frac{100+x}{100} = 1$

$(0.8)(1 + 0.01x) = 1$

$1 + 0.01x = 1/0.8$

$x = 25\%$

So the answer is option B.

Question 80

In an MBA selection process, the ratio of selected to unselected was 11:2. If 40 less had applied and 20 less selected, the ratio of selected to unselected would have been 10:1. How many candidates had applied for the process?

A 220

B 260

C 300

D 340

Answer: B

Explanation:
 selected candidates = 11x

unselected candidates = 2x

total candidates = 13x

If 40 less had applied and 20 less selected, the ratio of selected to unselected would have been 10:1

then applied candidates = 13x - 40

selected candidates = 11x - 20

unselected candidates = 13x - 40 -(11x - 20) = 2x - 20

ratio of selected to unselected = 10:1

(11x-20)/(2x-20) = 10/1

11x - 20 = 20x - 200

9x = 180

x = 20

candidates applied = 13x = 13(20) = 260

So the answer is option B.

Question 81

What is the average of all natural numbers from 21 to 39?

A 30

B 31

C 29

D 28

  Answer: A

Explanation:
total numbers = 19 (odd)

average of all natural numbers from 21 to 39 = $21+ \frac{19-1}{2} = 21 + 9 = 30$

So the answer is option A.

Question 82

A farmer buys a goat and a sheep for Rs 3500. He sold the sheep at a profit of 20 percent and the goat at a loss of 10 percent. If he sold both the animals at the same price, then the cost price (in Rs) of the cheaper animal was?

A 2000

B 1500

C 1750

D 2250

  Answer: B

Explanation:
Let CP of sheep = x

then, CP of goat = 3500 - x

He sold the sheep at a profit of 20 percent and the goat at a loss of 10 percent and sold at the same price

SP of sheep = SP of goat

$$\frac{100+20}{100} \times x = \frac{100-10}{100} \times (3500 - x)$$

$$\frac{120}{100} \times x = \frac{90}{100} \times (3500 - x)$$

$$1.2 \times x = 0.9 \times (3500 - x)$$

$$x = 1500$$

CP of sheep = x = 1500

then, CP of goat = 3500 - x = 3500 - 1500 = 2000

CP of cheaper = 1500/-

SO the answer is option B.

Question 83

Two numbers are 10% and 20% lesser than a third number respectively. By how much percent is the second number should be enhanced to make it equal to the first number?

A 10

B 15

C 12.5

D 8

Answer: C

Explanation:
Let those 3 numbers are x, y&z;

x = 0.9z & y = 0.8z

y = 0.8(x/0.9)

(0.9/0.8)y = x

1.125 y = x

so to make y equal to x, it should be enhanced by (1.125-1)*100% = 12.5%

So the answer is option C.

Question 84

Two cars A and B travel from one city to another, at speeds of 35 km/hr and 45 km/hr respectively. If car B takes 2 hours lesser time than car A for the journey, then the distance (in kms) between the two cities is?

A 345

B 375

C 415

D 315

Answer: D

Explanation:

Let distance = X km

difference in time = 2hrs

x/35 - x/45 = 2

10x = 3150

x = 315km

So the answer is option D.

Question 85

At what rate of compound interest (in %) per annum will a sum of Rs. 15,000 become Rs. 18,150 in 2 years?

A 11

B 10

C 9

D 12

   Answer: B

Explanation:

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

$18150 = 15000\left(1 + \frac{R}{100}\right)^2$

$1.21 = \left(1 + \frac{R}{100}\right)^2$

$1.1 = 1 + \frac{R}{100}$

$0.1 = \frac{R}{100}$

$R = 10\%$

So the answer is option B.

Question 86

If 9x - [5(2x + 1)/2] = 9/2, then the value of x is?

A 7/4

B -7/4

C 4/7

D -4/7

   Answer: A

Explanation:

9x - [5(2x + 1)/2] = 9/2

9x - (10x+5)/2 = 9/2

9x - 5x - 5/2 = 9/2

4x = 14/2

x = 7/4

So the answer is option A.

Question 87

If a + b = 4 and ab = -21, then what is the value of $a^3 + b^3$?

A 370

B 158

C 185

D 316

  Answer: D

Explanation:
$a^3 + b^3 = (a+b)^3 - 3ab(a+b) = (4)^3 - 3(-21)(4) = 64 + 252 = 316$

So the answer is option D.

Question 88

The sum of a fraction and 10 times its reciprocal is 37/4. What is the fraction?

A 5/4

B 4/5

C 3/4

D 4/3

  Answer: A

Explanation:
Let that fraction be $\frac{1}{x}$

$\left(\frac{1}{x}\right) + 10x = 37/4$

$\Rightarrow (4 + 40x^2) = 37 \times x$

$\Rightarrow 40x^2 - 37x + 4 = 0$

$\Rightarrow (x - \frac{5}{40})(x - \frac{32}{40}) = 0$

$\Rightarrow (x - 1/8)(x - \frac{4}{5}) = 0$

$\Rightarrow x = 1/8 \, or \, 4/5$

$\Rightarrow \text{fraction} = \frac{1}{x} = 8 \, (or) \, 5/4$

so the answer is option A.

Question 89

The 2nd and 6th term of an arithmetic progression are 8 and 20 respectively. What is the 20th term?

A 56

B 65

C 62

D 59

  Answer: C

Explanation:

T_2 = a + d = 8-------(1)

T_6 = a + 5d = 20-------(2)

on solving (1) AND (2)

d = 3 & a = 5

T_{20} = a + 19d = 5 + 19(3) = 62

So the answer is option C.

Question 90

What is the reflection of the point (3, 2) in the line y = -2?

A (-7 , 2)

B (-3 , -6)

C (-7 , -2)

D (3 , -6)

  Answer: D

Explanation:

(diagram)

from the diagram answer = (3 , -6)

So the answer is option D.

Question 91

What is the distance between the points (3 , 6) and (-2 , -6)?

A 15

B 13

C 11

D 12

  Answer: B

Explanation:

distance = $\sqrt{(y_2 - y_1)^2 + (x_2 - x_1)^2} = \sqrt{(-6 - 6)^2 + (-2 - 3)^2} = \sqrt{(144 + 25)^2} = 13$

So the answer is option B.

Question 92

What is the equation of a line which has 3 as x-intercept and -5 as y-intercept?

A 3x - 5y = 15

B 5x - 3y = 15

C   5x + 3y = 15

D   3x + 5y = 15

  Answer: B

Explanation:
eq.of a line in intercept form is $\frac{x}{a} + \frac{y}{b} = 1$

$\Rightarrow \frac{x}{3} + \frac{y}{-5} = 1$

$5x - 3y = 15$

So the answer is option B.

Question 93

ΔABC is right angled at B. BD is an altitude. DC = 9 cm and AC = 25 cm. What is the value of BC (in cm)?

A   12

B   18

C   16

D   15

  Answer: D

Explanation:
(diagram)

ΔABC and ΔBDC are similar

AC/BC = BC/DC

25/x = x/9

$225 = x^2$

x = 15 = BC

So the answer is option D.

Question 94

What is the value of Tan 45° - 1/√3 Sec 60°?

A   (1 - 2√3)/2

B   (√2 - √3)/√6

C   (3 - 2√3)/3

D   (1 - 2√2)/2

  Answer: C

Explanation:
Tan 45° - 1/√3 Sec 60° = 1 - (1/√3) (2) = 1 - 2/√3 = (√3-2)/√3 = [(√3-2)/√3][√3/√3] = (3 - 2√3)/3

So the answer is option C.

Question 95

Δ DEF is right angled at E. If m∠D = 30°, what is the length of DE (in cm), if EF = 6√3 cm?

A 18

B 12√3

C 18√3

D 12

  Answer: A

Explanation:
(diagram)

Tan 30° = 6√3/x

1/√3 = 6√3/x

x = 18

So the answer is option A.

Question 96

If Sin θ = 20/29 , then what is the value of Sec θ ?

A 29/21

B 29/20

C 21/20

D 21/29

  Answer: A

Explanation:
Sin θ = 20/29

cos θ = 21/29 (∵ $29^2 = 20^2 + 21^2$)

Sec θ = 29/21

So the answer is option A.

Instructions

The bar graph shows the internal storage capacity (in GB) of 5 smartphones - A, B, C, D and E. Study the diagram and answer the following questions.
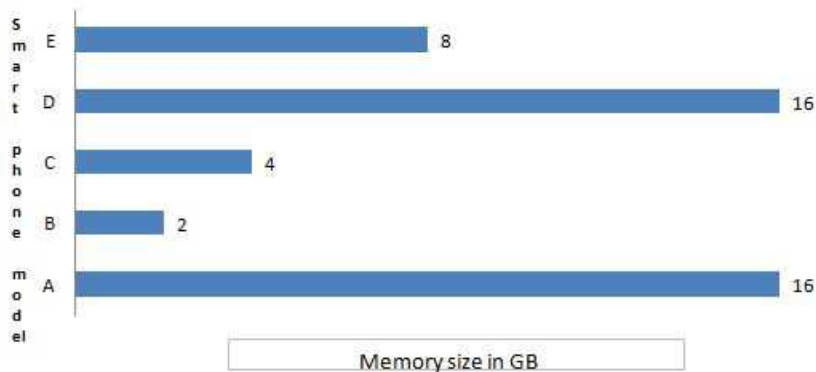
Question 97

Which two models have the same memory size?

A E and C

B   B and D

C   D and A

D   A and E

    Answer: C

Explanation:

A and D have 16GB size.

So the answer is option C.

Question 98

Even if memory of model C was doubled it would be lesser (in GB) than that of model A by?

A   8

B   12

C   4

D   16

    Answer: A

Explanation:

A-2C = 16 - 2(4) = 16 - 8 = 8

So the answer is option A.

Question 99

Even if memory of model D was halved it would be greater (in %) than that of model B by?

A   300

B   400

C   75

D   50

    Answer: A

Explanation:

If memory of D is halved, 8GB

memory of B = 2GB

D would be greater (in %) than that of model B by $\frac{8-2}{2} \times 100 = 300$

So the answer is option A.

Question 100

If price of model E is increased by Rs 12,000 and its memory is doubled the sales remain unchanged. This implies that people are willing to pay Rs _____ per extra GB of memory space.

A   1200

B   1500

C 1000

D 800

   Answer: B

Explanation:

Increase in price = 12000

increase in memory = 8GB

price per 1GB = 12000/8 = 1500

So the answer is option B.