2020 - TCS NQT

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SLOT 1:

NUMERICAL ABILITY

Question 1- What is the sum (in RS) which when divided among X Y Z in the proportion 3:5:7 provides rupees 8000 more to Z then what it would have done to him when the proportion is 11 : 15 : 19?

1. 180000
2. 120000
3. 175000
4. 135000

Answer: 180000

Question 2- If the positive square root of (root 90 + root 80) is multiplied by (root (2 -1)) and the product is raised to the power of four, the result would be

1. 100
2. 1600
3. 11520000
4. 10

Answer: 10 (use the TCS calculator directly to find the answer of this question)

Question 3- A man has to travel 50 km in 2 hours. He could cover 20 km in one hour, and then had to stop for 10 minutes for refueling. By What factor should he increase his speed with reference to that during the first hour so as to be able to complete the journey as per schedule?

1. 1.5
2. 1.8
3. 1.2
4. 2.4

Answer: 1.8

Question 4- X is four times as efficient as Y in respect of doing a particular work. Working together they complete the work in 16 days. In how many days y working alone will be able to half the work?

1. 80
2. 20
3. 40
4. 60

Efficiency of X = 4a
Efficiency of Y = a
Time taken by both to complete a work = 16 days
1/4a + 1/a = 1/16
(1+4)/4a = 1/16
5/4a = 1/16
a = 20
Hence X will do the work in 20 days
And Y will do the work in 80 days
Thus Y will do half of work in 40 days

Question 5- If5^x 3^y = 225 x 405, find the value of x ^2y -3x

1. 27
2. 81
3. 125
4. 25

Question 6- The collection of numbers which comprise the data given below is arranged in ascending order.
(3,7,9, N - 1,15,18,19,20)
If the median of the data is 12.5, what is the value of N?

1. 10.5
2. 11.5
3. 11
4. 12

Answer - 11
Median of the even data = (sum of middle terms) / 2
= [(N - 1) + 15] / 2 = 12.5

Question 7 - How much percentage is (0.025% of 240% of 1.5) of 0.9?

1. 10
2. 0.01
3. 0.1
4. 1

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Question 8 - After purchasing two copies of the same book, X sold them respectively at 0.8 and 1.4 times their cost prices. What was the percentage gain earned or loss incurred by X?

1. 10% loss
2. 5% gain
3. 10% gain
4. 5% loss

Answer: 10% gain

Let the C.P of each copy be Rs 100

ATQ one copy is sold at 0.8 x 100 = 80

One copy is sold at 1.4 x 100 = 140

Total money spent in buying the copies = Rs 200

Total money earned after selling the copies = Rs (80 + 140) = Rs 220

Total gain of Rs 20. Therefore gain% = 10%.

Question 9: A file of cadets consisting of ten rows and five columns measures 420 m in length along the direction of their marching. How much time (in hours and minutes) would it take to march for a stretch of 3 km, if the stride of each cadet is 80 cm and he takes 57 strides per minute?

1. 1 hr 10 min
2. 1 hr 20 min
3. 1 hr 24 min
4. 1 hr 15 min

Question 10: Two vessels X and Y of capacities one and two litres respectively are completely filled with mixtures of two chemicals A and B. The ratio by volume of the chemicals A and B in X and Y are 3:2 and 4:5 respectively. The contents of A and B are mixed and the combination is kept in a vessel C of capacity of four litres. How many litres of Chemical A should be added to the combination so as to make the ratio of A to B equal to 1:1?

1. 1/270
2. 1/67
3. 1/68
4. Not visible

Question 11 -The diameter of a pizza is 30 cm. What is the area(in cm ^2)of the upper surface of a sector of the pizza whose arc length is 8 cm?

1. 120
2. 120π
3. 60π
4. 60

Answer: Area of sector when arc is given = (L x r)/2

Where L = length of arc and r = radius of the circle

Here L = 8 cm and r = 15 cm

Therefore, Area =(8 x15)/2 = 60cm^2

Question 12- In a competitive exam, 5 marks are awarded for every correct answer and for every wrong answer, 2 marks are deducted. Sathwik scores 32 marks in the examination. If 4 marks had been awarded for each correct answer and 1 mark had

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been deducted for each incorrect answer, Sathwik would have scored 34 marks. If Sathwik attempted all the questions, how many questions were there in the test ?

1. 14
2. 12
3. 20
4. 26

Answer: 26 Answer
In given Question:-
Correct answer =5x and wrong answer=2y
Correct answer =4x and wrong answer= 1y
So,
5x -2y = 32
4x-2y =34 -----*2
Now
5x-2y =32
8x-4y=68
By solving
3x=36
x=12
Now to find _y'
5*12 -2y =32
60 -2y= 32
y=14
By adding x+y
12+24 =26
Questions in the test =26

Question 13- An item was sold at a profit of 12% after giving a discount of 12.5% on the list price. What would be the gain or loss percentage if a discount of 25% is given on the list price ?

1. 2.5% gain
2. 2.5% loss
3. 4% loss
4. 4% gain

Answer - 4% loss

Question 14- The mean of a set of data is 5. What will be the mean if ten is subtracted from each data ?

1. -5
2. 5
3. 10
4. -15

Answer = -5
Explanation
let the number of data be n
so sum of data = mean * number of data
= 5 n
now 10 is subtracted to each data
so now sum becomes = 5n-10n =-5n

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mean = sum of data /no. of data
=-5n/n = -5
so new mean becomes -5

Question 15- If (x+10)% of 240 is 60% more than x% of 180, then 15% of (x+20) is what percent less than 25% of x ?

1. 15
2. 19(1/21)
3. 16
4. 15(1/2)

Questions 16- What is the diameter (in cm) of a solid right circular cylinder whose height is 6 cm and the area of the curved surface is five times the combined area of the two flat surfaces

1. 2.4
2. 0.91.2
3. 3

Answer: 1.2
Here h = 6 cm
C.S.A = 2πrh
2πrh = 5(2πr)
2 x x r x 6 = 10 x x r^2
12 x π x r = 10 x xr^2
12 = 10r
1.2 = r

Questions 17- A sum invested on simple interest grows to Rs 22500/- and Rs 25500/- is seven and nine years respectively. What is the rate percentage of the interest ?

1. 7.5
2. 9.6
3. 12.5
4. 13.5

Answer:

Question 18- What is the value of (0.0000128)^17?

1. 0.5
2. 5
3. 0.2
4. 2

Solution :- ⅕= 0.2

Question 19 - The variation in temperatures throughout the day in a desert town was studied on the basis of the record of minimum and maximum temperatures which were 36 and degrees centigrade respectively. WHat was the standard deviation in degree centigrade?

1. **12**
2. **22**
3. **14**
4. **28**

Question 20 - A sum of Rs. 30000 invested in a scheme where the interest gets compounded annually and grows to Rs. 51840 in three years. How much interest

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in Rs. would have got accrued in six months in the same scheme had the interest been compounded quarterly?

1. 3075
2. 2975
3. 3024
4. 3126

Question 21- The diameter of a pizza is 30 cm. What is the area (in of the upper surface of a sector of the pizza whose arc length is 8 cm?

1. 120
2. 120
3. 60
4. 60

Question 22- 96 men were engaged for a project of constructing a railway track of the length of 18 km in four weeks. After one week it was observed that the work of 4m was completed. How many additional men should be engaged for timely completion of the project?

1. **16**
2. **14**
3. **15**
4. **12**

Question 23- If n is an integer such that 1nn352 is a six-digit number exactly divided by 24, what will be the sum of the possible value of n?

1. 27
2. 15
3. 9
4. 21

Solution:-

Question 24

What is the mean deviation of the data 8,9,12,15,16,20,24,30,32,34?

A.10.2

B.8

C.0

D.9.6

Solution:-

Step 1

Find the mean

8+9+12+15+16+20+24+30+32+34/10

=200/10

=20

Find the distance of each value from that mean

Value	Distance from 20
8	12

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9	11
12	8
15	5
10	4
20	0
24	4
30	10
32	12

34 14

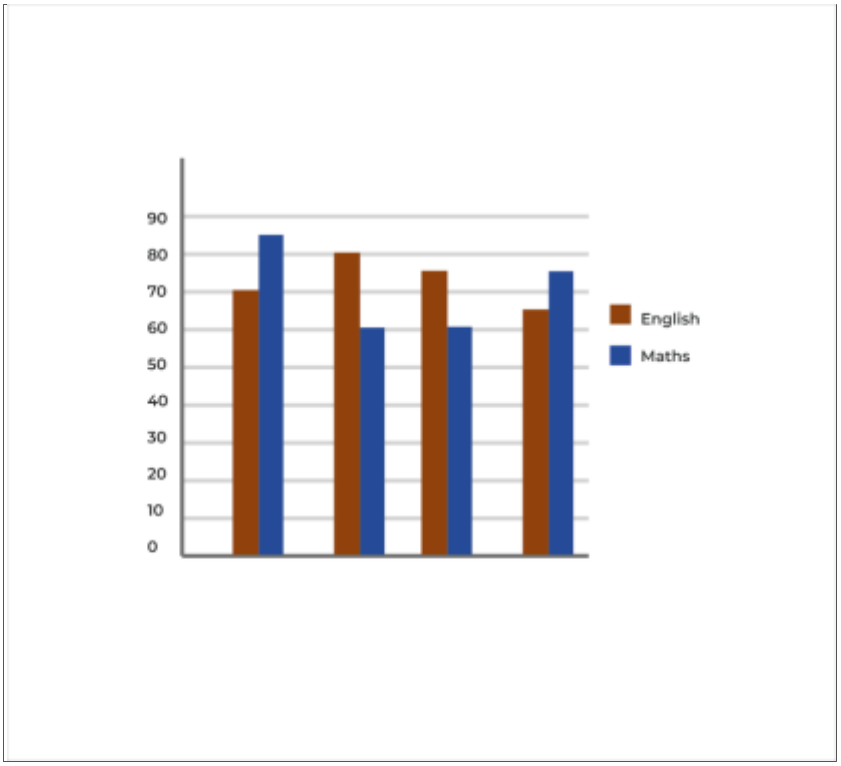
Step 3:- Find the mean of those distances

12+11+8+5+4+0+4+10+12+14/10

80/10=8

Question 25 - The marks scored by a student out of 100 in English and Mathematics at four consecutive monthly test held in 2019 are presented through a Bar Graph shown below. In each case the marks is a multiple of five.

In which month is the difference of marks scored in the two subjects the highest ?



1. Jan
2. Mar
3. Apr
4. Feb

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Question 26-

The temperature (in }Fof a patient was recorded (using a clinical thermometer with smallest division equal to 1^{\circ}F) during 6 AM to 8PM on four consecutive days,A,B,C,D at intervals of two hours and the results are presented in a tabular form given below. The reading at a particular time provides the average body temperature (ABT) of the patient for the previous one hour. He is supposed to be given temperature controlling medicine (TCM) at the bedtime if the total duration of his ABT remaining above 99^{\circ}F during the 14 hour period of record is four hours or more. on which day, TCM was required?

Day/Time	0600	0800	1000	1200	1400	1600	1800	2000
A	101	100	99	98	99	98	100	100
B	98	99	100	100	99	99	100	102
C	98	99	99	101	100	99	99	100
D	98	98	99	99	99	98	98	99

- A
- D
- B
- C

VERBAL ABILITY

Question 1 - For the four sentences S1 to S4 paragraph below, sentences S1 and S4 are given. From the options P Q and R, choose appropriate sentences for the following.

S1- Gandhi does not reject machinery as such

S2-

S3-

S4 what he objects to is the craze for machinery, not machinery as such.

P: He says that today, machinery merely helps a few to ride on the back of millions.

Q: And adds that the spinning wheel is a machinery, a little toothpick is a machine.

R: He observes ―How can I be against machinery when I know that even this body is a most delicate piece of machinery‖

1. QP
2. QR
3. RQ
4. PQ

Ans PQ

Question 2 : Which of the following sentences does NOT use informal language?

1. Did you locate our office quite easily?
2. You will be working with different managers during your training
3. **We shall endeavour to inform you of the position in two weeks time**
4. Is there anything else you want to ask?

Answer - C.. Use of endeavour is formal. Informal would be try.

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Question 3: One part of the sentence below may contain an error. Identify the part. If there is no error, choose _No Error‘
Everyday life have become more complicated with the advancement in mobile technology.

1. **Everyday life have become**
2. No error
3. advancement in mobile technology
4. more complicated with the

Answer - A . everyday life has become (life is singular)
Question 4 : The following three sentences can be revised into one better sentence. Choose the sentence that is the best revision:
I was at the fair. I got lost. I got scared

1. I am scared after I am lost at the fair
2. I went to the fair and got scared as i was lost
3. I am lost the fair so i am too scared
4. **I got lost at the fair and was scared**

Answer - D
This sentence combines all the elements of the 3 sentences with a proper use of conjunction and tenses.
Question 5 - Government have been promising the eradication of child labour in high-risk industries in India for many years. However, almost 100 million children are still not able to go to school, and around 10 million are working in (1) _____industries. India has the biggest child population of 380 million in the world_____number of children who are forced to earn a living.
Blank 1
A. honorary B. hazardous C. handicraft D. hardware
Blank 2.
A. largest B. lowest C. latest D. loudest
Question 6 : Which of the following sentences does NOT use informal language?

1. Did you locate our office quite easily?
2. You will be working with different managers during your training
3. **We shall endeavour to inform you of the position in two weeks time**
4. Is there anything else you want to ask?

Answer - C.. Use of endeavour is formal. Informal would be try.
Question: 7 One part of the sentence below may contain an error. Identify the part. If there is no error, choose _No Error‘
Everyday life have become more complicated with the advancement in mobile technology.

1. **Everyday life have become**
2. No error
3. advancement in mobile technology
4. more complicated with the

Answer - A . everyday life has become (life is singular)
Question 8: The following three sentences can be revised into one better sentence. Choose the sentence that is the best revision:
I was at the fair. I got lost. I got scared

1. I am scared after I am lost at the fair

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2. I went to the fair and got scared as i was lost
3. I am lost the fair so i am too scared
4. **I got lost at the fair and was scared**

Answer - D

This sentence combines all the elements of the 3 sentences with a proper use of conjunction and tenses.

Question 9 : Henry looks carefully into the telescope which lets him see far, far away, as far as the distant nebulae on the far edges of the Milky Way. Henry is an _____. He looks at the sky and stars in particular. Even though he spends much of his time looking at detailed computer reports, which are just lists and lists of numbers. His_____thing about his job is looking through the telescope. And today he is very excited. He isn't sure yet, but he thinks he has seen a dense cloud which might be the beginning of a new star.

Blank 1 - A. astrologer B - astrologist C -astronomer D - Astronaut

Blank 2 - A. favoring B - pleasant C - pleasing D - favourite.

1. D , B
2. C , D
3. A , A
4. B , C

Answer - B (C , D)

Henry is an **astronomer** (who studies the stars and planets) and
his **favourite** thing is to look at the sky.

Question 10 : Fill in the blanks with the most appropriate set of words from the options given below.

What did the painter do_____himself from falling?

When he felt the ladder_____he grabbed the gutter to save himself from falling.

1. To save / began slipping
2. To save / beginning to slip
3. To save / begin to slip
4. For saving / began to slip

Answer -

Explanation -

Question 11: You are going to read a text about an artist. Some sentences are missing from the text. Choose from the list. (A-C) the most appropriate sentence for each gap (1-2) in the text. There is one extra sentence that you do not need to use.

Kahini held her first solo show in 1998, the entire proceeds of which went to the Helen Keller institute for the Deaf and Blind in Mumbai._____Encountering the pathless terrain of inner landscape, the artist engages in a restless re-examination of idea and image._____She has also taken part in several art camps.

1. In her fifth solo show with acrylic and oil-on-canvas paintings in the series titled _Metamorphosis' held recently at the Mumbai's Jehangir Art Gallery. She showed for the first time her abstract work as well.
2. Her work has been acquired by corporate houses and also forms part of private collections.
3. She has participated in a group show along with 50 women artists to celebrate International Women's Day

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1. A,C
2. C,B
3. B,A

Question

Question 13: Aisha had been very successful managing her team in Edinburgh and was asked by the company to lead a remote team for an important two- year project. Keen to demonstrate her leadership_____. Aisha got her team members together for a remote meeting.But right from that first meeting , she realized that this was going to be a different challenge.

1. _____Lucia kept asking about really specific details while Aisha was hoping to use the meeting to get to know the team members and identify..... Archies and Lucia..... and when they didn't speak, there was an uncomfortable silence. Valentina hardly said a word._____Without these visual clues, Aisha had no idea whether people were .....

1. No one had their cameras on, so there was none of the usual communication through body language and facial expressions.
2. Compared to a face-to-face meeting the remote team is not preferred by all the managers
3. For a start, Archie was late for the meeting by about 15 minutes because of the _technical problems'.

1. A , C
2. B , A
3. A , B
4. **C , A**

Answer - C, A

C starts with (for a start) hence this will be the beginning.

A talks about lack of visual clues which satisfies the sentence following the blank.

LOGICAL ABILITY

Question 1: In the following diagram, the triangle stands for ―males‖ , the circle stands for ―doctors‖ ,, the rectangle stands for ―government employed‖ , the hexagon stands for ―corona warriors‖ . The numbers in different segments show the number of persons for that segment.

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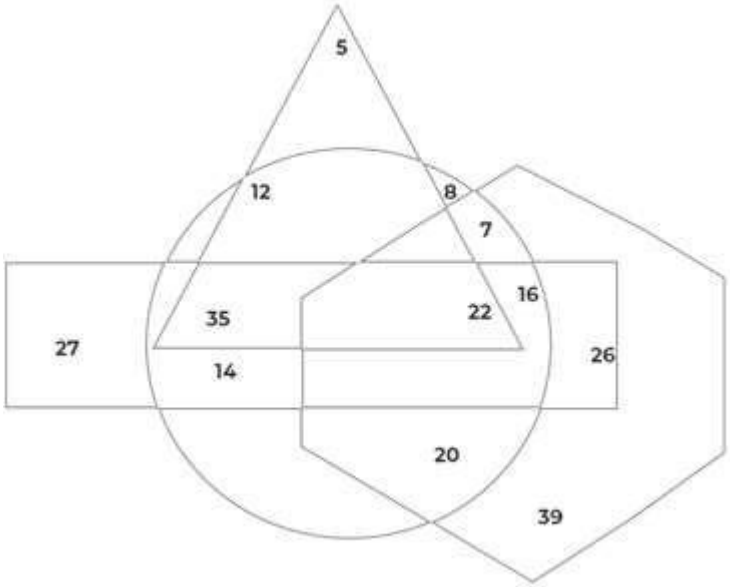
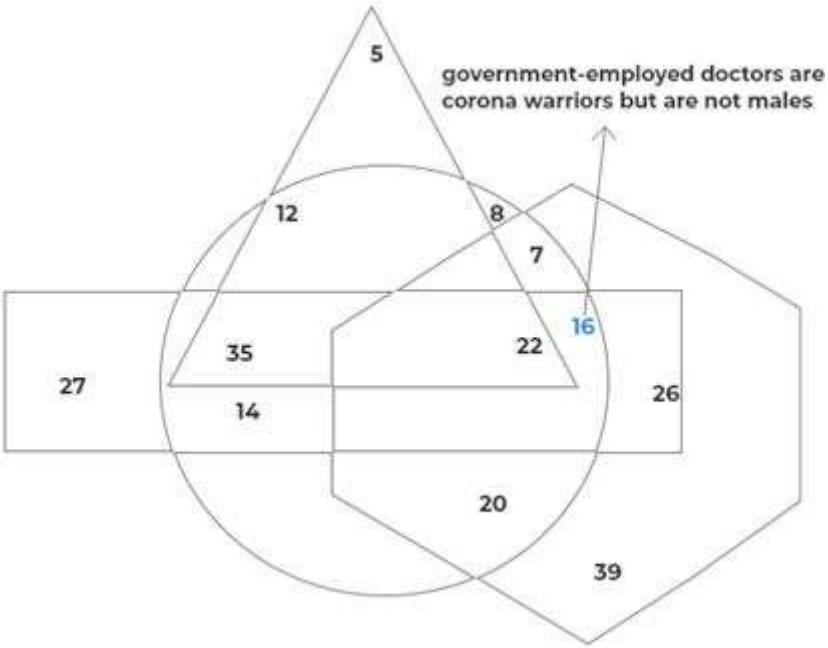


How many government-employed doctors are corona warriors but are not males?

1. 14
2. 23
3. 16
4. 17

Solution:



Question 2: In the following diagram, the rectangle stands for tennis fans, the circle stands for athletes, and the triangle stands for students, and the square stands for hockey players. The number in different segments show the number of persons.

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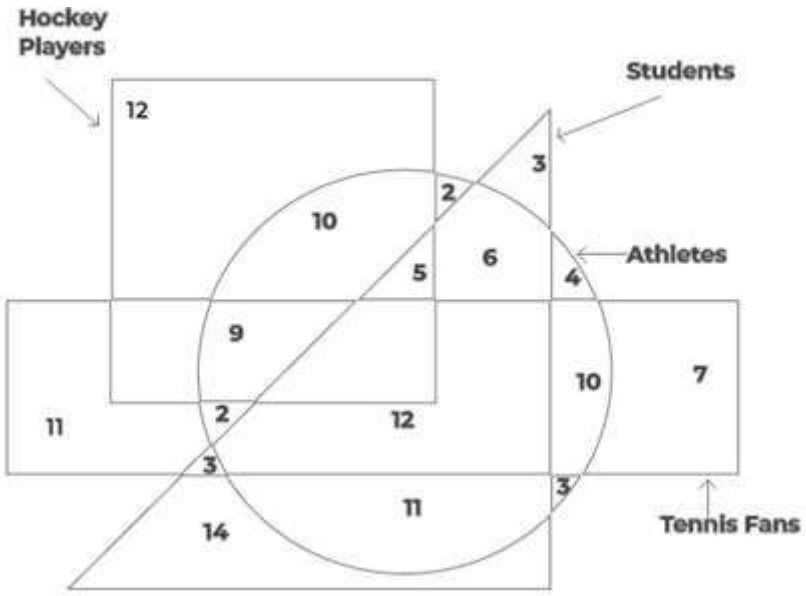
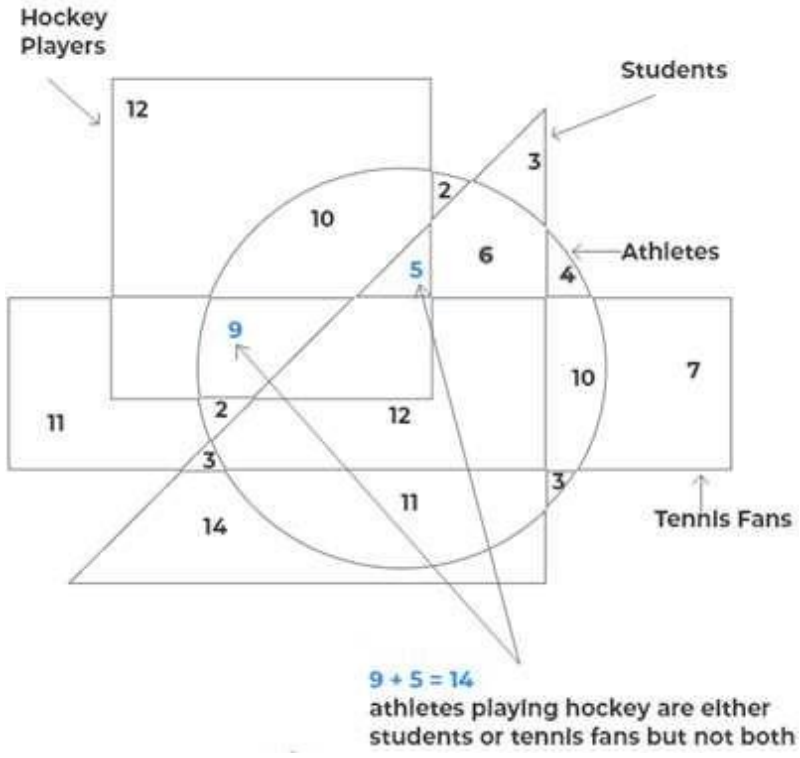


How many athletes playing hockey are either students or tennis fans but not both

1. 18
2. 15
3. 14
4. 3

Solution:



Questions: In a certain code A%B means A is the brother of B, A&B means A is the mother of B, A@B means A is the daughter of B, A$B means A is the father of B, A#B means A is the sister of B.
If K $ Z % U & H # N @ T, how T is related to U?

1. Sister
2. Brother
3. Husband
4. Wife

K $ Z = K is the father of Z (1)
Z % U = Z is the brother of U (2)
U & H = U is the mother of H (3)
H # N = H is the sister of N (4)
N @ T = N is the daughter of T (5)
From statement 3, 4, and 5
As U is the mother of H, H is the sister of N and N is the daughter of T complies that U and T are sisters

Questions: Four friends A, B, C, and D have one of the four professions i.e., Doctor, architect, engineer, and lawyer. Each friend belongs to one of the four different cities, Chandigarh, Indore, Lucknow, and Pune. A is not a lawyer or engineer. The doctor is from Lucknow, D is an architect. The lawyer is from Pune. The engineer is neither from Chandigarh nor Pune. D is not from Pune. C is from Indore. Which of the following statements is correct about B?

1. B is the lawyer and belongs to Chandigarh
2. B is Doctor and belongs to Pune
3. B is a doctor and belongs to Chandigarh
4. B is a lawyer and belongs to Pune

Solution:

- A is not a lawyer or engineer
- The doctor is from Lucknow
- D is an architect
- The lawyer is from Pune
- The engineer is neither from Chandigarh nor Pune
- D is not from Pune
- C is from Indore

Question 2: The number of employees working in six different departments in two companies A and B are given below. Study the given data and answer the questions that follow.

Company A

Departement	**No of Employees**
Marketing	256
HR	72
Production	504
Accounts	68

SIX PHRASE

Operations	256
Planning	46
Total	**1202**

Company B

Department	**No of Employees**
Marketing	524
HR	108
Production	736
Accounts	122
Operations	146
Planning	58
Total	**1694**

What is the percentage difference between the employees working in the production department of company A and B.

1. 3.21%
2. 2.27%
3. 1.52%
4. 1.15%

Solution:

Question-If both company A and B merge together to form company C,then what is the percentage of marketing and accounting employees in total employees of company C?

1. 33.49%
2. 37.59

Question: Select the most appropriate option to fill in the blank.

The final report on the project was_____into three parts.

1. Broken out
2. Broken off
3. Broken up
4. Broken away

Answer:

Question: A statement is followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement.

Statement-

Various government across the world have issued strict guidelines for the public to wear masks and wash hands regularly to safeguard their health during covid-19 pandemic.

SIX PHRASE

Assumptions-

1. Covid-19 Pandemic is serious health issue.
2. There are ways by which people can save themselves from Covid-19 pandemic.

Options-

1. Neither I nor II is implicit
2. Both I and II are implicit
3. Only II is implicit
4. Only I is implicit

Answer-Both I and II are implicit

Q3. What is the wrong number in the following series?

CMQ , FPT , JTX ,OYC , UFI

a.OYC

b.JTX

C.FPT

d.UFI

Solution:- UFI is the wrong number in the series.

Lets take CMQ

Difference between letter C and Letter M is 10 and difference between M and Q is 3 ..same with OYC , JTX,FPT

But not with UFI

Question:- In a certain code , K*N means K is the brother of N , K+N means K is the husband of N, K x N means K is the mother of N and K ÷ N means K is the sister of N , then which of the following expressions means C is the daughter of Y.?

1. Y + R x C * H ÷ V
2. Y + R x H ÷ C *V
3. Y + R x H * C ÷ V
4. Y x R + H * C ÷ V

Solution:-

Question:- Given below is a question followed by two statements , I and II, each containing some information. Decide which of the statement(s) is/ are sufficient to answer the question.

How is A related to C?

Statements:-

1. A is the wife of B and B is the brother of C.
2. C is the son of D

1. Statement I alone is sufficient.
2. Statement II is sufficient.
3. Both I and II together are sufficient
4. Both I and II together are not sufficient.

Solution:- Both 1 and 2 together are not sufficient

PROGRAMMING LOGIC

Question 1- What will be the output

```
public class Main {
public static void main(String[] args)
{
```

SIX PHRASE

```
        int $ = 5;
}
}
```

1. Nothing will print
2. Symbol not found Error.
3. Runtime Error
4. Compile time error

Answer- 1.Nothing will print

Question 2-

```
class Main
{
    public static void main(String args[])
    {
        int i,j,x=0;
        for(i=0;i<5;i++)
            for (j=0;j<5;j++){
                x=(i+j-1);
                 System.out.print(x);
                 break;
                }
          System.out.print(x);
      }
 }
```

What will be printed when the above sample code is executed.
Enter your answer ONLY as a NUMERAL, in the box.

Answer- -101233

Question 3- Which of the following options best suits for _Memory Leak Occurred‘

1. Resource allocation pending while debugging the code
2. Program releases resources allocated in the memory
3. Program does not free the memory which is allocated dynamically
4. Occurs due to address assignment failure.

Answer- Program does not free the memory which is allocated dynamically.

Question 4- What among the following is a server based paradigm

1. Request for Information(RFI)
2. Data Validation Routine
3. Cloud computing
4. Total cost of Ownership.

Answer- Request for information

Question 5- When we declare constant pointer to integer, we CANNOT change:

1. Value pointed by pointer
2. Either addressing pointer variable or value at that address
3. Changes are not permitted
4. Address in pointer variable.

Answer- Address in the pointer variable.

SIX PHRASE

Question 6- Given here is a scenario. Consider the graph algorithm and answer the given question.
John wants to go to different locations of the city in which he is. He has listed all of them down. However he wants to visit one location before visiting some other location. What application of graphs can he use to determine that location?

1. DFS
2. Dijsktra's
3. BFS
4. Topological Sorting

Answer- Dijkstra's

Question 7 - Find Prefix and Postfix for the below Infix problem statement:

1. Prefix Expression: 11 20 5 20 15 - 6 5 ^^ * / +
   Postfix Expression: + 11 / 20 * 5 ^^ - 20 15 6 5
2. Prefix Expression: + 11 / 20 * 5 ^^ - 20 15 6 5
   Postfix Expression: 11 20 5 20 15 - 6 5 ^^ * / +
3. Prefix Expression: 11 20 15 20 5 - ^^ * 6 5 / +
   Postfix Expression: + 20 / 11 * 5 - 20 ^^ 15 6 5
4. Prefix Expression: 11 20 5 20 15 - ^^ * / + 6 5
   Postfix Expression: + 11 / ^^ - 20 * 5 20 15 6 5

Question 8 - There are two integer numbers X and Y, and the value of X and Y is in between 0 to 25. User stores the value under 5 bit number. How many minimum bit is required to store the result of the below expression?
Res = 3*(X-Y)

1. 7
2. 5
3. 8
4. 6

Answer-

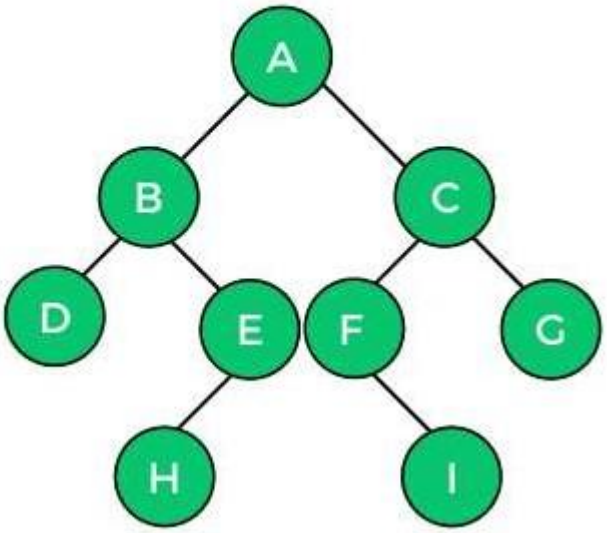
Question 9- Write the name of library of functions which is used to perform arithmetic operations on BigInteger and BigDecimal

Answer- MathContext

This question in TCS NQT was wrong. Incorrect options were given ....

Question 10 - Consider the following tree what will be the preorder traversal.

SIX PHRASE



1. A B C D E F G H I
2. D H E B I F G C A
3. H I D E F G B C A
4. D H E B A F I G C

Answer- ABDEHCFIG

CODING

There is a JAR full of candies for sale at a mall counter. JAR has the capacity N, that is JAR can contain maximum N candies when JAR is full. At any point of time. JAR can have M number of Candies where M<=N. Candies are served to the customers. JAR is never remain empty as when last k candies are left. JAR if refilled with new candies in such a way that JAR get full. Write a code to implement above scenario. Display JAR at counter with available number of candies. Input should be the number of candies one customer can order at point of time. Update the JAR after each purchase and display JAR at Counter.
Output should give number of Candies sold and updated number of Candies in JAR.
If Input is more than candies in JAR, return: ―INVALID INPUT‖
Given,
N=10, where N is NUMBER OF CANDIES AVAILABLE
K =< 5, where k is number of minimum candies that must be inside JAR ever.

Example 1:(N = 10, k =< 5)

Input Value

3

Output Value

SIX PHRASE

NUMBER OF CANDIES SOLD : 3
NUMBER OF CANDIES AVAILABLE : 7

Example : (N=10, k<=5)

Input Value

0

Output **Value**

INVALID INPUT
NUMBER OF CANDIES LEFT : 10

Solution in C

```
#include <stdio.h>
int main()
{
    int n=10, k=5;
    int num;
    scanf("%d",&num);
    if(num>=1 && num<=5)
    {
        printf("NUMBER OF CANDIES SOLD : %d\n",num);
        printf("NUMBER OF CANDIES LEFT : %d",n-num);
    }
    else
    {
        printf("INVALID INPUT\n");
        printf("NUMBER OF CANDIES LEFT : %d",n);
    }
    return 0;
}
```

Solution in C++

```
#include <iostream>
using namespace std;
int main()
{
    int n=10, k=5;
    int num;
    cin>>num;
    if(num>=1 && num<=5)
    {
       cout<<"NUMBER OF CANDIES SOLD : "<<num<<"\n";
       cout<<"NUMBER OF CANDIES LEFT : "<<n-num;
    }
    else
    {
       cout<<"INVALID INPUT\n";
       cout<<"NUMBER OF CANDIES LEFT : "<<n;
    }
    return 0;
}
```

SIX PHRASE

Solution in Java

```
import java.util.Scanner;
class Main{
   public static void main(String[] args) {
         int n = 10, k = 5;
         int num;
         Scanner sc = new Scanner(System.in);
         num = sc.nextInt();
         if(num >= 1 && num <= 5) {
               System.out.println("NUMBER OF CANDIES SOLD : " + num);
               System.out.print("NUMBER OF CANDIES LEFT : " + (n - num));
         } else {
               System.out.println("INVALID INPUT");
               System.out.print("NUMBER OF CANDIES LEFT : " + n);
         }
   }
}
```

Selection of MPCS exams include a fitness test which is conducted on ground. There will be a batch of 3 trainees, appearing for running test in track for 3 rounds. You need to record their oxygen level after every round. After trainee are finished with all rounds, calculate for each trainee his average oxygen level over the 3 rounds and select one with highest oxygen level as the most fit trainee. If more than one trainee attains the same highest average level, they all need to be selected.

Display the most fit trainee (or trainees) and the highest average oxygen level.

Note:

1. The oxygen value entered should not be accepted if it is not in the range between 1 and 100.
2. If the calculated maximum average oxygen value of trainees is below 70 then declare the trainees as unfit with meaningful message as ―All trainees are unfit‖
3. Average Oxygen Values should be rounded.

Example 1:

INPUT VALUES

95
92
95
92
90
92
90
92
90

OUTPUT VALUES

Trainee Number : 1
Trainee Number : 3

SIX PHRASE

Note:

Input should be 9 integer values representing oxygen levels entered in order as

Round 1

Oxygen value of trainee 1

Oxygen value of trainee 2

Oxygen value of trainee 3

Round 2

Oxygen value of trainee 1

Oxygen value of trainee 2

Oxygen value of trainee 3

Round 3

Oxygen value of trainee 1

Oxygen value of trainee 2

Oxygen value of trainee 3

Output must be in given format as in above example. For any wrong input final output should display "INVALID INPUT"

Solution in C

```
#include <stdio.h>
int main()
{
	int trainee[3][3];
	int average[3] = {0};
	int i, j, max=0;
	for(i=0; i<3; i++)
	{
		for(j=0; j<3; j++)
		  {
			scanf("%d", &trainee[i][j]);
			if(trainee[i][j]<1 || trainee[i][j]>100)
			{
			    trainee[i][j] = 0;
		    }
		  }
	}
	for(i=0; i<3; i++)
	{
		for(j=0; j<3; j++)
		{
			average[i] = average[i] + trainee[j][i];
		}
		average[i] = average[i] / 3;
	}
	for(i=0; i<3; i++)
	{
		if(average[i]>max)
		{
			max = average[i];
```

```
            }
        }
        for(i=0; i<3; i++)
        {
            if(average[i]==max)
            {
                printf("Trainee Number : %d\n",i+1);
            }
            if(average[i]<=70)
            {
                printf("Trainee is Unfit");
            }
        }
        return 0;
}
```

Solution in C++:

```
#include <iostream>
using namespace std;
int main()
{
        int trainee[3][3];
        int average[3] = {0};
        int i, j, max=0;
        for(i=0; i<3; i++)
        {
                for(j=0; j<3; j++)
                {
                        cin>>trainee[i][j];
                                if(trainee[i][j]<1   ||
trainee[i][j]>100)
                        {
                            trainee[i][j] = 0;
                        }
                }
        }
        for(i=0; i<3; i++)
        {
                for(j=0; j<3; j++)
                {
                                average[i]  =  average[i]  +
trainee[j][i];
                }
                average[i] = average[i] / 3;
```

```
        }
        for(i=0; i<3; i++)
        {
                if(average[i]>max)
                {
                        max = average[i];
                }
        }
        for(i=0; i<3; i++)
        {
                if(average[i]==max)
                {
                                cout<<"Trainee  Number  :
"<<i+1<<"\n";
                }
                if(average[i]<=70)
                {
                        cout<<"Trainee is Unfit";
                }
        }
        return 0;
}
```

Solution in Java:

```
import java.util.Scanner;
class Main {
    public static void main(String[] args) {
            int[][] trainee = new int[3][3];
            int[] average = new int[3];
            int max = 0;
            Scanner sc = new Scanner(System.in);
            for(int i = 0; i < 3; i++) {
                    for(int  j  =  0;  j  <  3;  j++)  {
                            trainee[i][j] = sc.nextInt();
                               if(trainee[i][j] < 1 ||
trainee[i][j] > 100) {
                                        trainee[i][j] = 0;
                            }
                    }
            }
            for(int i = 0; i < 3; i++) {
                    for(int j = 0; j < 3; j++) {
```

SIX PHRASE

```
                                    average[i]  =  average[i]  +
trainee[j][i];
                        }
                        average[i] = average[i] / 3;
                }
                for(int i = 0; i < 3; i++) {
                        if(average[i] > max) {
                                max = average[i];
                        }
                }
                for(int i = 0; i < 3; i++) {
                        if(average[i] == max) {
                                  System.out.println("Trainee
Number : " + (i + 1));
                        }
                        if(average[i] <= 70) {
                                 System.out.print("Trainee  is
Unfit");
                        }
                }
        }
}
```

SLOT 2:

NUMERICAL ABILITY

Q1. What is the fourth proportional of 0.006,1.2 & 6/25 ?

A. 36
B. 48
C. 4.8

SIX PHRASE

D. 3

Answer: Option B

Q2. The present ages of three brothers are in the proportion 12:14:17. The difference between the ages of the elder and the eldest is 6 years. What will be the proportion of their ages after four years?

A. 14:16:19

B. 40:46:55

C. 16:18:21

D. 13:15:18

Answer: Option A

Q3. Two ants of length 1cm and 1.2 cm crawl in opposite directions with average speeds 2 and 1 mm per second respectively. How many seconds will they take to cross each other?

A. 4.4

B. 2.8

C. 0.4

D. 1.5

Answer: Option A

Q4. The index numbers of five commodities are 121,123,125,126,128 and the weights assigned to these are respectively 5,11,10,8,6. Then what is the weighted average index number?

A. 123.8

B. 124.2

C. 124.6

D. 125.2

Answer: Option C

Q5. Which one among the following has the least value?

A. √75 - √74

B. √74 - √73

C. √77 - √76

D. √76 - √75

Answer: Option C

Q6. The Range and the Standard Deviation of a data are R & S respectively. With the shift of origin of the data change(s) occur in the value(s) of:

A. Both R & S

B. Neither R nor S

C. R only

D. S only

Answer: Option B

Q7. A sum was lent to X for three years by an organisation who fixed a yearly rate of 10% compound Interest for repayment along with the condition of recovery in equal installments of Rs.31944. What percentage (correct to two decimal places) above the borrowed amount had X to pay the organization?

A. 18.43

B. 21.25

C. 16.52

D. 20.63

SIX PHRASE

Answer: Option D

Q8. A retailer purchased 25 identical toys for a price Rs P and sold some of them for Rs P. If he calculated his profit as 8%, with selling price as base instead of cost price then how many did he sell?

A. 24

B. 20

C. 21

D. 23

Answer: Option D

Q9. The Table below presents the percentage marks obtained by three students A, Y, Z in the four components of assessment, A, B, C, D of a paper whose respective weightages are 4, 3, 2, 2, 1. Students/Marks A B C D X 78 85 72 76 Y 65 68 64 73 Z 82 76 81 75 What is the ratio of the average percentage of X in A, B to that of Y, Z combined in C, D?

A. 324:283

B. 326:293

C. 28:25

D. 81:73

Answer: Option D

Q10. A city water supply tank has two inlet pipes X and Y, which can fill it in 20 and 30 hours respectively, and an outlet pipe Z which can empty a full tank in 40 hours. If the tank is empty and the taps are opened in succession for one hour each, and the process continues, in how many hours will the tank get filled?

A. 49 1/4

B. 51 3/7

C. 49 ½

D. 49 1/7

Answer: Option C

Q11. A sum of Rs.12500 is invested on 1st January 2016 at 4% simple interest p.a. How much interest in RS. gets accrued on the end of the day on 1st July 2016?

A. 240

B. 400

C. 250

D. 500

Answer: Option C

Q12. What is the real value of (0.000314 + 0.000198)^(1/3)?

A. 0.04

B. 0.08

C. 0.8

D. 0.4

Answer: Option B

Q13. What is the simplified value of (10/15*6)[22/2/5 of [(64-2*8) +2]-⅔?

A. 6

B. 4

C. 5

D. 2

Answer: Option B

SIX PHRASE

Q14. A man who has to walk 11Km, finds that in 30 minutes he has travelled two-ninth of the remaining distance. What is his speed in Km/h?
A. 4.8
B. 4
C 4.2
D.4.5
Answer: Option B
Q15. Six square plots are connected end to end to obtain a rectangular plot area 726 m2 . If we take, π=22/7, by what factor is the perimeter of this plot more than that of the circumference of a circle of radius 10m?
A. 1.45
B. 2.45
C. 2.1
D. 2.8
Answer: Option B
Q16. The mean and standard deviation of the data which is comprised of a set of ten positive numbers are 8 and 2 respectively. If the sum of squares of time along with ten numbers is 599.What is the tenth number?
A. 7
B. 8
C. 9
D. 11
Answer: Option C
Q17. With what value should the highest quantity in data 65,52,14,26,18,35,32,38 be replaced so that the mean and median become equal?
A. 51
B. 66
C. 64
D. 53
Answer: Option D
Q18. A work is assigned to 6 men and 12 women and they could complete it in 3 days. It was also observed that together they can do 7 times as much work a man and a woman can do.In how many days would 14 women have done the work?
A. 10
B. . 6
C. 12
D. 9
Answer: Option D
Q19. If the HCF of 180 and 432 is expressed as (180m + 432n), where m and n are integers, then what is the difference between m and n?
A. 3
B. 7
C. 9
D. 8
Answer: Option B
Q20.If (x+10)% of 240 is 60% more than x% of 180, then 15% of (x+20) is what percent less than 25% of x?

SIX PHRASE

A. 16
B. 15
C. 15 ½
D. 191 /21
Answer: Option A
Q21. A sales representative _s commission is 6% on all sales upto Rs.15000nand 5% on all sales exceeding this. He remits Rs.47350 to his company after deducting his commission. What were the total sales?
A. Rs.49000
B. Rs.47500
C. Rs.50500
D. Rs.50000
Answer: Option D
Q22. The sales (in multiples of hundred) of three brands A, B, C of car from a showroom during four consecutive years, 2012 - 2015 have been presented through the Bar Graph given below. In which year is the sale of A and B together is 125% of that of C? TCS NQT 2020 | 24th Oct 1 pm to 4 pm Slot Analysis
A. 2013
B. 2014
C. 2015
D. 2012
Answer: Option D
Q23. The List Price of an item was kept 40% above what the shopkeeper had paid to the manufacturer. On selling the item a profit of 8.64% was earned after allowing two successive discounts, the first one of which was 20%. What was the percentage of the second discount?
A. 3.25
B. 3.6
C. 3.84
D. 3
Answer: Option D

Question . What is the fourth proportional of 0.006, 1.2 and 6/25?
A.4.8
B.3.6
C.36
D.48
Solution:- Let the fourth proportional be 'x'.
So, 0.006 : 1.2::6/25 :x
When a:b:c:d are in proportion then a/b = c/d
0.006/1.2 = 6/25 / x
x= 48
Option D
Question . A man who has to walk 11 km, finds that in 30 minutes he has travelled two-ninth of the remaining distance. What is his speed in km/hr?
1. 4.2
2. 4

SIX PHRASE

3. 4.5
4. 4.8

Solution:- distance =11km= 11*2/9 = 22/9

Time =30 min = 30/60=½ hr

x= distance / time

x= 22 /9 / ½

x= 44/9

x= 4.8

Solution :- d

Question :Which one among the following has the least value?

A. √75 - √74

B. √74 - √73

C. √77 - √76

D. √76 - √75

Solution:

Squaring all we get the equation in the form of (a^{2}-b^{2})=(a+b)(a-b)

Applying formula we get

(77+76)(77-76)=(153)(1)=153

(75+74)(75-74)=(149)(1)=149

(76+75)(76-75)=(151)(1)=151

(74+73)(74-73)=(147)(1)=147

Hence 147 is least among all

Hence the required answer will be .

B. √74 - √73

Question 4 :The least price of an item was kept 40% above what the shopkeeper had paid to the manufacturer.on selling the item a profit of 8.64% was earned after allowing two successive discounts,the first one of which was 20%.what was the percentage rate of second discount?

1. 3
2. 3.84
3. 3.25
4. 3.6

Question 5 :A hollow cylinder of radius 5cm takes six turns about its axis on a horizontal plane,and thereby covers a distance which is 6π times its length.What is the area of the curved surface (in cm^2) of the cylinder?

A.100 π

B.120π

C. 80π

D. 50π

Question 6 :The Range and the standard deviation of a data are R & S respectively.With the shift of the origin of the data,change(s) occur in the value(s) of:

1. Both R & S
2. R only
3. Neither R nor S
4. S only

SIX PHRASE

Solution: C. Neither R nor S
As a general rule, the median, mean, and quartiles will be changed by adding a constant to each value. However, the range, interquartile range, standard deviation and variance will remain the same
Question 7 :With what value should be highest quantity in the data 65,52,14,26,18,35,32,38 be replaced so that the mean and median become equal?

1. 66
2. 53
3. 64
4. 51

Questions:The index numbers of five commodities are 121,123,125,126,128 and the weight assigned to these are respectively 5,11,10,8,6.Then what is the weighted average index number?

1. 123.8
2. 125.2
3. 124.6
4. 124.2

Question: The present ages of three brothers are in the proportion 12:14 :17. The difference between the ages of elder and the eldest is 6 years. What will be the proportion of their ages after 4 years?

1. 40:46:55
2. 14:16:19
3. 42:41:15
4. 14:16:18

Answer : Option b
Explanation
14 - 17 = 3 parts = 6 years
= 1 part is 2 year
24, 28, 34 = present
28,32,38 = After 4 years
14:16:19
Question: A sum was lent to X for three years by an organization, who fixed a yearly rate of 10% compound interest for repayment along with the condition of recovery in equal annual installments of Rs. 31944. What percentage (correct to 2 decimal places) above the borrowed amount had X to pay to the organization?

1. 16.52
2. 18.43
3. 20.63
4. 21.25

Answer : Option d
Explanation

$$= x\left[\frac{\left(1+\frac{100}{r}\right)^3}{1}+\frac{\left(1+\frac{100}{r}\right)^2}{1}+\frac{\left(1+\frac{100}{r}\right)}{1}\right]$$

$$P = 31944\left[\frac{\left(1+\frac{10}{r}\right)^3}{1}+\frac{\left(1+\frac{10}{r}\right)^2}{1}+\frac{\left(1+\frac{10}{r}\right)}{1}\right]$$

$$= 31944\left[\frac{1000}{1331} + \frac{100}{121} + \frac{10}{11}\right]$$

= 31944[0.75 + 0.82 + 0.90]

= 31944[2.47]

P = 78901.68

Interest = 78901.68 - (3 x 31944)

= 16930

$$\frac{16930}{78901} \times 100 = 21.4$$

Question: With what value should the highest quantity in the data : 65, 52, 14, 26, 18, 35, 32, 38 be replaced so that the mean and medium become equal?

1. 51
2. 53
3. 66
4. 64

Answer - Opton b

Explanation

Let's sort the given data - 14, 18, 26, 32, 35, 38, 52, 65

mean = 35

media = $\frac{32 + 35}{2} = 33.5$

Difference = 35 - 33.5 = 1.5

Value = 1.5 x 8 = 12

65-12 = 53

Question: The mean and the standard deviation of a data which is comprised of a set of ten positive numbers are 1 and 2 respectively. If the sum of squares of 9 among the 10 members is 599,what is the 10th number

1. 9
2. 8
3. 7
4. 11

Question:A work is assigned to 6 men and 12 women, they could complete it in 3 days. It was also observed that together they can do 7 times as much work a man and a woman can do. In how many days would 14 women have done the work?

1. 6
2. 12
3. 9
4. 10

Answer : Option C

Explanation

6m + 12w = 3 days .....(1)

6m + 12w = 7 (m + w)

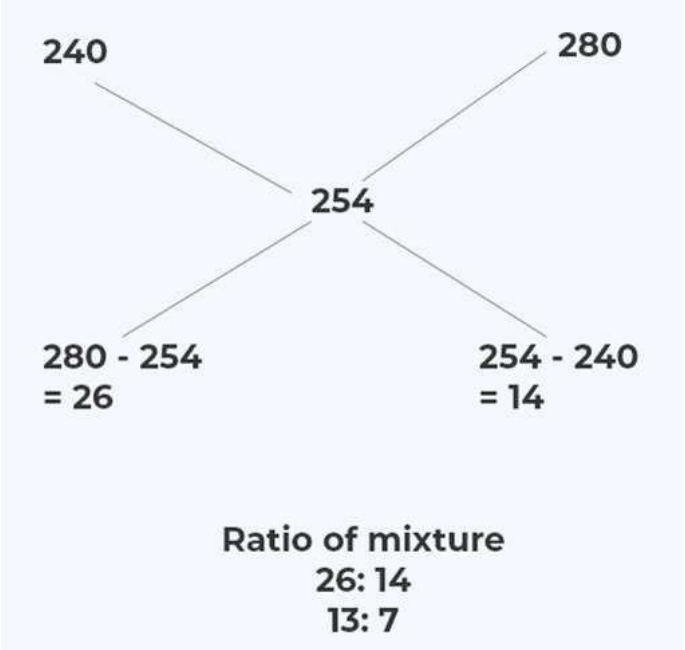
6m + 12w = 7m + 7w

SIX PHRASE

6m + 12w = 6m + 1m +7w
6m + 5w + 7w = 6m + 1m + 7w
1 man = 5 woman
30w + 12w = 3 days
42w = 3 day
14 women = $\frac{42 \times 3}{4}$
= 9 days
In this question the options provided by TCS are wrong
Question: In what ratio should two varieties of tea priced at Rs. 240 and Rs 280 respectively. Be mixed so that the cost of the combination is Rs 254per kg?

1. 3: 2
2. 7: 6
3. 13: 12
4. 4: 3

Solution:



Hence the mixture will be in ratio 13: 7
Question: What is the real value of (0.000314 + 0.000198)(1/3)

1. 0.8
2. 0.08
3. 0.4
4. 0.04

Solution:
0.000314 + 0.000198 = 0.000512
(0.000512)1/3
(0.08)(3 * 1/3)
0.08

Question: The table below presents the percentage marks obtained by the three students X, Y, and Z in the four components of assessment A, B, C, D, of a paper whose respective weightages are 4, 3, 2, 1.

Students/Marks	A	B	C	D
X	78	85	72	76
Y	65	68	64	73
Z	82	76	81	75

What is the ratio of the average percentage of X in A, B to to that of Y,Z combined in CD

1. 28: 25
2. 326: 293
3. 342: 283
4. 81:73

Solution:

Average Marks obtained by X in A and B = (78 + 85)/2

$$\frac{163}{2}$$

Average marks obtained by Y in C and D =

$$\frac{137}{2}$$

Average marks obtained by Z in C and D =

$$\frac{156}{2}$$

Average of X and Y combined

$$\frac{\frac{137}{2}+\frac{156}{2}}{2}$$

$$\frac{293}{4}$$

Ratio of X and Y, Z combined

X : (Y and Z)

$$\frac{163}{2}:\frac{293}{4}$$

326: 293

New Question:

Question: A city water supply tank has two inlet pipes X, and Y which can fill it in 20 hrs and 30 hrs respectively, and an outlet pipe Z which can empty a full tank in 40 hrs. If the tank is empty and the taps are opened in succession for one hour each, and the process contains, in how many hours will the tank get filled?

Solution:

SIX PHRASE

1. $49\frac{1}{4}$
2. $51\frac{5}{7}$
3. $49\frac{1}{2}$
4. $49\frac{1}{7}$

Solution:

Question: Six square plots are connected end to end to obtain a rectangular plot of area 726 m2. If we take pi = 22/7 by what factor is the perimeter of this plot more than that of circumference of a circle of radius 10 m?

1. 1.45
2. 2.8
3. 2.1
4. 2.45

Solution:

Area of Rectangle = 726m2

Rectangle is comprised of 6 square plots

A * A = 726/6 = 121

A = 11

Now length of the rectangle will be 6 * 11 = 66 m

Perimeter of rectangle = 2(11 + 66) = 154

Perimeter of circle of radius 10 m = 2 pi r = 2 * 22/7 * 10 = 440/7 = 62.85

By factor the perimeter of Rectangular plot is more than circular plot = 154/62.85 = 2.45

Question: A sum of Rs 12500 is invested on 1st January 2016 at 4% simple interest per annum. How much interest (in Rs) gets accrued on the end of the day on 1st July, 2016?

1. 250
2. 400
3. 500
4. 240

Solution:

SI = Prt/100

P = 12500

R = 4%

t = 6 months = 0.5 year

SI = (12500 * 4 * 0.5) / 100

SI = 125 * 2 = 250

SIX PHRASE

Question: Two ants of length 1 cm and 1.2 cm. Crawl in opposite directions with an average speed of 2 and 3 mm per second respectively. How many seconds will they take to cross each other?

1. 2.8
2. 4.4
3. 0.4
4. 1.5

Solution:

Relative speed of ants = 2 + 3 mmps = 5mmps
Effective distance = 1 + 1.2 = 2.2 cm = 22 mm
Time = distance/speed = 22/5 = 4.4

Question

A retailer purchased 25 identical toys for a price Rs P and sold some of these for price Rs P. If he calculated his profit as 8% , with selling price as base instead of cost price then how many toys did he sell.

1. 20
2. 23
3. 21
4. 24

Question

In a competitive exam, 5 marks are awarded for every correct answer and for every wrong answer, 2 marks are deducted. Sathwik scores 32 marks in the examination. If 4 marks had been awarded for each correct answer and 1 mark had been deducted for each incorrect answer, Sathwik would have scored 34 marks. If Sathwik attempted all the questions, how many questions were there in the test ?

1. 14
2. 12
3. 20
4. 26

Answer 12: 26 Answer
In given Question:-
Correct answer =5x and wrong answer=2y
Correct answer =4x and wrong answer= 1y
So,
5x -2y = 32
4x-2y =34 -----*2

Now

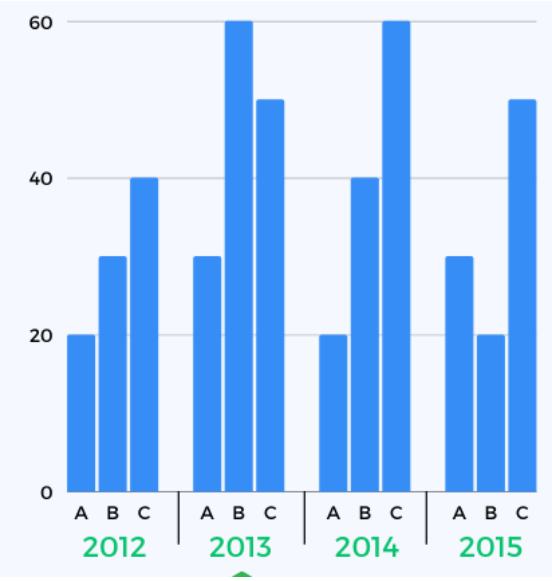
5x-2y =32
8x-4y=68
By solving
3x=36
x=12
Now to find _y‘
5*12 -2y =32
60 -2y= 32
y=14
By adding x+y

SIX PHRASE

12+24 =26
Questions in the test =26
Question. The List price of an item was kept 40% above what the shopkeeper had paid to the manufacturer.On selling the item a profit of 8.64% was earned allowing two successive discounts, the first one which was 20% . What was the percentage rate of the second discount.

1. 3.84
2. 3.6
3. 3.25
4. 3

Question:- The index number of five commodities are 121, 123 ,125 , 126, 128 and the weighs assigned to these are respectively 5, 11 ,10,8,6 . Then , what is the assigned weighted average index number?
A.125.2
B.124.2
C.123.8
D.124.6
Question - The sales(in multiples of hundred) of three brands A, B, C of car from a showroom during four consecutive years, 2012-2015 have been presented through the bar graph given below :



In which year is the sale of A and B together is 125% of that of C ?

1. 2015
2. 2014
3. 2013
4. 2012

Question:- A sales representative commision is 6% on all sales upto 15000 and 5% on all sales exceeding this. He remits Rs. 47350 to his company after deducting his commission. What were the total sales.

1. Rs 50000
2. Rs 49000
3. Rs 47500
4. Rs 50500

SIX PHRASE

Solution: 47350 = x - 6% of 15000 - 5% of (x-15000)
47350 = x - 900 - 5% of x - 5% of 15000
47350 + 900 - 750 = x - 5% of x
47500 = 95% of x
=> x = 47500 x 100/95
x = 50000
Rs. 50000
Question:- What is the simplified value of
(10- 15 x6) [22 ÷ ⅖ of [(64 - 2 x 8)] +2 - ⅖ ?

1. 6
2. 4
3. 2
4. 5

Question:- If the HCF of 180 and 432 is expressed as (180m + 432n) , where m and n are integers , then what is the difference between m and n?
A.7
B. 3
C.8
D.9
Solution:-
Question:- If (x+10)% of 240 is 60% more than x% of 180 , then 15% of (x+20) is what percent less than 25% of x?

1. $19\frac{1}{21}$
2. 15
3. $15\frac{1}{2}$
4. 16

VERBAL ABILITY

Q1. For the four sentence (S1 to S4) paragraph given below, sentences S1 & S4 are given. From the options P,Q and R, choose appropriate sentences for S2 & S3.
S-1: Some of the earliest currencies were objects from nature
S-2:
S-3:
S-4: They were similar in size, small and durable
P. Although they may seem a pretty random choice the shells had a number of advantages
Q. A notable example is cowne shells first used as money about 1200 BCE R. Counterfeiting dates to the invention of money.
A.QP
B.RQ
C.PQ

SIX PHRASE

D.PR
Answer: Option A

Q2. As it was his first job, Abhishek threw himself_____it_____a lot of enthusiasm. AInto,with
B. At,with
C. Across,in
D. Over,from
Answer: Option A

Q3. Since sunrise to sunset my grandmother would sit by her wheel spinning and reciting prayers.
A. No error
B. My grandmother would sit by her wheel
C. Spinning and reciting prayers
D. Since sunrise to sunset
Answer: Option D

Q4. For the four sentence (S1 to S4) paragraph given below, sentences S1 & S4 are given. From the options P,Q and R, choose appropriate sentences for S2 & S3.
S-1: Eight months ago, it was business as usual at the cafe.
S-2:
S-3:
S-4: I checked the miniature circuit breaker and realized it had tripped:
P: Around six in the evening there was fluctuation and the lights went off.
Q: I pulled the miniature circuit breaker switch back and it was fine again.
R: The days were warm and so the air conditioners were in full force.
A. RP
B. QR
C. PQ
D. RQ
Answer: Option A

Q5. The Candidate_____certificates the office could not verify were not permitted to appear before the interview board.
A. Whom
B. Whose
C. Who

D.Which
Answer: Option B

Q6 - Q8 Read the passage given below and answer questions. It‘s apparently humankind‘s fate never to stop writing the history of pandemics. No matter how often they occur—and they do occur with great frequency—we collectively refuse to think about them until circumstances demand it. Then, when the immediate crisis passes, we put it out of our minds as quickly as possible. And so we again are

SIX PHRASE

unprepared when the next contagion—in this case, COVID-19—bursts upon us. Richard Conniff traces this alarming cycle in ―How devastating pandemics change us,‖ this month‘s cover story. It examines our long relationship with infectious diseases, from the hard lessons we‘ve been forced to learn to the brave, and often difficult, characters who‘ve risked their lives to save us. Smallpox taught us that we could prevent disease through inoculation and, as the 1700s ended, vaccination. By the mid-1800s, cholera‘s lesson was about sanitation and the need for centralized water and sewer systems. About the same time, one man we‘ve all heard of, Louis Pasteur, and one many of us haven‘t, Robert Koch, became the co-fathers of germ theory. Tools they created are still used to identify and fight what Conniff calls ―an astonishing rogues‘ gallery of deadly pathogens.‖ And yet here we are, again, fighting on two fronts: the first, against a new coronavirus sweeping the planet to devastating effect; the second, with each other, over domestic and international politics and whether we‘re willing to pay the price of prevention. It‘s an important question for our planet. While we debate, the next pandemic draws nearer. Q6. Which statement is CORRECT according to the passage?

A. Research about vaccines is not reliable
B. All pandemics are not to be feared
C. Pandemics keep occurring periodically
D. There is no solution for a pandemic
Answer: Option C

Q7. In the fourth paragraph which pandemic is the author referring? A. An unknown one B. Small pox C. COVID-19 D. Cholera Answer: Option A Q8. What does the writer imply that we should do? A. Be vigilant about hygiene and health issues. B. Wear masks when we step out of our homes. C. Wash our hands and everything we touch carefully. D. Maintain social distancing and avoid public gatherings. Answer: Option A Q9. The part of the sentence below may contain a grammatical error. Identify the part. A high-end machine was inaugurate at the city‘s Institute of Medical Sciences which will facilitate 3000 RT PCR tests for Coronavirus in a day.

A. A high-end machine was inaugurate
B. at the city‘s Institute of Medical Sciences
C. for Coronavirus in a day
D. which will facilitate 3000 RT-PCR tests.
Answer: Option A

Q10. Select the most appropriate option to complete the sentence. It was_____a new experience for me to attend a Zoom meeting so I planned for it_____.

A. reasonably, basically
B. quite, carefully
C. really, terribly
D. surely, gently
Answer: Option B

Q11. The following sentence pair can be combined into a single sentence. Choose the sentence that best combines the two sentences without changing the meaning.

SIX PHRASE

Nikhil researched the topic well. He was able to do his Viva Voce well.
A. Nikhil researched the topic well unless he was able to do his Viva Voce well.
B. Nikhil was able to do his Viva Voce well despite he researched the topic well.
C. Nikhil researched the topic well therefore he was able to do his Viva Voce well.
D. Nikhil was able to do his Viva Voce well although he researched the topic well.
Answer: Option C

Q12. Which one of the following sentences uses formal language?
A. This presentation takes the cake!
B. Shall we put this on our agenda for the next client week?
C. I apologize for the technical glitch that occurred during our webinar yesterday.
D. I'm disappointed with the sales figures, they need to look up!
Answer: Option C

Question 1- One part of the sentence below may contain a grammatical error. Identify the part that contains the error, if there is no error in the sentence choose No Error
The college has circulated the examination schedule for its regular and supplementary examinations
A. the college has circulated the examination schedule
B. to be held next month
C.No error
D. for its regular and supplementary examinations
Answer: C
Question 2- Read the passage given below and answer questions
It"s apparently the fate of humankind never to be free of writing the history of pandemics. No matter how often they occur------ and they do occur with great frequency ----- we collectively refuse to think about them until circumstances demand it. Then, when the infection passes, we put it out of our minds as quickly as possible. And so we again are Unprepared when the next contagion------ and this causes COVID-19 bursts upon us. Richard conniff examines our long relationship with infectious disease------- from the hard lessons to us been forced to learn from the brave, and often difficult characters, who have asked their lives to save us. Forgive us for copying this whole content from prepinsta
Smallpox taught us that we could prevent disease through inoculation and, as the 1700's ended, vaccination. By the new 1800's cholera's lesson was about sanitation and the need for centralized water and sewer systems. About the same time, one man was all heard of, Louis Pasteur, and one many of us haven't.Robert Koch, became the co- fathers of germ theory. Tools they created are still used to identify and fight with what Conniff calls — an astonishing rogues' ' gallery of deadly pathogens.
And yet here we are, again fighting on two fronts: the first against a new coronavirus sweeping the planet to devastating effects, the second, with each other, over domestic and international politics and whether we are willing to pay the price for prevention.
It's an important question for our planet. while we debate, the next pandemic draws nearer.

SIX PHRASE

Which statement is correct according to the passage

1. pandemics keep coming periodically
2. all pandemic are not to be feared
3. there is no solution for pandemic
4. research about vaccines is not reliable.

Answer: Option A

Pandemics keep coming periodically

Question 3- Read the passage given below and answer questions

It"s apparently the fate of humankind never to be free of writing the history of pandemics. No matter how often they occur------ and they do occur with great frequency ----- we collectively refuse to think about them until circumstances demand it. Then, when the infection passes, we put it out of our minds as quickly as possible. And so we again are Unprepared when the next contagion------ and this causes COVID-19 bursts upon us. Richard conniff examines our long relationship with infectious disease------- from the hard lessons to us been forced to learn from the brave, and often difficult characters, who have asked their lives to save us.

Smallpox taught us that we could prevent disease through inoculation and, as the 1700‘s ended, vaccination. By the new 1800‘s cholera‘s lesson was about sanitation and the need for centralized water and sewer systems. About the same time, one man was all heard of, Louis Pasteur, and one many of us haven't.Robert Koch, became the co- fathers of germ theory. Tools they created are still used to identify and fight with what Conniff calls — an astonishing rogues' ' gallery of deadly pathogens.

And yet here we are, again fighting on two fronts: the first against a new coronavirus sweeping the planet to devastating effects, the second, with each other, over domestic and international politics and whether we are willing to pay the price for prevention.

it's an important question for our planet. while we debate, the next pandemic draws nearer. If you are reading this text, than please forgive us for copying this content from prep insta

In the third paragraph which pandemic is the author referring to-

1. an astonishing rogues
2. smallpox
3. covid-19
4. Cholera

Answer: Option C

COVID- 19

Question 4- For the four sentences S1 to S4 paragraph below sentences S1 and S4 are given. From the options P Q and R, choose appropriate sentences for s2 and s3 respectively.

S1: In today's marketplace the practice of innovation isn't just about creating new products.

S2 :

S3 :

SIX PHRASE

S4 : There for the drive towards selecting and executing the right ideas and bringing them to market before your competitors take on an urgency that has been previously unknown
P: and in the age of internet comments the act of innovation becomes as an greater challenge ―awash in a sea of new ideas‖
Q: a perfect example can be seen in the process of mobile payment via smartphone
R. It is about discovering completely new markets that meets, previously unknown and therefore untapped customer needs

1. PR
2. RP
3. PQ
4. QR

Answer - RP
Question 5 : Select the most appropriate option to complete the sentence.
It was_____a new experience for me to attend a zoom meeting so I planned for it_____.

1. surely gently
2. quite carefully
3. occasionally basically
4. None of the above

Answer: Option B
Question 6: For the four- sentence (S1 to S4) paragraph below, sentences S1 and S4 are given.
S1- Eight months ago, it was business as usual at the cafe.
S2-
S3-
S4- I checked the Miniature Circuit breaker and realized it has tripped.
P. Around six in the evening there was fluctuation and the lights went off.
Q. I pulled the Miniature Circuit breaker switch back and it was fine again.
R. The days were warm and so the air conditioners were in full force.
Answer: RP
Question 7: One part of the sentence below may contain a grammatical error. Identify the part.
A high-end machine was inaugurated at the city‘s Institute of Medical Sciences which will facilitate 3000 RT-PCR tests for Coronavirus in a day.

1. At the city‘s Institute of Medical Sciences.
2. For Coronavirus in a day
3. A high-end machine was inaugurated.
4. Which will facilitate 3000 RT-PCR tests.

Answer: D
Question 8: You are going to read a text about a scheme of the Government. Some sentences are missing from the text. Choose from the list (A-C) the most appropriate sentence for each gap (1-2) in the text. There is one extra sentence that you do not need to use.
Composed by Narayan Pandit, the Hitopadesha had its origin around a thousand years ago. In Indian Literature, the Hitopadesha is regarded as more or less similar to the Panchatantra. (1)_____Hitopadesha tales are written in a reader-friendly

SIX PHRASE

style, which perhaps contributed to the success of this best seller. Sorry to disturb you in between your question, but please forgive us to copy this content from prepinsta. (2)_____Since, its origin Hitopadesha has been translated into numerous languages to benefit the readers all over the world.

1. It was next only after the _Bhagwad Geeta‘ in popularity in India.
2. In the vein of Panchatantra, the Hitopadesha was also written in Sanskrit and followed the pattern of prose and verse.
3. The term _Hitopadesha‘ is a combination of two terms, _Hita‘ (welfare/benefit) and _Upadesha‘ (advice/counsel).

1. 1-C 2-B
2. 1-A 2-C
3. 1-B 2-A
4. 1-C 2- A

Answer: C

Question 9- The following sentence pair can be combined into a single sentence. Choose the sentence that best combines the two:

Nikhil researched the topic as well. He was able to do his viva voce well.

1. Nikhil was able to do his Viva Voce well although he researched the topic well
2. Nikhil researched the topic well therefore he was able to do his Viva Voce well.
3. Nikhil researched the topic well unless he was able to do his Viva Voce well.
4. Nikhil was able to do his Viva Voce well despite he researched the topic well.

Answer - B

Question 10- One part of the sentence may contain an error. Identify the part. If there‘s no error, choose _No Error.‘

Since sunrise to sunset / my grandmother would sit by her wheel / spinning and reciting prayers.

1. spinning and reciting prayers.
2. No error
3. Since sunrise to sunset
4. my grandmother would sit by her whee

Answer - C. (from instead of Since)

Question 11: As it was his first job, Abhishek threw himself_____it_____a lot of enthusiasm

1. Across, in
2. Over, from
3. Into, with
4. At, with

Answer - At , With

Question 12: Since the early 1900s, many glaciers around the world have been rapidly melting_____. Specifically, since the industrial revolution, carbon dioxide and other greenhouse gas emissions have raised the temperatures, even higher in the poles_____. Scientists project that if emissions continue to rise unchecked, the Arctic could be ice free in the summer as soon as the year 2040 as ocean and air temperatures continue to rise rapidly.

SIX PHRASE

1. More than a third of the remaining glaciers of the world would have melted by 2030.
2. As a result, glaciers are rapidly melting, calving off into the sea and retreating on land.
3. Human activities are at the root of this phenomenon.

1. C , B
2. B , C
3. A , B
4. C , A

Answer - Option A (C , B)

Question 13: From hairdressers to waiters, many professionals have taken to wear face shields amid the coronavirus pandemic. But a new study has _____ that these plastic shields don‘t work, and can actually allow airborne coronavirus droplets to escape. Researchers from the Riken Centre in Japan, have performed a simulation using Fugaku - the world‘s fastest supercomputer. The simulation found that almost 100% of airborne droplets of less than 5 micrometers in size _____through plastic visor, while 50% of larger droplets found their way into the air.

Blank 1 - A. told B. informed C. warned D. sneaked

Blank 2 - A. escaped B. discharged C. vanished D. seeped

1. D , B
2. B , C
3. C , A
4. A , D

Answer - C , A.

Question 14: Seham Amer is a kickboxing pioneer in Yemen. Often considered the first of her kind, Amer trains girls in martial arts. While Amer and her students are often discouraged from participating in the ―masculine‖ sport, she continues to challenge_____of what Yemeni women can do.

Amer told the Associated Press that her critics tell her ―that the sport is masculine and that I have departed from feminine _____

Blank 1 - A. designs B. contours C. shapes D. notions

Blank 2 - A. background B. territory C. situation D. experiment

1. B , C
2. A , D
3. D , B
4. C , A

Answer - D , B.

Question 15 : The Rajasthan Royals had spirit, and took the challenge of the highest-ever IPL run chase head on to soar above Kings XI Punjab. Sanju Samson scored a 42-ball 85 studded with seven sixes and four boundaries. Rajasthan Royals recorded the highest run chase in IPL history to beat Kings XI Punjab by four wickets in a high-scoring encounter in Sharjah on Sunday. Put into bat, Mayank Agarwal smashed a 50-ball 106, while skipper KL Rahul cracked a 54-ball 69 as the duo stitched a 183-run opening stand off 99 balls to power Punjab to an imposing 223 for 2. Sanju Samson then put on a lion-hearted effort with a 42-ball 85 studded with seven sixes and four boundaries, while Steve Smith scored a 27-

SIX PHRASE

ball 50 to keep RR in the hunt. However, it was Rahul Tewatia, who turned hero when he smashed five sixes in the 18th over off Sheldon Cottrell to turn the match on its head. He scored a 31-ball 53 after struggling initially to take them to the brink of win.

In the passage, which expression means the same as create something through collective effort?

1. Smashed
2. Studded
3. Stitched
4. Cracked

Answer - Smashed

Question 16 : The Rajasthan Royals had spirit, and took the challenge of the highest-ever IPL run chase head on to soar above Kings XI Punjab. Sanju Samson scored a 42-ball 85 studded with seven sixes and four boundaries. Rajasthan Royals recorded the highest run chase in IPL history to beat Kings XI Punjab by four wickets in a high-scoring encounter in Sharjah on Sunday. Put into bat, Mayank Agarwal smashed a 50-ball 106, while skipper KL Rahul cracked a 54-ball 69 as the duo stitched a 183-run opening stand off 99 balls to power Punjab to an imposing 223 for 2. Sanju Samson then put on a lion-hearted effort with a 42-ball 85 studded with seven sixes and four boundaries, while Steve Smith scored a 27-ball 50 to keep RR in the hunt. However, it was Rahul Tewatia, who turned hero when he smashed five sixes in the 18th over off Sheldon Cottrell to turn the match on its head. He scored a 31-ball 53 after struggling initially to take them to the brink of win.

About whom does the writer use the expression that he made a _lion-hearted‘ effort?

1. Sheldon Cottrell
2. Mayank Agarwal
3. Sanju Samson
4. Steve Smith

Answer - Sanju Samson (option C)

Question 17: The Rajasthan Royals had spirit, and took the challenge of the highest-ever IPL run chase head on to soar above Kings XI Punjab. Sanju Samson scored a 42-ball 85 studded with seven sixes and four boundaries. Rajasthan Royals recorded the highest run chase in IPL history to beat Kings XI Punjab by four wickets in a high-scoring encounter in Sharjah on Sunday. Put into bat, Mayank Agarwal smashed a 50-ball 106, while skipper KL Rahul cracked a 54-ball 69 as the duo stitched a 183-run opening stand off 99 balls to power Punjab to an imposing 223 for 2. Sanju Samson then put on a lion-hearted effort with a 42-ball 85 studded with seven sixes and four boundaries, while Steve Smith scored a 27-ball 50 to keep RR in the hunt. However, it was Rahul Tewatia, who turned hero when he smashed five sixes in the 18th over off Sheldon Cottrell to turn the match on its head. He scored a 31-ball 53 after struggling initially to take them to the brink of win.

How many runs did Mayank make?

1. 69
2. 85

3. 106
4. 53

Answer - 106 (option C)

REASONING ABILITY

Q1. Among 5 objects P,Q,R,S and T

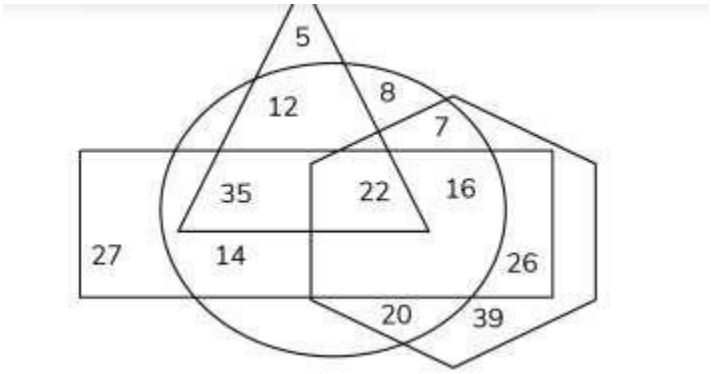
i. R is twice as heavy as T
ii. ii.S is one and half times as heavy as Q
iii. iii.Q and R together weigh as much as S and T together
iv. iv.P and S together are one and half time as heavy as Q and T together

Which among the five is the heaviest of all?

A. Q
B. S
C. P
D. R

Answer: Option B

Q2.in the following diagram, the triangle stands for _males‘, the circle for _doctors‘, the rectangle for _government employed‘, the hexagon for _corona warriors‘. The numbers in different segments show the number of persons for that segment. How many government employed doctors are either corona warriors or males or both?



A. 22
B. 73
C. 35
D. 38

Answer: Option B

Q3. A statement followed by two assumptions numbered I and II. Consider the statement and decide which of the given assumptions is implicit in the statement.
Statement: Even though enough support is provided for potato production and its storage in cold stores,the state will continue to import from other countries
Assumptions:

i. In Spite of the support the potato production and storage will not be able to meet the potatoes by the people in the store.

SIX PHRASE

ii. ii. The state is aware that the demand for potatoes by the consumers would rise substantially in the near future.

B. Only ii is implicit
C. B. Both i and ii are implicit
D. C. Neither i nor ii is implicit
E. D. Only i is implicit
Answer: Option B

Q4. In a certain code,M + N means M is the son of N, M X N means M is the brother of N; M÷N means M is the husband of N and M - N means M is the sister of N. If T - P + Q X R ÷ S,then which of the following is true?
A. P is the son of S
B. Q is the uncle of T
C. S is the sister of Q
D. S is the aunt of T
Answer: Option D

Q5. A team of four players are to be selected from among four girls A,B,C,D and four boys P,Q,R,S such that there would be at least two girls in the team and the team selection should meet the following conditions
i.B cannot go with R
ii.D and P must go together
iii.S cannot be put up with A
iv. R and C must be together
A. QBSC
B. DAPQ
C. RCQS
D. BPRA
Answer: Option B

Q6.Each of the five students, P,Q,R,S and T studies two subjects from the given subjects named History,Mathematics,English,Sanskrit,and Science.Each subject is studied by two students i.P studies Mathematics and Sanskrit
ii.R studies History and Mathematics
iii.S and T both study English
iv.Q does not study science Who from the given option studies science?
A. P
B. Q
C. R
D. S Answer: Option D

Q7. A statement is followed by three assumptions numbered I, II and III. Consider the statement and decide which of the given assumption(s) is/are implicit in the statement. Statement: Punishment of students in any form by teachers is banned in all schools to preserve the selfconfidences of students.
Assumptions: I. Punishment in a mild form is not a cognizable offence in out-of-school as it is a method for disciplining children.

SIX PHRASE

II. Teachers taking recourse to punishing children will be held accountable for their actions.
III. Punishment might induce fear, negatively affecting students' level of confidence and learning
A. Only III is implicit
B. Only I and II are implicit
C. Only II is implicit
D. Only II and II are implicit
Answer: Option A

Q8. 1600 employees are working in a company in four departments: Accounts, HR, Production and Sales, 20$ of the employees are in Accounts with a male-female ratio of 5:3. 640 are working in Production where the number of males is twice the number of males of the Accounts Department. The number of HR employees is half the number of employees in the Accounts department and 60 of them are females. The number of male employee in the Sales department is same as that of the Production department. How many female employees are working in the company?
A. 600 B. 540 C. 400 D. 500
Answer: Option D
Q9. Given below is a question followed by two statements, I and II, each containing some information. Decide which of the statement(s) is/are sufficient to answer the question. How is Sheela exactly related to Ramesh? Statements
II. Mary's brother Vikash is married to Sheela and Ramesh's mother is the sister of Mary.
III. II. Sheela is the sister of Vikash and Vikash's only child is the cousin brother of Ramesh.
A. Both the statements I and II are necessary
B. Both the statements I and II together are not sufficient
C. Statement II alone is sufficient
D. Statement I alone if sufficient
Answer: Option D

PROGRAMMING LOGIC:

Q1. Which argument is passed to fflush()?
A.no parameters
B.stdin
C.stdout
D.stderr
Answer: Option B

Q2. What will be the output for the below? Enter your answer only as Numeral
public Class Main { public static void main(string[]) { int x=1/2; if(x==0.5) System.out.println(x+1); else System.out.println(x*2); } } Answer: 0

Q3. What is the name of the method that examines a particular data entity and determines what data elements need to be associated?

SIX PHRASE

A. Entity relationship diagram
B. Logic Data modeling
C. Customer Entities
D. Functional Primitive
Answer: Option A

Q4. What will be the output of the below code?

```
public class Main { static int num=30;
static class inner
{
 void msg()
 {
 System.out.Println(_Num: num++);
}
 }
 public static void main(string args[])
 {
 Main.Inner tw=new Main.Inner();
tw.msg()
}
 }
```

Answer: 30

Q5. Select the correct code for opening a file for writing in binary mode
A. File*f =fwriteb(—abc.bin‖)
B. File*f = fopen(—abc.bin‖ ,‖ bw‖)
C. File*f = fopen(—abc.bin‖ ,‖ wb‖)
D. File*f =fwrite(—abc.bin‖ ,‖ b‖)
Answer: Option C

Q6. What will be the output of the below code?

```
import java.util.ArrayList;
 import java.util.Collections;
 import java.util.Iterator;
 class MainClass
 {
 public void sort()
{
 ArrayList arrayList= new ArrayList();
 arrayList.add("mango");
 arrayList.add("grapes");
Iterator iterator = arrayList.iterator();
 while(iterator.hasNext())
 { System.out.print(iterator.next() +" ");
 }
 Collections.sort(arrayList);
}
```

```
}
public class Main { public static void main(String[] args)
{
MainClass mainclass = new MainClass();
mainclass.sort();
}
}
```

A. mango grapes
B. Compilation error
C. Collection.sort() throws Concurrent Modification Exception
D. Grapes mango
Answer: Option A

Q7. What is the name of the method that examines a particular data entity and determines what data elements need to be associated with it?
A. Customer Entities
B. Entity Relationship Diagram
C. Logic Data Modelling
D. Functional Primitive
Answer: Option B

Q8. We cannot overload_____operator
. A. : :
B. []
C. ()
D. +
Answer: Option A

Q9. Which of the following functions is used to accept strings with white spaces?
A.getWhiteSpaceString();
B.scanf();
C.gets();
D.getstrings();
Answer: Option C

Q10.Which data structure is used to convert expression from one form to another form? A. Graph
B. Stack
C. LinkedList
D. Queue
Answer: Option B

Q11.What is the mathematical function used to round off 6.23 to 7?
A. floor(6.23) B. ceil(6.23,7) C. floor(6.23,7) D. ceil(6.23)
Answer: Option D

SIX PHRASE

Q12. Which combination of the integer variables a, b and c makes the variable m get the value 4 in the following expression? m = (a > b) ? ((a > c) ? a : c) : ((b > c) ? b : c)
A. a=6, b=3, c=5
B. a=6, b=5, c=3
C. a=5, b=4, c=5
D. a=3, b=4, c=2
Answer: Option D

Q13. Which of the following options best suits for _Memory Leak Occurred‘
A. Resource allocation pending while debugging the code
B. Program releases resources allocated in the memory
C. Program does not free the memory which is allocated dynamically
D. Occurs due to address assignment failure.
Answer- Option C

CODING:

Q1. WASHING MACHINE A Washing Machine works on the principle of a Fuzzy system, the weight of clothes put inside it for wash is uncertain. But based on weight measured by sensors, it decides time and water levels which can be changed by menus given on the machine control area. For low Water level, time estimate is 25 minutes, where approximate weight is 2000 grams or any non-zero positive number below that.
For Medium Water level, time estimated is 35minutes, where approximate weight is between 2001 grams and 4000 grams. For High Water level, time estimated is 45 Minutes, where approximate weight is above 4000 grams. Assume the Capacity of the Machine is maximum 7000 grams. Where the approximate weight is zero, the time estimate is 0 minutes. Write a function which takes numeric weight in the range [0,7000] as input and produces estimated time as output; if input is more than 7000, then output is: "OVERLOADED!", and for all other inputs, the output statement is "INVALID INPUT‖ .
Input should be in the form of integer value –
<integer>

Output must have the following format - TimeEstimated: Minutes TCS
Example 1
Input Value
2000
Output Value
Time Estimated: 25 Minutes

SIX PHRASE

```cpp
#include<iostream>
using namespace std;
int main()
{
    int weight;
    cin >> weight;
    if(weight < 0)
        cout << "INVALID INPUT";
    else if(weight == 0)
        cout<<"Time Estimated : 0 Minutes";
    else if(weight > 0 && weight <= 2000)
        cout << "Time Estimated : 25 Minutes";
    else if(weight >= 2001 && weight <= 4000)
        cout << "Time Estimated : 35 Minutes";
    else if(weight >= 4001 && weight <= 7000)
        cout << "Time Estimated : 45 Minutes";
    else
        cout << "OVERLOADED!";
    return 0;
}
```

Q2. Caesar Cipher The Caesar cipher is a type of substitution cipher in which each alphabet in the plaintext or message is shifted by a number of places down the alphabet.
For example, with a shift of 1, P would be replaced by Q, Q would become R, and so on.
To pass an encrypted message from one person to another, it is first necessary that both parties have the 'key' for the cipher, so that the sender may encrypt it and the receiver may decrypt it.
the key is the number of OFFSETs to shift the cipher alphabet. Key can have basic shifts from 1 to 25 positions as there are 26 total alphabets.
As we are designing custom Caesar Cipher, in addition to alphabets, we are considering numeric digits from 0 to 9. Digits can also be shifted by key places.
For example, if given plain text contains any digit with value 5 and key = 2, then 5 will be replaced by 7. —-‖ (Minus sign) will remain as it is. Key value less than 0 should result into "INVALID INPUT"
Example 1:
Input:
Enter your PlainText: All the Best
Enter the Key: 1
Output:
The encrypted Text is: Bmm uif Cftu
Write a function customCaesarCipher(int key, String message) which will accept plaintext and key as input parameters and returns its cipher text as output.

SIX PHRASE

```c
#include<stdio.h>
void customCaesarCipher(int key,char str[]);
int main()
{
    int key;
    char str[100];
    scanf("%[^\n]s",str);
    scanf("%d",&key);
    customCaesarCipher(key,str);
    return 0;
}
```

```c
void customCaesarCipher(int key,char str[])
{
    int n=0,i=0;
    for(n=0;str[n]!='\0';n++);
    if(key<0){
        printf("INVALID INPUT");
        return;
    }
    else{
        for(i=0;i<n;i++){
            if(str[i]!=' '){
                if(str[i]>=65 && str[i]<=90){
                    if((int)(str[i]+key)<=90)
                        str[i] = (int) (str[i]+key);
                    else
                        str[i] = (int)(str[i]+key-90+65-1);
                }
                else if(str[i]>=97 && str[i]<=122){
                    if((int)(str[i]+key)<=122)
                        str[i] = (int) (str[i]+key);
                    else
                        str[i] = (int)(str[i]+key-122+97-1);
                }
                else if((str[i]>=48 && str[i]<=57)){
                    if((int)(str[i]+key)<=57)
                        str[i] = (int)(str[i]+key);
                    else
                        str[i] = (int)(str[i]+key-57+48-1);
                }
        }
    }
    printf("%s",str);
}
```

SLOT 3:

NUMERICAL ABILITY

Note: Options provided for this question are wrong

Question 1: In case of frequency distribution of ten continuous classes, the class width is 4 and the lower class limit of the lowest class is 8. What is the upper class limit for the highest class?

1. S only
2. R only
3. Both R and S
4. Neither R nor S

Solution :

Let x and y be the upper and lower class limit of frequency distribution.

SIX PHRASE

Given, width of the class =4
⇒x − y=4
…….(i)
Also, given lower class (y)=8
On putting y =8 in Eq. (i), we get
X − 8 = 4 ⇒ x = 12
So, the upper class limit of the lowest class is 12.
Hence, the upper limit of the highest class
= (Number of continuous classes x Class with + Lower class limit of the lowest class)
= 10 × 4 + 8 = 40 + 8 = 48
Hence, the upper class limit of the highest class is 48.
Note: Options provided for this question are wrong
Question 2: What is the simplified value of

$$\frac{1.728+1}{1.24}+\frac{1-0.343}{2.19}$$

1. 0.04
2. 0.08
3. 0.4
4. 0.8

Solution:

$$\frac{1.728+1}{1.24}+\frac{1-0.343}{2.19}$$

$$\frac{2.728}{1.24}+\frac{0.657}{2.19}$$

2.2 + 0.3 = 2.5
Question 3: A leak in the body of a ship which can admit 5 units of water in 16 minutes got detected when it was 40 km away from the shore. Entry of 60 units of water will cause the ship to sink which has a pump that can throw out 12 units of water in an hour. Aided by the pump, what should be the average speed (im Kmph) of the ship in order to reach the shore just before it starts sinking?

1. 4
2. 4.2
3. 4.5
4. 4.8

Note: Options provided for this question are wrong
Question 4: What is the fourth proportional of the mean proportionals between (4, 6.25): (0.0027, 300) :: (1..2 x 10-3, 3) : ?

1. 3.6
2. 48
3. 4.8
4. 36

Solution:
(4, 6.25) = a
(0.0027, 300) = b
(1..2 x 10-3, 3) = c
? = d
a: b :: c: d

SIX PHRASE

Mean Proportional of a = $\sqrt{4 \times 6.25}$ = 5

Mean Proportional of b = $\sqrt{0.0027 \times 300}$ = 0.9

Mean Proportional of c = $\sqrt{1.2... \times 10^{-3} \times 3}$ = 0.06

a/b = c/d

$$\frac{5}{0.9} = \frac{0.06}{d}$$

$$d = \frac{0.06 \times 0.9}{5}$$

D = 0.0108

Question 5: Instead of calculating the sum of a proper fraction, less than 1/2 , with its reciprocal, the difference was worked out, as a result of which there was an error of 121(39/41)%. What was the fraction?

1. 17.5
2. 14.5
3. 16
4. 19

Answer:

Question 6: A retailer purchases several pens of the same cost for Rs 384 and then sells some of them for Rs 114 at no loss or gain. What is the least possible number of pens that he will be left with?

1. 7
2. 3
3. 9
4. 8

Solution:-

Question 7: A sales representative commission is 6% on all sales up to Rs 15,000 and 5% on all the sales exceeding this. He remits Rs 47,350 to his company after deducting his commission. What was the total sale?

1. 49000
2. 50500
3. 50000
4. 47500

Solution:

47350 = x - 6% of 15000 - 5% of (x-15000)

47350 = x - 900 - 5% of x - 5% of 15000

47350 + 900 - 750 = x - 5% of x

47500 = 95% of x

=> x = 47500 x 100/95

x = 50000

Rs. 50000

Note: Options provided for this question are wrong

Question 8: The area of the sector with central angle 150, of a circle is 231 sq cm. If pi = 22/7, what is the circumference (in cm) of the circle?

1. 2.8
2. 2.45
3. 2.1
4. 1.45

SIX PHRASE

Solution:
Area of Sector = π r2 (Sector Angle/360) = 231
22/7 * r2 * (15/360) = 231
22/7 * r2 * (1/26) = 231
r2 = ((231 * 24 * 7)/22)
r2 = 21 * 12 * 7
r2 = 1764
r = 42
Circumference of circle = $2\pi r$
2 * 22/7 * 42
= 22 * 12
= 264 cm

Question 9: In a competitive exam, 5 marks are awarded for every correct answer and for every wrong answer, 2 marks are deducted. Sathwik scores 32 marks in the examination. If 4 marks had been awarded for each correct answer and 1 mark had been deducted for each incorrect answer, Sathwik would have scored 34 marks. If Sathwik attempted all the questions, how many questions were there in the test ?

1. 14
2. 12
3. 20
4. 26

Answer: 26 Answer
In given Question:-
Correct answer =5x and wrong answer=2y
Correct answer =4x and wrong answer= 1y
So,
5x -2y = 32
4x-2y =34 -----*2
Now
5x-2y =32
8x-4y=68
By solving
3x=36
x=12
Now to find _y‘
5*12 -2y =32
60 -2y= 32
y=14
By adding x+y
12+24 =26
Questions in the test =26
Note: Options provided for this question are wrong

Question 10: A takes 10 days less than B to complete a work, and together they do it in 12 days. In how many days can B alone do the work?

1. 12
2. 10
3. 9

SIX PHRASE

4. 6

Solution:- Let B do the work independently in x no.s of days then

A.T.Q.

A will take (x - 10) no.s of day

Then in a unit day

A works 1/x part of work and B works 1/(x-10) part of work, as they both complete it in 12 days then

1/ x + 1/(x -10) =1/12 (portion of work in a day)

x(x-10)/2x -10 = 12

x^2 - 10x = 24x + 120

(x-30) (x-4)

Possible value is x=30

Hence B will do the work in 30 days

Question 11: A sum invested in compound interest (CI) at a certain rate for 3 years earns the same interest as it would earn by the way of an investment in Simple Interest (SI) at the rate of 18.2% for four years. How much more or less in the percentage rate in case of the CI than that in case of the SI?

1. 16.52
2. 20.63
3. 18.43
4. 21.25

Question 12: What is the simplified value of

$\left(2\frac{3}{4}+2\frac{1}{2}\text{ of }\frac{5}{2\frac{5}{7}}-\frac{1\frac{2}{3}}{2\frac{1}{2}}\right)\div\left(5\frac{1}{12}\times\frac{5}{19}\right)$?

1. 6
2. 4
3. 2
4. 5

Solution:

$\left(2\frac{3}{4}+2\frac{1}{2}\text{ of }\frac{5}{2\frac{5}{7}}-\frac{1\frac{2}{3}}{2\frac{1}{2}}\right)\div\left(5\frac{1}{12}\times\frac{5}{19}\right)$

$\left(\frac{11}{4}+\frac{5}{2}\times\frac{35}{19}-\frac{2}{3}\right)\div\left(\frac{61}{12}\times\frac{5}{19}\right)$

$\left(\frac{11}{4}+\frac{175}{38}-\frac{2}{3}\right)\div\left(\frac{61\times5}{12\times19}\right)$

$\left(\frac{627+1050-152}{19\times4\times3}\right)\div\left(\frac{61\times5}{12\times19}\right)$

$\left(\frac{1525}{19\times4\times3}\right)\times\left(\frac{12\times19}{61\times5}\right)$

=5

Note: Options provided for this question are wrong

Question 13: The total surface area of a solid hemisphere is 75 times the area of a circle whose diameter is 6 cm. What is the radius (in cm) of the hemisphere?

1. 120***π***
2. 100***π***
3. 80***π***
4. 50***π***

Solution :-area of circle = πr2 = = π x 32

=9π

SIX PHRASE

Total surface area of hemisphere = 75 x 9π
Now , 3πr2 = 75 x 9π
= r2 = 75 x 3= 225
r = 15 cm
Note: Options provided for this question are wrong
Question 14: $(0.0\overline{163} + 0.001)$ lies between?

1. $\sqrt{77} - \sqrt{76}$
2. $\sqrt{75} - \sqrt{74}$
3. $\sqrt{76} - \sqrt{75}$
4. $\sqrt{74} - \sqrt{73}$

Answer 14: $0.0\overline{163} + 0.001$
= 0.00163163163 + 0.00111111111 = 0.0174274274
= $0.0\overline{1742}$
Which is not lying in between any of the options.
Question 15:- 10 men can complete a work in 8 days and 10 women take 12 days to complete the same work. How many days will 3 men and 6 women take to complete the same work?
a. $9\frac{3}{7}$
b. $10\frac{3}{7}$
c. $11\frac{3}{7}$
d. $12\frac{3}{7}$
Solution:-1 men 1 day's work = 1/80
1 men 1 day's work = 1/120
(3 men + 6 women)'s day's work = (1/80 + 1/120) = 7/80
5 men and 10 women will complete the work in 80/7 days. = $11\frac{3}{7}$ days
Option C answer
Question16:- The ratio of the average speeds of two sprinters is 8:7. In a racing track if B starts at a distance of 2m ahead of A. At what distance (in metre) from the starting point of B would A catch up with B?

1. 4.4
2. 0.4
3. 2.8
4. 1.5

Question 17:- Raju lends Rs 3000 to Bharath and a certain sum to Charan at the same time of 6% per annum simple interest.If after 5 years ,Raju altogether

SIX PHRASE

receives Rs 1650 as interest from Bharath and Charan, What is the sum lent to charan ?

1. Rs 2500
2. Rs 3300
3. Rs 2750
4. Rs 3250

Answer 17: For Bharath and Charan 6% for 5 year = 30% for each
30% for 3000 = 900
=> total interest - 900 = Charan
1650 - 900 = 30% of x (given to Charan)
30% of x = 750
X = Rs 2500 (option a is correct)

Question 18:- With Symbols having their usual meaning the mean of the data given is 39.2

x 36 40 35 44

f 10 13 12

What is the missing frequency?

A.124.6
B.125.2
C.123.8
D.124.2

Question 19:- What is the difference between the Range and the Standard Deviation of all natural numbers between 81 and 90 , both inclusive?

1. 7
2. 11
3. 8
4. 9

Question 20:- The table below presents the data of atmospheric pressure (in mm of mercury) at a place at four different times of the day during four days P, Q,R,S,A steady rise in atmospheric pressure indicates a far weather. On which of the given days was the weather fair ?

Time/Day	A	B	C	D
0600	742	765	754	761
1000	778	767	755	770
1400	762	745	757	775
1800	760	756	758	774
2200	768	752	760	762

1. 324.283
2. 81.73
3. 326.293
4. 28.25

Question 21: The value of 1 gm gold is 90 times that of 1 gm silver. If the weights of equal volumes of silver and gold are in the ratio 10:19, what is the value of a bar of silver that is equal in bulk to a bar of gold of value Rs 99180.

1. 14: 16: 19

SIX PHRASE

2. 13: 15: 18
3. 16: 18: 21
4. 40: 46: 55

Question 22: When the list price (L.P) of an article is fixed at 30% above the cost price (C.P), and while selling the same it is subject to a discount of x%, the profit percentage is 80% of that when the L.P is fixed at 25% above the C.P and the discount is 16%. What is the value of x?

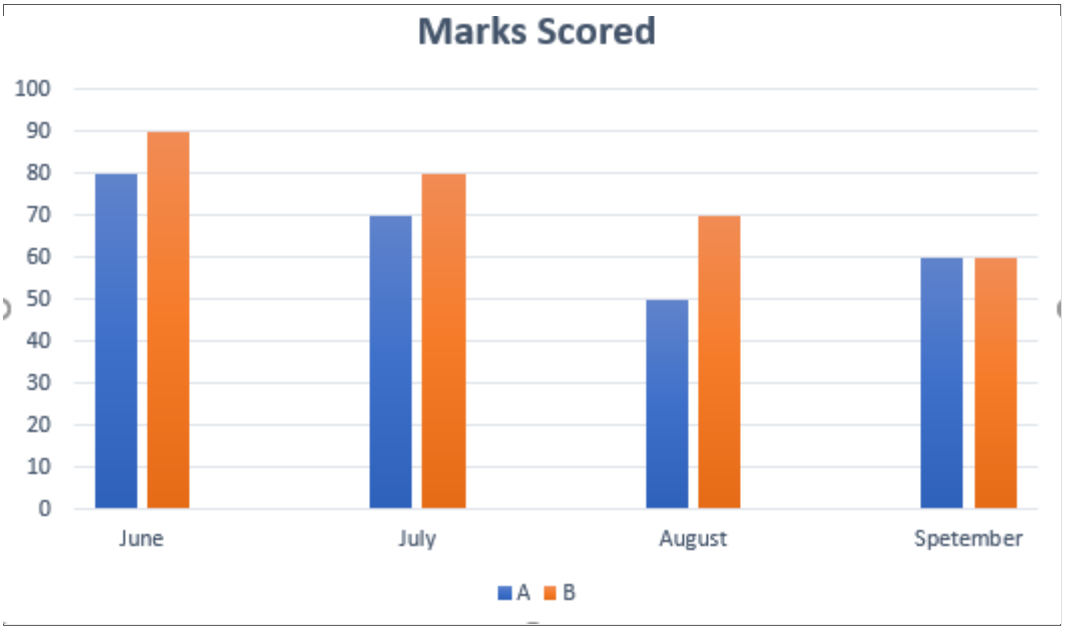
1. 3.25
2. 3.6
3. 3
4. 3.84

Question 23: A shopkeeper calculated his profit as 12% with the selling price of an article as the base. What would have been his actual profit percentage if the selling price was 20% more?

1. 21
2. 20
3. 23
4. 24

Solution:- Assume the cost price was 100
Then after 12% profit the selling price would have been =100+12 = 112
Now,
Profit at 20% would be= 112 x 20 /100 =22.5
So answer is option C
Note: Graph and Options provided for this question are wrong

Question 24: The percentage marks scored by two students A and B at four consecutive monthly tests are depicted in the Bar Graph below. In which month is the percentage marks scored by B 40% more than that by A.



1. 2015
2. 2013
3. 2014
4. 2012

SIX PHRASE

Note: Options provided for this question are wrong

Question 25: The sum of the ages of two friends is 74. After one year the ratio of their ages will be 9:10. What was the ratio of their ages nine years ago?

1. 7:6
2. 3:2
3. 4:3
4. 13:12

Answer 25:- - x + y = 74

X +1 /Y+1 =9/10

10x + 10 =9y + 9

10x = 9y + 9 -10

10x = 9y-1

X = 9y -1 /10

Now putting value of x in equation 1

(9y -1 /10) +y -74

9y -1 +10y = 740

19y =741

y= 741 /19 =39

And x = 74 -y

= 74 - 39 =35

Ratio of ages nine years ago = 35-9 /39-9

=26/30

=13:15

Question 26: A city water supply tank has two inlet pipes X and Y, which can fill it in 20 and 30 hours respectively and an outlet pipe Z which can empty a full in 40 hours. If the tank is empty and the taps are opened in succession for one hour each, and the process continues in how many hours the tank gets filled?

1. $49\frac{1}{7}$
2. $49\frac{1}{2}$
3. $51\frac{5}{7}$
4. $49\frac{1}{4}$

VERBAL ABILITY

Question 1: Select the most appropriate option to fill in the blank.

The exotic remedies for some illness have been_____from generation to generation.

A- handed in

B- handed down

C- handed over

D- handed out

Answer - Handed down

SIX PHRASE

Handing down means passing on the legacy.
Question 2: Select the most appropriate option to complete the sentence.
While MSME's are waiting_____the release_____around Rs. five lakh crore pending payments, no major relief has come their way so far.
A- to, with
B- of, at
C- for, of
D- from, on
Answer- C
For the release, of around.
Question 3: You are going to read a text about fighting pollution. Some sentences are missing from the text. Choose from the list (A-C) the most appropriate sentence for each gap (1-2) in the text. There is one extra sentence that you do not need to use.
A team of scientists at the University of Portsmouth of England has developed a new enzyme that has the ability to break down plastics up to six times faster than standard enzymes, according to CNN (1)_____In reducing the amount of non-biodegradable plastic on Earth, enzymes have been used to help combat pollution by breaking down polyethylene terephthalate (PET) chain molecules, the most common thermoplastic that makes up everyday items like single-use bottles, clothing, and carpet. (2)_____The first altered enzyme was called PETase, which will now be connected with MHETase to create the University's new enzyme protein. Between these two enzymes connecting, PET chains in plastic were found to break down twice as fast as PETase alone.
A- The researchers, who had earlier engineered an enzyme found within bacteria of a plastic bottle combined it with a second enzyme to accelerate the breakdown of plastics.
B- A tool called the Diamond Light Source was used to map the molecular structure of MHETase.
C- Enzymes, proteins that are key components in chemical reactions within the human body, act as catalysts that speed up the breakdown of substances.
A- 1-B, 2-A
B- 1-B, 2-C
C- 1-A, 2-B
D- 1 C, 2- A
Answer - Option D (C, A)
Question 4: One part of the sentence below may contain an error. Identify the part. If there is no error, choose _No error'
Whatever she said in her defence was not taken seriously by the investigating authorities.
A- No error
B- Whatever she said in her defence.
C- by the investigating authorities
D- was not taken seriously.
Answer - Option A. No error.
Question 5: Select the most appropriate option to fill in the blank.

SIX PHRASE

The security guard_____leave ended two days ago has not yet reported back to work.
A- whom
B- who
C- which
D- whose
Answer: D

Question 6: You are going to read a text. Some sentences are missing from the text. Choose from the list (A-C) the most appropriate sentence for each gap (1-2) in the text. There is one extra sentence that you do not need to use.
Disney is an international maze of parent companies and subsidiaries that leave few corners of the globe untouched, its vast holidays are maze of media networks, film studios, production companies, merchandising ventures, parks, resorts, distribution operations, Finance firms, gaming corporations, publishing companies, construction firms, vacation and cruise lines, music studios, and digital content providers. (1)_____However, the company's reach spreads farther than many people might think- in movies, and television alone. (2)_____Forbes ranks Disney- which employs more than 20,000 people ------ among top 10 most powerful brands in the world and values the company at more than $238 billion.
A- it is common knowledge that Disney is behind classics like _Beauty and the Beast' and _The Lion King'.
B- There is only a seemingly endless web of companies, properties, holdings, and franchises that don't bear the Disney name yet serve as revenue streams for the corporate empire just the same.
C- Walt Disney World in Orlando, Florida re-opened the park in July with new safety precautions in place following months of being shut down amid the Coronavirus pandemic.
A- 1-C, 2-B
B- 1-C, 2-A
C- 1-A, 2-B
D- 1-A, 2-C
Answer - A , C
Question 7: One part of the sentence below may contain an error. Identify the part.
Something about the way he spoke stuck a bell in Lauren's mind.
A- stuck in bell
B- in Lauren's mind
C- way he spoke
D- Something about
Answer - Option A. (struck a bell)
Question 8: Complete the following sentence by, filling in the blanks (1 and 2) with the right word from the list given below.
Compared with conventional agriculture, organic farming uses fewer pesticides, reduces soil erosion, decreases nitrate leaching into groundwater and surface water and,_____animal wastes into the farm. These benefits are_____by higher food costs for consumers and generally
lower yields.

SIX PHRASE

1. A- recycling B- recycle C- recycles D-recycled
2. A- increased B- balanced C- counter-balanced D- encountered

A- 1-D, 2-A
B- 1-D, 2-B
C- 1-B, 2-D
D- 1-C, 2-C
Ans: D (C, C)

Question 9: Complete the following sentence by, filling in the blanks (1 and 2) with the right word from the list given below.
As we scrutinize our own faces for wrinkles and flaws, we can fail to notice what a marvelous organ the face is. Our faces are the most (1)_____part of our visible body, a mysterious mosaic of the physical and psychical. Faces are the body's workaholics. They confer and confirm identity, express emotion, communicate meaning, perform, (2)_____functions necessary for life, and enable us to experience the world through our senses.
Blank 1) A-distinctive B-typical C-average D-classic
Blank 2) A-plan B-Basic C-needed D-compulsory
A- 1-C, 2-B
B- 1-D, 2-C
C- 1-A, 2-B
D- 1-B, 2-A
Answer - Option C (A , B)

Question 10: One part of the sentence below may contain an error. Identify the part.
Either Rahul or Rohit accompany their grandmother and grandfather whenever they go to the hospital.
A- Either Rahul or Rohit accompany
B- No error
C- their grandmother and grandfather
D- whenever they go to the hospital.
Ans: A
Rohit accompanies

Question 11: Read the passage below and answer the question.
Archeology is based on the scientific method. Archeologists ask questions and develop hypotheses. They use evidence to choose a dig site, then use scientific sampling techniques to select where on the site to dig. They observe, record, categorize, and interpret what
they find. Then they share their results with other scientists and the public.
Underwater archaeologists study materials at the bottom of lakes, rivers, and oceans. Underwater archaeology encompasses any prehistoric and historic periods, and almost all sub-disciplines as Archaeology. Artifacts and features are simply submerged.
Artifacts studied by underwater archaeologists could be the remains of a shipwreck. In 1985, National Geographic Explorer-in-Residence Dr. Robert Ballard helped locate the wreck of RMS Titanic, which sank in the North Atlantic Ocean in 1912, killing about 1,500 people. Ballard and other scientists used sonar to locate the wreck, which had been lost since the ocean liner sank. By exploring Titanic

SIX PHRASE

using remote-controlled cameras, Ballard and his crew discovered facts about the shipwreck (such as the fact the ship broke in two large pieces as it sank) as well as hundreds of artifacts, such as furniture, lighting fixtures, and children's toys. Underwater archaeology includes more than just shipwrecks, however. Sites include hunt camps on the continental shelf of the Gulf of Mexico, and portions of the ancient city of Alexandria, Egypt, submerged due to earthquakes and sea level rise.

What significant information did Dr. Ballard discover about the RMS Titanic?

A- That 1500 people were on board the liner.

B- That the ship had sunk in the North Atlantic ocean.

C- That the liner had broken into two while sinking.

D- That children's toys, furniture, and artifacts had also sunk with the ship.

Answer - B (3rd line of 3rd para)

Question 12: According to the passage, which was the research technology used by Underwater Archeologists to get the most effective visual feedback of the artifacts?

A- Sonar technology

B- Remote controlled cameras

C- Scuba Diving team with cameras

D- Miniature submarines.

Answer - Option B. (5th line of third paragraph)

Question 13: Which option gives the correct order of the process followed by archeologists?

A- Categorize, develop hypotheses, apply evidence, ask questions, record, dig a site, interpret, observe, share.

B- Observe, apply evidence, record, dig a site, ask questions, interpret, share, categorize, develop hypotheses.

C- Dig a site, interpret, ask questions, observe, apply evidence, categorize, share, develop hypotheses, record.

D- Ask questions, develop hypotheses, apply evidence, dig a site, observe, record, categorize, interpret, share.

Answer - Option D. (First line of the passage)

Question 14: Which of the following are underwater archeologists most unlikely to find?

A- Artifacts and prehistoric features.

B- Portions of an ancient history.

C- Remains of a shipwreck

D- Evidence of previous excavations.

Answer - Option D (Mentioned in fragments)

Question: Read the passage below and answer the questions.

When behavioural ecologists, Liz Derryberry saw a news report of coyotes crossing the Golden Gate Bridge in March, she immediately thought of her birds. For over a decade, Derryberry has studied the white crowned sparrow and how urban noise has disrupted and degraded the species ability to communicate.

With most San Franciscans staying at home due to the coronavirus pandemic, she decided to seize an unprecedented opportunity to study how this small, scrappy songbird responded when human noises disappeared.

—I realized we gotta do this, and we gotta do this now,‖ she says.

SIX PHRASE

By recording the species‘ calls among the abandoned streets of the Bay Area in the following months, Derryberry and colleagues have revealed that the shutdown dramatically improved the birds‘ calls, both in quality and efficiency. Male birds in particular rely on their songs to defend territory and find mates.

―The songs didn‘t change as much as we predicted—they changed even more,‖ says Derryberry, of the University of Tennessee, Knoxville. ―It highlights just how big of an effect noise pollution has.‖

The research, published today in Science, is among the first to scientifically evaluate the effects of the pandemic on urban wildlife. It also adds to a burgeoning field of research into how the barrage of human-made noise has disrupted nature, from ships drowning out whale songs to automobile traffic jamming bat sonar.

Question 15: Which word does the writer use to describe the extent of research on noise pollution.

A- Improved

B- Disrupted

C- Burgeoning

D- Drawing

Answer: C

Question 16: What purpose do the calls of the birds serve?

A- They help the male secure their territory.

B- They help them locate other birds.

C- They show them the direction during flight.

D- They assist them in finding food.

Answer - Option A

Question 17: The passage is primarily about the impact of the pandemic on_____

A- bats

B- whales

C- sparrows

D- coyotes

Answer: C

Question 18: The results of Derryberry and her companion‘s research were unexpected because_____

A- it revealed that birds did not change their songs or their other habits.

B- It showed that birds migrated from their original homes due to the pandemic.

C- The birds' songs became fewer and less audible when fewer humans watched them.

D- The bird songs became louder and better when human noises reduced.

Answer - D

Question 19 - For the four sentences (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R choose the appropriate sentences for S2 and S3 respectively.

S1: Finland‘s Helsinki Airport is using a unique method for screening arriving passengers for COVID 19 - specially trained dogs that can detect the virus in humans - even before they show any symptoms

S2:

S3:

SIX PHRASE

S4: According to the press release ―The dog will perform its work in a separate booth so that the fear of spreading the infection is reduced‖
P- Those taking the test will swipe with a test wipe and drop it into a cup, which is given to the dog.
Q - Upon arrival at the airport, passengers may be asked to volunteer for the program, and if they agree. Are given a wipe to collect a sweat sample
R- More dogs are currently being trained and should be available for the screening procedure in a few months

1. RQ
2. RP
3. QP
4. PQ

Ans: C
Question 20 - For the four sentences (S1 to S4) paragraph below, sentences S1 and S4 are given. From the options P, Q and R choose the appropriate sentences for S2 and S3 respectively.
S1: COVID-19 spreads mainly among people who are in close contact (within about 6 feet) for a prolonged period.
S2:
S3:
S4: Since people can spread the virus before they know they are sick it is important to stay at least 6 feet away from others, when possible even if you - or they - do not have any symptoms
P: Social distancing is especially important for people who are at higher risk for severe illness from COVID - 19.
Q: Spread happens when an infected person coughs, sneezes, or talks, and droplets from their mouth or nose are launched into the air and land in the mouths or noses of people nearby
R: The droplets can also be inhaled into the lungs.

1. QR
2. PQ
3. RQ
4. RP

Ans: A
Question 21 - You are going to read a text about an interesting initiative. Some sentences are missing from the text. Choose from the list (A-C) the most appropriate sentence for each gap (1 - 2) in the text. There is one extra sentence that you need to choose.
This year COVID-19 pandemic has introduced a wide swath of Americans to the joys of gardens and gardening. (1)_____American‘s rose garden at the American Rose Centre is seeking volunteers to participate during its upcoming Volunteer days from 8:00 a.m. to 3:00 p.m. on October 23rd and 24th (2)_____. Mask wearing and social distancing will be observed and a brown, bag lunch will be provided to all who register.
A- Volunteers are welcome to come and work in the garden any time during the two days.

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B- The fresh air and other healthful benefits of outdoor exercises, together with the good feeling of accomplishing something useful have drawn many to being gardening or increase activities in the garden
C- After the tour, volunteers will be guided through tasks by garden team leaders.

1. (1) - C, (2) - B
2. (1) - A, (2) - C
3. (1) - C, (2) - A
4. (1) - B, (2) - A

Ans D
Question 22 - Which of the following sentences does NOT use informal language?

1. Can we sort this out together?
2. I sincerely apologise for the oversight
3. Thanks a lot for sharing this information
4. This is a high priority account, take care!

Answer - B (apologise is formal)
Question 23 - For the four sentences (S1 - S4) paragraph below, sentences S1 and S4 are given. From the options P, Q, R, choose the appropriate sentences for S2, S3 respectively.
S-1: Gianni Crea, the head key-keeper of the Vatican, is intimately familiar with the contours of history.
S-2:
S-3:
S:4: They traverse a 4.6 - mile route through the museums which see upto 28,000 visitors per day.
P: Almost every morning for the past six years, he's opened the doors to the Vatican Museums.
Q: Crea and his team of 10 - Five each on the morning and evening shifts - open and close 300 doors every day, mobilizing about 700 employees along with them.
R: Crea has worked in the Vatican for 20 years and as head key-keeper for six.

1. RP
2. PQ
3. QR
4. QP

Answer - Option B (PQ)

REASONING ABILITY

Question 1: Which is the wrong term in the following series ?
axc,cve,fsh,jpm,oyq,udw

1. Udw
2. Ojq
3. Jpm
4. fsh

Solution 1:
AXC = 1 letter gap between 1st and 3rd letter
CVE = 1 letter gap between 1st and 3rd letter
FSH = 1 letter gap between 1st and 3rd letter
OYQ = 1 letter gap between 1st and 3rd letter

UDW = 1 letter gap between 1st and 3rd letter
JPM= no pattern like above words.
Hence JPM is the wrong term in the series.
Question 2: Given below is a question by two statement, l and ll each containing some information . Decide which of the statement (s) is/are sufficient to answer the question.
Among Six people P,Q,R,S,T and U , how many are teachers ?
Statement:
l. — Q and T are teachers — is True .
ll. — At least one of P and R is a teacher‖ is false and S and U‘s status is same like P and R.

1. Statement ll alone is sufficient.
2. Both the statement l and ll together are needed.
3. Both the statement l and ll together are not sufficient.
4. Statement l alone is sufficient.

Solution 2: Both the statement l and ll together are not sufficient.
Question 3: In each of the five pairs of the letter- clusters, the letter in the second term is a rearranged/ transformed form of the letter in the first term in a particular pattern. In which two pairs, has the transformation been done the same way ?
[A] WMSHD- DSHWM
[B] NPKRQ - PRKQN
[C]HQRWK - HKWQR
[D] ZIGPM- PIZGM
[E] BWIKG - GIKBW

1. A and E
2. A and C
3. D and B

Solution 3:
A = WMSHD- DSHWM
Here,
WMSHD divide it into two parts i.e., WM and SHD
Now, in second part move the last letter in front and so on, i.e, DSH
Now put second part before the first part i.e., DSHWM
Similarly in E = BWIKG - GIKBW
Here, divide it into two parts i.e., BW and IKG
Now, in second part move the last letter in front and soo on i.e., GIK
Further, shift the second part before first part ie., GIKBW
Hence Option A is correct i.e, A and E
This PDF is made by PrepInsta, we have copied this from them
Question 4: There are five person in a family A, B,C,D and E. In which, one is working as a doctor; one is an engineer. Both A and C are unmarried ladies, who are not working. None of the ladies is working as a doctor and a lawyer in the family.E is the husband of the only one married couple in the family. B is the brother of C and neither a lawyer and nor an engineer.
Who is the doctor in the family ?

1. A
2. E

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3. B
4. D

Soution 4: Option C

A, B are unmarried ladies who are not working. E is the husband of only one married couple..so D is the lady and none of the ladies are working as doctor and lawyer.SO now E profession is not given but B is neither lawyer nor an engineer so.. B can be a doctor

Question 5: The following are the criteria for selecting a candidate for the post Assistant Manager.

The candidate must.

(i) Be a graduate in engineering in specification of Human Resource Management with minimum 55% marks.

(ii) Have three years full time experience.

(iii) Have secured more than 60 % in the interview and at least 70% in the written test.

However, if the candidate fulfills the above criteria except.

In case of the applicant who satisfies all other criteria except-

- at(i) above , but has more than five year experience in relevant field. his/her case is to be referred to the management.
- at(ii) above, but has secured more than 65% in the written test as well as in the interview. his/her case to be referred to the HR department.
- at(iii) above, but has graduated in engineering with specialization Human Resource Management with a minimum 65% marks in his/her case to be referred to the General Manager.

Sidharth has recently completed his graduate in engineering with specialization of Human Resource Management with minimum 65 % marks. He has now secured 65% in the interview and 65% in the written test. Thanks PrepInsta for doing the hard work, we just copied it from them.

Based on these criteria and the information Provided , decide the course of action.

A- Refer to HR department

B- He would be selected.

C- Refer to the General Manager.

D- Refer to Management.

Solution 5:- Refer to the HR Department

Because he has already fulfilled the above criteria and scored 65% in the written test as well as in the interview so his case will be referred to the HR department.

;

Question 6: Two Statements are given followed by three conclusion numbered l,ll and lll . Assuming the statements to be true, even if they seem to be at variance with commonly known facts, decide which of the conclusion logically follow (s) from the statements.

Statements-

All animals are plants.

All plants are shrubs.

Conclusion-

l.Some shrubs are plants.

ll. Some animal are not shrubs.

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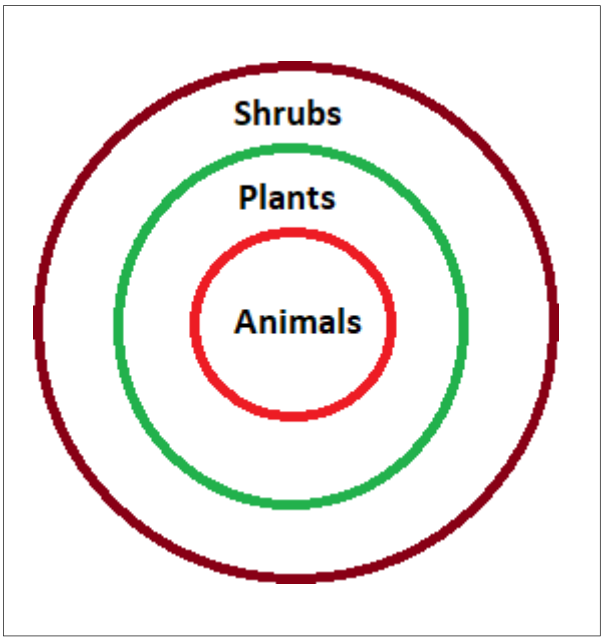
lll. All animal are shrubs.
A- Only Conclusion l and ll follow.
B- None of the Conclusion Follow.
C. Only Conclusion I and III follow
D. None of the above
Solution 6: Option C



Question 7:- Three Statements are followed by four conclusions numbered l,ll ,lll and lV. Assuming the statement to be true. Even if they do not confirm to real world knowledge, decide which of the conclusion(s),logically follows from the statements.
Statement:

1. All clothes are Shirts
2. All shirts are pants.
3. All cots are pants.

Conclusion:

1. No clothe is cot
2. Some cots are shirts.
3. Some pants are clothes.
4. Some cots are clothes.

A- Only ll follow
B- Either ll or l follow
C- Only Either l or IV and lll follow.
D- Only lll follow.

Solution 7:
Only Either I or IV and III follow

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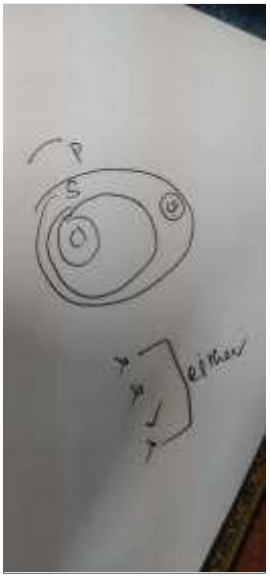

Question 8: In a certain code, a+b means a is the wife of b; a*b means a is the brother of b and a/b means a is the son of b.
If T/z * U+W, then which of the following is true ?
A- U is the aunt of T
B- W is the wife of Z
C- T is the daughter of Z
D- U is the uncle of T
Solution 8:-A
T is the son of z , z is the brother of u and u is the wife of W
So U is the aunt of T
Question 9: There are five person in a family A, B,C,D and E. In which, one is working as a doctor; one is an engineer. Both A and C are unmarried ladies, who are not working. None of the ladies is working as a doctor and a lawyer in the family.E is the husband of the only one married couple in the family. B is the brother of C and neither a lawyer and nor an engineer.
Who is the lawyer ?
A- E
B- D
C- A
D- B
Solution 9: option A
A, B are unmarried ladies who are not working. E is the husband of only one married couple..so D is the lady and none of the ladies are working as doctor and lawyer. B is neither lawyer nor an engineer so.. B is a doctor and the person that is left is E so E is a lawyer.
Question 10:- Given Below is a question followed by two statements, l and ll ,each containing some information.Decide which of the statement is /are sufficient to answer the question.
The ratio of fees of two different schools is 2: 2.5 What would be the fees of the school if discount of 25% and 35% are given on the both the schools respectively ?
Statements-

1. Discount on the second school fees in Rs. 8750 ?

ll. difference between the discount on the two school fees is Rs. 3750 ?

1. Statement ll alone is sufficient
2. Statement l alone is sufficient
3. Both Statement l and ll together are not sufficient.
4. Both Statement l and ll together are sufficient

Solution 10:-

Here both the statements I and II together are sufficient to answer the question.

Question 11: There are five people in the family O,P,Q,R,and S They are working as a farmer ,a teacher,a lawyer,an engineer and a doctor. P is an unmarried daughter of O working as a teacher.S is the brother of Q ,working as a lawyer Q is the husband of the only married couple in the family. O is the father of an unmarried daughter and two sons. Working as farmer O's daughter in law is a doctor.

Who is an engineer in the family ?

A- O

B- P

C- R

D- Q

Solution 11: Option D

O - farmer

P- teacher

Q- Engineer

R- doctor

S- lawyer

O is the father of P who is teacher (unmarried daughter) and Q(married) and S (lawyer) (Brother) . So Q is married so R is the wife of Q who is a doctor. The only one who is left is Q so Q is an engineer.

Question 12:- A statement is followed by two assumptions number l and ll . Consider the statement and decide which of the given assumptions(S) is/are Implicit in the statement .

Statement:

If he is a hard worker ,he will succeed in Life.

Assumptions:

l To succeed,he must be a hard worker

ll He will succeed in life.

A- None of l and ll are implicit.

B- Only l is implicit.

C- Only ll is implicit.

D- Both l and ll are implicit.

Solution 12:

Only I is implicit

Question 13:- A Statement is followed by three courses of action numbered l,ll and lll . Assuming everything in the statement to be true, decide which of the suggested courses of action (a decision to be taken for follow up / improvement in regard to the problem) logically follows for pursuing .

Statement:-

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There is a considerable increase in the number persons infected by corona virus during the last few months through person to person contact and direct contact with respiratory droplets, exhausted by the infected person.
Courses of action
l. Wear amast when social distancing is not possible.
ll. The government should give adequate information through mass media regarding corona virus
lll. Health Centres and facilities should be increase and fully equipped properly for the treatment patients

1. Only l is implicit.
2. All are implicit.
3. Both l and ll are implicit.
4. Only ll is implicit.

Solution 13:-
Both I and II are implicit
Question 14:- Given below is a question followed by two statements,l and ll.each containing some information Decide which of the statements(s) is/are sufficeint to answer the question.
What is the age of Sumit ? Statements.
l. Sumit is five year younger than amit , who is double the age of Prateek.
ll. Prateek is 10 years elder than Ravi whose age is 22 years.
A- The Combination of both the statement l and ll are necessary.
B- The Combination of both the statement l and ll are not necessary.
C- Statement ll alone is sufficient.
D- Statement l alone is sufficient.
Solution 14:The Combination of both the statement l and ll are necessary.
Option A

Question 15:- A statement is followed by two assumptions numbered l and ll. Consider the statement and decide which of the gives assumption is/are implicit in the statement
Statement-
If you have any queries ,ask there to me
Assumption:
l. You have no questions.
ll. I can answer any questions

1. Neither l nor ll is implicit.
2. Only ll is implicit.
3. Both l and ll are implicit.
4. Only L is implicit.

Solution 15: Both I and II are implicit
Question 16:- The following are the criteria for selecting a candidate for the post Assistant Manager.
The candidate must.
(i) Be a graduate in engineering in specification of Human Resource Management with minimum 55% marks.
(ii) Have three years full time experience.

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(iii) Have secured more than 60 % in the interview and at least 70% in the written test.

However, if the candidate fulfills the above criteria except.

In case of the applicant who satisfies all other criteria except-

- at(i) above , but has more than five year experience in relevant field. his/her case is to be referred to the management.
- at(ii) above, but has secured more than 65% in the written test as well as in the interview. his/her case to be referred to the HR Operatement.
- at(iii) above, but has graduated in engineering with specialization Human Resource Management with a minimum 65% marks in his/her case to be referred to the General Manager.

Amit has completed his B.E with 60% marks without HRM specialization but he has been working as an assistant manager in a required company for the last six year. He has now secured 65% in the interview and 66% in the written test. If you are reading this, please appreciate the hard work done by PrepInsta team

A- Refer to HR department

B- He would be selected.

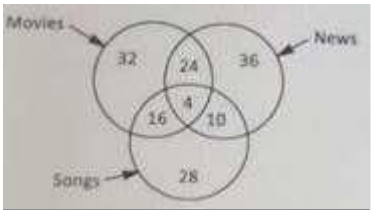
C- Refer to the General Manager.

D- Refer to Management.

Solution 16:

Refer to the General Manager.

Question 17:- Consider the venn diagram given below:-



The number in the venn diagram indicates the number of the person /people watching the TV programmes. The diagram is drawn after surveying 150 persons in a population of 12000. How many person/people can be expected to watch at least two TV Programs?

A-3200

B- 2880

C-4320

D-2280

Solution 17:

24 + 4 + 16 + 10 = 54

Fraction of people who have taken part in survey = 12000/150 = 80

Fraction of people expected to watch at least 2 TV programs = 54 * 80 = 4320

(Options are incorrect for this question)

Question 18:- In a certain code,P+Q means P is the father of Q; P-Q means P is the sister of Q and P/Q means P is the brother of Q.

Which is the following equation,shows that A is the uncle of D ?

1. (A+B+C-D)
2. (A-D+C/B)
3. (A+B/C-D)

4. (A-B+C/D)

Solution 18:-

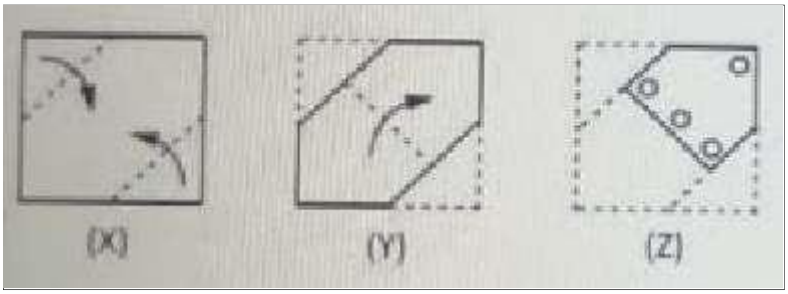
The correct answer for this question will be (A/B+C/D)

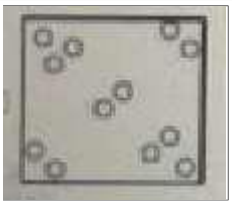
A/B means that A is the brother of B

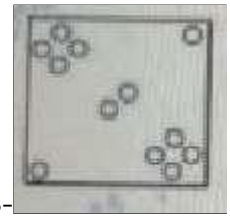
B+C means that B is the father of C, which means that A is the uncle of C

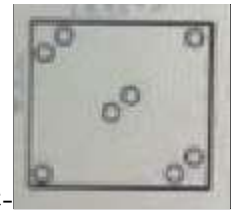
Now, C/D means that C is the brother of D, which means that A will be the uncle od D

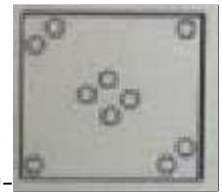
Question 19:- The Sequence of folding a piece of square paper and the manner in which the folded paper has been cut is shown in the figures marked X,Y,and Z. How would the paper look when unfolded ?



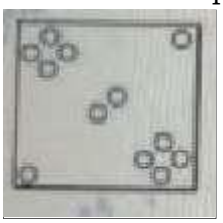
A- 

B- 

C- 

D- 

Solution 19: Option B



Question 20:- The following diagram shows the people who can speak various languages,the rectangle stand for —Spanish; the circle stands for —indian; the

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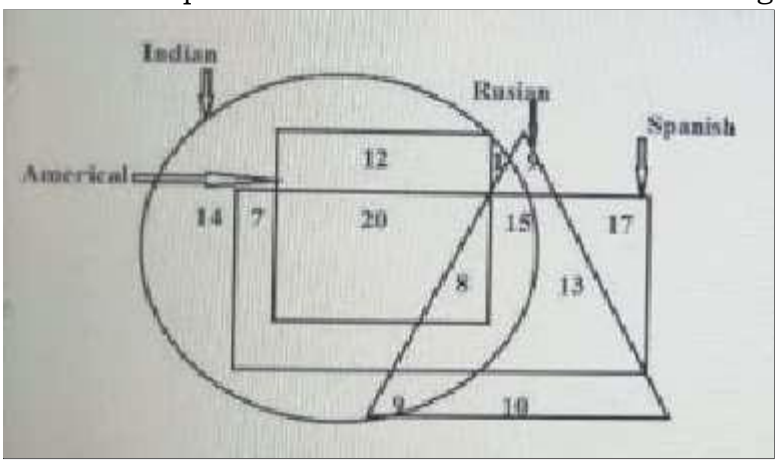
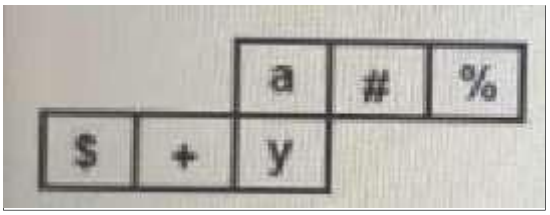
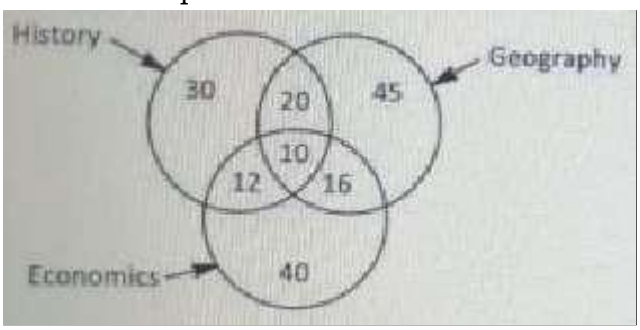
triangle stands for—Russian‖ , and the square stands for—American‖ .The numbers in different segment show the number of persons.
Answer the question on the basis of the information given in the diagram.



How many people can only speak both language Spanish and Russian ?
A- 17
B- 10
C- 18
D- 13
Solution 20: Option D (13)
Question 21:- A Cube is made by folding the giving sheet, In the cube so formed ,which letter/ symbol will be on the opposite face to the face having symbol _%'?

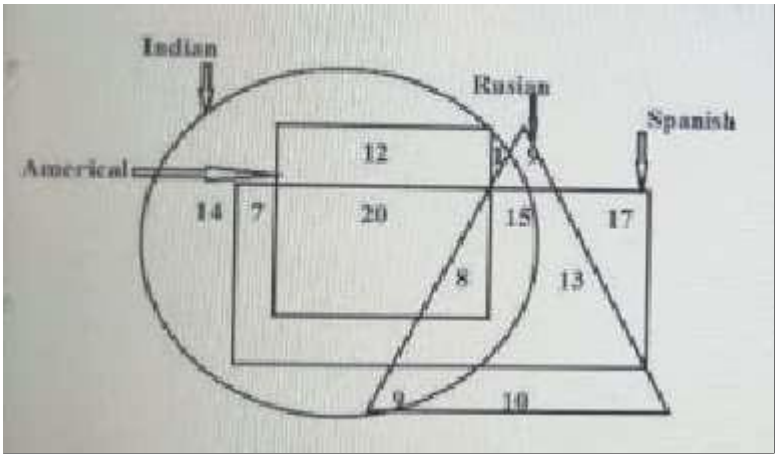


A- (+)
B-(Y)
C-(a)
D-($)
Solution 21:- Option C (a)
Question 22:- The diagram given below shows the number of students who got distinction in three subjects out of 320 students. Study the diagram carefully and answer the questions

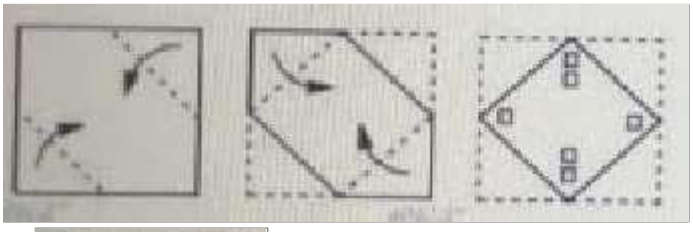


What is the percentage of students who got distinction only in two subject ?
A- 48
B- 10

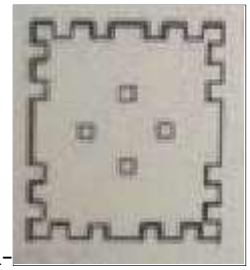
C- 25
D-15
Solution 22: $\frac{20+12+16}{320} \times 100 = 15\%$
Question 23:- The following diagram shows the people who can speak various languages,the rectangle stand for ―Spanish; the circle stands for ―indian; the triangle stands for―Russian‖ , and the square stands for―American‖ .The numbers in different segments show the number of persons.
Answer the question on the basis of the information given in the diagram.

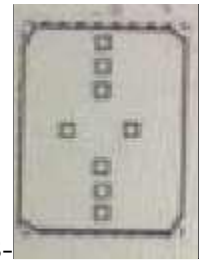


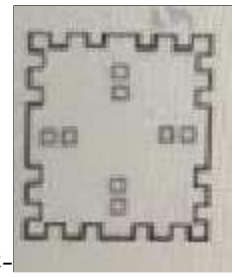
How many people can speak American and Russian languages ?
A- 15
B- 8
C- 13
D- 9
Solution 23:
There are 8 people who can speak American and Russian
Question 24: The sequence of folding a piece of square paper and the manner in which the folded paper has been cut is shown in the figures marked X,Y and Z.
How would the paper look when unfolded ?



A-



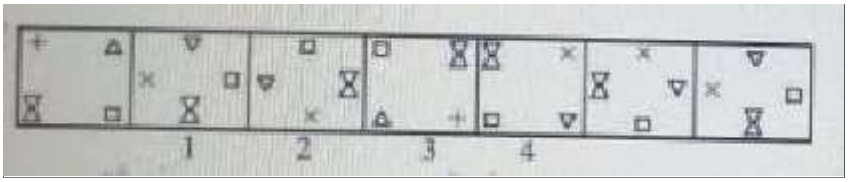
B- 

C- 

D-

Solution 24:

Question 25:- These are seven figures, the first and last two of which are unnumbered. One of the numbered figures does not fit into the series. The number of that figure is the answer. Find it out .



A- 2

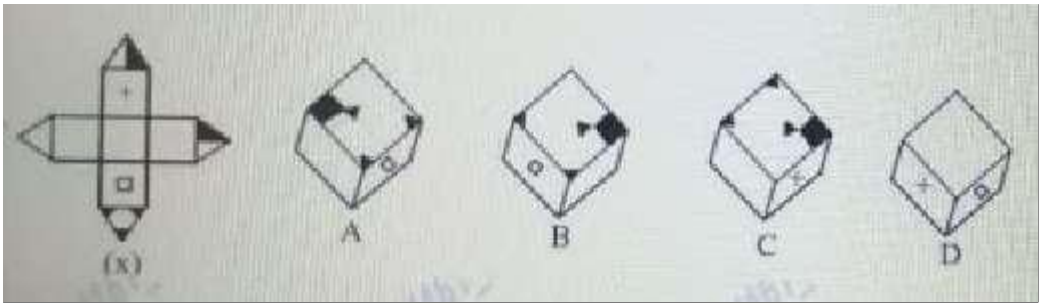
B-3

C-4

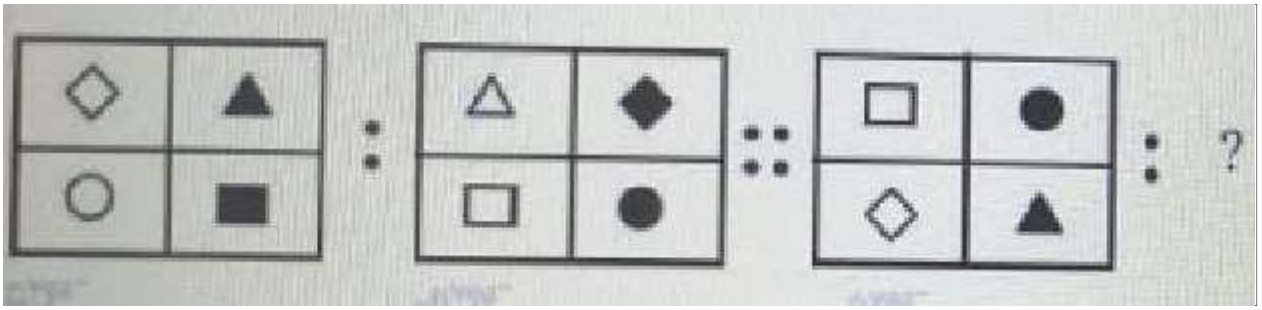
D-1

Solution 25: Option B

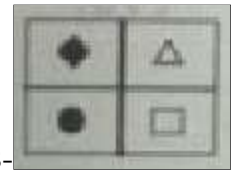
Question 26:- The figure marked ―X‖ is folded to form a box. Four possible boxes A,B,C and D are given below some of which can be formed and some cannot be formed. Choose from the alternatives the boxes that can be formed .

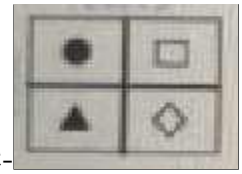


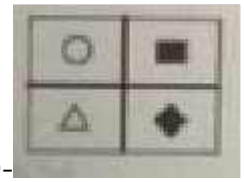
A- B and D only
B- B and C only
C- All of A,B,C and D
D-A and B only
Solution 26:- Option B (B and C only)
Question 27:- The Two figures on the left of the sign ‖ ::‖ are related in a certain way. The same relationship holds goods for the second pair of figures on the right of the sign ‖ ::‖ of which ,one figure is missing .Find the missing figure from the alternatives.



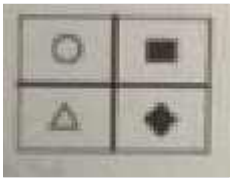
A-

B- 

C- 

D- 

Solution 27:-



Option D is correct as from the starting two image we can see that the position of the diagram in the adjacent column is interchanged but keeping the shading to that part of the image.

PROGRAMMING LOGIC

Question - In a Singly Circular Linked List, how many address fields are there
1
1+1
2
2+1
Answer : Option A

Question - Select best suitable answer for below functions
sizeof()
strlen
sizeOf() - returns size of string including null characters
strlen() - Return size of string including null characters
sizeOf() - returns size of string excluding null characters
strlen() - Return size of string excluding null characters
sizeOf() - returns size of string including null characters
strlen() - Return size of string excluding null characters
sizeOf() - returns size of string excluding null characters
strlen() - Return size of string including null characters
Answer : Option C

Question- When we compose a binary tree through the given preorder sequence, what will be left child of 6? (Note: Consider 4 as root node)
4, 2, 1, 3, 6, 5, 7
5
1
7
3
Answer : Option A

Questions - Based on below infix and postfix expressions, identify prefix expression
Infix Expression - P-Q*(R+S)/(W-X)*Y+Z
Postfix Expression - PORS+*-WX-Y*/Z+
P-/*Q+R+S*WXYZ-
-P/*Q+RS+*W-XYZ
-P/*Q+RS+*-WXYZ
P-/*+RS+Q*-WXYZ-

SIX PHRASE

Question - Which of the following is not a logical operator
|
&&
||
&
Answer : Option D

Question- The data modeling phase consists of which of the following?
Creation of logical data model
Creation of infographics
Creation of bigdata analysis model
Creation of evaluation tool
Answer : Option A

Question- What will be the output of the given program?

```
void main()
{
        char a[10][10]={—kellos‖ ,‖ hellos‖ ,‖ fellos‖ }
        printf(—%s‖ ,a[1])
}
```

hellos
ellos
Compile time error
ellos hellos fellos
Question- What will be the output?

```
class car
{
        public void Show()
        {
                System.out.println(—Brand is not defined yet‖ );
}
}
class mercedes extends car
{
        public void Show()
        {
        System.out.println(—It‘s mercedes‖ );
}
}
Class Benz extends mercedes
{
}
public class main()
{
        Public static void main(String[] args)
        {
                car obj = new Benz();
```

SIX PHRASE

```
        obj.Show();
}
}
```
Compile Time Error
Run Time Error
It‘s mercedes
Brand is not defined yet

Question - What will be the output of the following program?

```
public class Main
{
public static void main(String[] args)
{
try
{
    int[] arr = {10, 25, 2, 6, 8, 9, 7, 32}
        for(int i=0; i<arr.length; i++)
        {
            System.out.print(arr[i+1]);
        }
}
catch(Exception e)
{
    System.out.println(—Inside Exception‖ );
}
}
}
```
Type your answer here_____.

Question - What will be the output of the below code?

```
public class Main
{
    int x = 10;
    public static void main(String[] args)
    {
        try
{
    Main t1 = new Main();
    System.out.println(t1.x);
}
catch(Exception e)
{
    System.out.println(—Exception cought‖ );
    return;
}
}
static
```

```
{
    int x =20;
    System.out.print(x+— ‖ );
}
}
```

Enter your answer ONLY as a NUMERAL in the box

CODING

Question 1

We want to estimate the cost of painting a property.

Interior wall painting cost is Rs.18 per sq.ft. and exterior wall painting cost is Rs.12 per sq.ft.

Take input as

1. Number of Interior walls
2. Number of Exterior walls
3. Surface Area of each Interior Wall in units of square feet
4. Surface Area of each Exterior Wall in units of square feet

If a user enters zero as the number of walls then skip Surface area values as User may don‘t want to paint that wall.

Calculate and display the total cost of painting the property

Example 1:

```
6
3
12.3
15.2
12.3
15.2
12.3
15.2
10.10
10.10
10.00
```

Total estimated Cost : 1847.4 INR

Note: Follow in input and output format as given in above example

Solution in C:

```
#include<stdio.h>
int main()
{
    int ni,ne,i=0;
    float int_p=18,ext_p=12,cost=0,temp;
    scanf("%d %d",&ni,&ne);
    if(ni<0 || ne<0 )
    {
       printf("INVALID INPUT");
```

SIX PHRASE

```
    }
    else if(ni==0 && ne==0)
    {
        printf("Total estimated Cost : 0.0");
    }
    else
    {
        for(i=0;i<ni;i++)
        {
            scanf("%f",&temp);
            cost+= int_p*temp;
        }
        for(i=0;i<ne;i++)
        {
            scanf("%f",&temp);
            cost+= ext_p*temp;
        }
        printf("Total estimated Cost : %.1f",cost);
    }
    return 0;
}
```

Solution in C++:

```
#include<iostream>
using namespace std;
int main()
{
    int ni,ne,i=0;
    float int_p=18,ext_p=12,cost=0,temp;
    scanf("%d %d",&ni,&ne);
    if(ni<0 || ne<0 )
    {
        cout<<"INVALID INPUT";
    }
    else if(ni==0 && ne==0)
    {
        cout<<"Total estimated Cost : 0.0";
    }
    else
    {
        for(i=0;i<ni;i++)
        {
            cin>>temp;
            cost+= int_p*temp;
        }
        for(i=0;i<ne;i++)
        {
            cin>>temp;
```

SIX PHRASE

```
            cost+= ext_p*temp;
        }
        cout<<"Total estimated Cost : "<<cost;

    }
    return 0;
}
```

Solution in Java:

```
import java.util.Scanner;
class Main {
   public static void main(String[] args) {
        int ni, ne, i = 0;
        float intP = 18, extP = 12, cost = 0, temp;
        Scanner sc = new Scanner(System.in);
        ni = sc.nextInt();
        ne = sc.nextInt();
        if(ni < 0 || ne < 0) {
            System.out.print("INVALID INPUT");
        } else if(ni == 0 && ne == 0) {
            System.out.print("Total estimated Cost : 0.0");
        } else {
            for(i = 0; i < ni; i++) {
                temp = sc.nextFloat();
                cost += intP * temp;
            }
            for(i = 0; i < ne; i++) {
                temp = sc.nextFloat();
                cost += extP * temp;
            }
            System.out.printf("Total estimated Cost : %.1f", cost);
        }
   }
}
```

Solution in Python:

```
interior_walls = int(input())
exterior_walls = int(input())
if interior_walls:
    int_walls = []
    for i in range(interior_walls):
        int_walls.append(float(input()))
if exterior_walls:
    ext_walls = []
    for i in range(exterior_walls):
        ext_walls.append(float(input()))
if exterior_walls < 0 or interior_walls < 0:
    print(—Invalid Input‖ )
    exit()
```

SIX PHRASE

```
if exterior_walls and interior_walls:
        print("Total estimated Cost : ",(sum(int_walls)*18+sum(ext_walls)*12),"INR")
else:
        if exterior_walls:
            print("Total estimated Cost : ",sum(ext_walls)*12,"INR")
        elif interior_walls:
             print("Total estimated Cost : ",sum(int_walls)*18,"INR")
        else:
            print("Total estimated Cost : 0.0 INR")
```

Question 2

A City Bus is a Ring Route Bus which runs in circular fashion.That is, Bus once starts at the Source Bus Stop, halts at each Bus Stop in its Route and at the end it reaches the Source Bus Stop again.

If there are n number of Stops and if the bus starts at Bus Stop 1, then after nth Bus Stop, the next stop in the Route will be Bus Stop number 1 always.

If there are n stops, there will be n paths.One path connects two stops. Distances (in meters) for all paths in Ring Route is given in array Path[] as given below:

Path = [800, 600, 750, 900, 1400, 1200, 1100, 1500]

Fare is determined based on the distance covered from source to destination stop as Distance between Input Source and Destination Stops can be measured by looking at values in array Path[] and fare can be calculated as per following criteria:

If d =1000 metres, then fare=5 INR

(When calculating fare for others, the calculated fare containing any fraction value should be ceiled. For example, for distance 900n when fare initially calculated is 4.5 which must be ceiled to 5)

Path is circular in function. Value at each index indicates distance till current stop from the previous one. And each index position can be mapped with values at same index in BusStops [] array, which is a string array holding abbreviation of names for all stops as-

—THANERAILWAYSTN‖ = ‖ TH‖ , —GAONDEVI‖ = —GA‖ , —ICEFACTROY‖ = —IC‖ , —HARINIWASCIRCLE‖ = —HA‖ , —TEENHATHNAKA‖ = —TE‖ , —LUISWADI‖ = —LU‖ , —NITINCOMPANYJUNCTION‖ = —NI‖ , —CADBURRYJUNCTION‖ = —CA‖

Given, n=8, where n is number of total BusStops.

BusStops = [—TH‖ , ‖ GA‖ , ‖ IC‖ , ‖ HA‖ , ‖ TE‖ , ‖ LU‖ , ‖NI‖,‖CA‖]

Write a code with function getFare(String Source, String Destination) which take Input as source and destination stops(in the format containing first two characters of the Name of the Bus Stop) and calculate and return travel fare.

Example 1:

Input Values

ca

Ca

Output Values

INVALID OUTPUT

Example 2:

Input Values

NI

SIX PHRASE

HA
Output Values
23.0 INR
Note: Input and Output should be in format given in example.
Input should not be case sensitive and output should be in the format <FLOAT>
INR
Solution in Python:

```
import math
def getFare(source,destination):
        route=[ [ "TH", "GA", "IC", "HA", "TE", "LU", "NI", "CA"],
        [800,600,750,900,1400,1200,1100,1500]
            ]
        fare = 0.0
        if not (source in route[0] and destination in route[0]):
            print("Invalid Input")
            exit()
        if route[0].index(source) < route[0].index(destination):
            for i in range(route[0].index(source),route[0].index(destination)+1):
                fare+=route[1][i]
        elif route[0].index(destination) < route[0].index(source):
            for i in range(route[0].index(source)+1,len(route[0])):
                fare+=route[1][i]
            for i in range(0,route[0].index(destination)+1):
                fare+=route[1][i]
        return float(math.ceil(fare*0.005))

source = input()
destination = input()
fare = getFare(source,destination)
if fare == 0:
        print("Invalid Input")
else:
        print(fare)
```

Solution in C++:

```
#include <bits/stdc++.h>
using namespace std;
int  main() {
string s , d;
cin>>s>>d;
 transform(s.begin(),s.end() , s.begin(),::toupper);
 transform(d.begin(),d.end() , d.begin(),::toupper);
 string arrs[8] = {"TH" , "GA", "IC" , "HA" , "TE", "LU" ,"NI","CA"};
 float arr[8]={800,600,750,900,1400,1200,1100,1500};
 float res=0;
 int st ,ed;
 for(int i=0;i<8;i++)
 {
```

SIX PHRASE

```
        if(s==arrs[i])
        st=i;

        if(d==arrs[i])
        ed=i;

    }
    if(st==ed)
    {
        cout<<" INVALID INPUT";
        return 0;
    }
    else
    {
        int i=st+1;
        cout<<i;
          while(i!=ed+1)
          {
              res+=(arr[i]);
              i=(i+1)%8;
          }
          cout<<(ceil)(res*0.005);
          return 0;
    }
}
```

SIX PHRASE