

# Indian Institute of Technology, Madras - Centre for Continuing Education

## Notations :

- 1.Options shown in **green** color and with ✓ icon are correct.
- 2.Options shown in **red** color and with ✗ icon are incorrect.

**Question Paper Name :**

IIT M QUIZ 1 FOUNDATION DIPLOMA QPB2

16 Oct 2022

**Subject Name :**

2022 Oct: IIT M QUIZ 1 FOUNDATION  
DIPLOMA QPB2

**Creation Date :**

2022-10-10 18:02:25

**Duration :**

180

**Total Marks :**

355

**Display Marks:**

Yes

**Share Answer Key With Delivery Engine :**

Yes

**Actual Answer Key :**

Yes

**Calculator :**

Scientific

**Magnifying Glass Required? :**

No

**Ruler Required? :**

No

**Eraser Required? :**

No

**Scratch Pad Required? :**

No

**Rough Sketch/Notepad Required? :**

No

**Protractor Required? :**

No

**Show Watermark on Console? :**

Yes

**Highlighter :**

No

**Auto Save on Console?**

Yes

**Change Font Color :**

No

<b>Change Background Color :</b>	No
<b>Change Theme :</b>	No
<b>Help Button :</b>	No
<b>Show Reports :</b>	No
<b>Show Progress Bar :</b>	No

## **Group I**

<b>Group Number :</b>	1
<b>Group Id :</b>	6406539322
<b>Group Maximum Duration :</b>	0
<b>Group Minimum Duration :</b>	90
<b>Show Attended Group? :</b>	No
<b>Edit Attended Group? :</b>	No
<b>Break time :</b>	0
<b>Group Marks :</b>	355
<b>Is this Group for Examiner? :</b>	No
<b>Examiner permission :</b>	Cant View
<b>Show Progress Bar? :</b>	No
<b>Revisit allowed for group Instructions? :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Minimum Instruction Time :</b>	0
<b>Group Time In :</b>	Minutes
<b>Navigate To Group Summary From Last Question? :</b>	No
<b>Disable Submit Button During Assessment? :</b>	No

## **Sem1 CT**

<b>Section Id :</b>	64065323874
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<b>Section Number :</b>	1
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	15
<b>Number of Questions to be attempted :</b>	15
<b>Section Marks :</b>	50
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	No
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	64065355169
<b>Question Shuffling Allowed :</b>	No

**Question Number : 1 Question Id : 640653386167 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT " FOUNDATION LEVEL:SEMESTER I/DIRECT ENTRY DIPLOMA : COMPUTATIONAL THINKING "

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

**Options :**

6406531284464. ✓ Yes

6406531284465. ✗ No

**Question Number : 2 Question Id : 640653386168 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

## Correct Marks : 0

Question Label : Multiple Choice Question

Scores								
SeqNo	Name	Gender	DateOfBirth	TownCity	Mathematics	Physics	Chemistry	Total
0	Bhuvanesh	M	7 Nov	Erode	68	64	78	210
					■ ■ ■			
29	Naveen	M	13 Oct	Vellore	72	66	81	219

Words			
SeqNo	Word	PartOfSpeech	LetterCount
0	It	Pronoun	2
		■ ■ ■	
64	cane.	Noun	4

Library							
SeqNo	Name	Author	Genre	Language	Pages	Publisher	Year
0	Igniting Minds	Kalam	Nonfiction	English	178	Penguin	2002
		■ ■ ■					
29	Maigudi Days	Narayan	Fiction	English	150	Indian Thought	1943

Olympics							
SeqNo	Name	Gender	Nationality	Host country	Year	Sport	Medal
0	Karnam Malleswari	F	Indian	Australia	2000	Weightlifting	Bronze
		— — —					
49	Michael Phelps	M	American	China	2008	Swimming	Gold

Three sample cards out of 30 for Shopping Bills dataset

Item List

SV Stores Srivatsan 1				
Item	Category	Qty	Price	Cost
Carrots	Vegetables/Food	1.5	50	75
Soap	Toiletries	4	32	128
Tomatoes	Vegetables/Food	2	40	80
Bananas	Vegetables/Food	8	8	64
Socks	Footwear/Apparel	3	56	168
Curd	Dairy/Food	0.5	32	16
Milk	Dairy/Food	1.5	24	36

Sun General Vignesh 14				
Item	Category	Qty	Price	Cost
Phone Charger	Utilities	1	230	230
Razor Blades	Grooming	1	12	12
Razor	Grooming	1	45	45
Shaving Lotion	Grooming	0.8	180	144
Earphones	Electronics	1	210	210
Pencils	Stationery	3	5	15

Big Bazaar Sudeep 2				
Item	Category	Qty	Price	Cost
Baked Beans	Canned/Food	1	125	125
Chicken Wings	Meat/Food	0.5	600	300
Cocoa powder	Canned/Food	1	160	160
Capsicum	Vegetables/Food	0.8	180	144
Tie	Apparel	2	390	780
Clips	Household	0.5	32	16

**Options :**

6406531284466. ✓ Useful Data has been mentioned above.

6406531284467. ✗ This data attachment is just for a reference & not for an evaluation.

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355170

**Question Shuffling Allowed :** Yes

**Question Number : 3 Question Id : 640653386169 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Select the most appropriate datatype specific to "Scores" dataset for the left column.

Field	Data Type
a. Is Bhuvanesh's total marks > 200 ?	1. String
b. Gender	2. Character
c. TownCity	3. Boolean
d. Sequence number	4. Integer

**Options :**

6406531284468. ✓ a - (3), b - (2), c- (1), d - (4)

6406531284469. ✗ a - (1), b - (2), c- (4), d - (3)

6406531284470. ✗ a - (2), b - (3), c- (1), d - (4)

6406531284471. ✗ a - (2), b - (1), c- (3), d - (4)

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355171

**Question Shuffling Allowed :** Yes

**Question Number : 4 Question Id : 640653386170 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Words" dataset. What will **count** represent at the end of the execution?

```
1 count = 0, Flag = False
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     if(X.PartOfSpeech == "Noun"){
5         Flag = True
6     }
7     else{
8         if(Flag){
9             count = count + 1
10        }
11    }
12    Move X to Table 2
13 }
```

**Options :**

6406531284472. ❌ Number of nouns in the dataset

6406531284473. ❌ Number of words before the first noun in the dataset

6406531284474. ❌ Number of words after the first noun in the dataset

6406531284475. ✓ Number of words except nouns after the first noun in the dataset

**Question Number : 5 Question Id : 640653386171 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Scores" dataset. What will **count** represent at the end of the execution?

```

1 count = 0, A = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     if(X.Gender == 'F' or X.Mathematics > X.Physics){
5         A = 1
6     }
7     else{
8         count = count + 1
9     }
10    Move X to Table 2
11 }
```

### Options :

6406531284476. ❌ Number of male students whose Physics marks are greater than Mathematics marks

6406531284477. ✓ Number of male students whose Physics marks are greater than or equal to Mathematics marks

6406531284478. ❌ Number of female students whose Physics marks are greater than or equal to Mathematics marks

6406531284479. ❌ Number of female students whose Physics marks are less than or equal to Mathematics marks

**Question Number : 6 Question Id : 640653386173 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Shopping Bills" dataset. Procedure **findCommon** takes pair of cards **X** and **Y** as input and returns True if the two cards share at least one common item otherwise returns False. What will **count** represent at the end of the execution?

```

1 count = 0
2 while(Pile 1 has more cards){
3     Read the top card X from Pile 1
4     Move the card X to Pile 2
5     while(Pile 1 has more Cards){
6         Read the top card Y from Pile 1
7         if(X.ShopName == Y.ShopName and findCommon(X, Y)){
8             count = count + 1
9         }
10        Move the card Y to Pile 3
11    }
12    Move all the cards from Pile 3 to Pile 1
13 }
```

### Options :

6406531284484. ❌ Number of pair of bills with at least one common items

6406531284485. ✓ Number of pair of bills from the same shop with at least one common items

6406531284486. ❌ Number of pair of bills with at least two common items

6406531284487. ❌ Number of pair of bills from the same shop with no common items

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355172

**Question Shuffling Allowed :** Yes

**Question Number : 7 Question Id : 640653386172 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 4**

**Question Label : Multiple Choice Question**

The following pseudocode is executed using the “Words” dataset. What will **count** represent at the end of the execution?

```

1 count = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     Move X to Table 2
5     Flag = True
6     while(Table 1 has more rows){
7         Read the first row Y in Table 1
8         if(X.Word == Y.Word){
9             Flag = False
10            Move Y to Table 2
11        }
12        else{
13            Move Y to Table 3
14        }
15    }
16    if(Flag){
17        count = count + 1
18    }
19    Move all rows from Table 3 to Table 1
20 }
```

### Options :

6406531284480. ✘ Number of words

6406531284481. ✘ Number of duplicate words

6406531284482. ✘ Number of pair of unique words

6406531284483. ✓ Number of words which occurs only once

**Question Number : 8 Question Id : 640653386174 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Words" table. At the end of the execution, **count** stores the number of pair of nouns such that both nouns have either same letter count or both end with a full stop. Choose the correct code fragment to complete the pseudocode.

```

1 count = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     Move X to Table 2
5     if(X.PartOfSpeech == "Noun"){
6         while(Table 1 has more rows){
7             Read the first row Y in Table 1
8             Move Y to Table 3
9             if(**Statement 1**){
10                if(**Statement 2**){
11                    count = count + 1
12                }
13                else{
14                    if(**Statement 3**){
15                        count = count + 1
16                    }
17                }
18            }
19        }
20        Move all rows from Table 3 to Table 1
21    }
22 }
```

### Options :

6406531284488. ✓ Statement 1: X.PartOfSpeech == Y.PartOfSpeech

Statement 2: X.LetterCount == Y.LetterCount

Statement 3: X.Word and Y.Word end with a full stop

6406531284489. ✗ Statement 1: X.Word and Y.Word end with a full stop

Statement 2: X.PartOfSpeech == Y.PartOfSpeech

Statement 3: X.LetterCount == Y.LetterCount

6406531284490. ✗ Statement 1: X.LetterCount == Y.LetterCount

Statement 2: X.Word and Y.Word end with a full stop

Statement 3: X.PartOfSpeech == Y.PartOfSpeech

6406531284491. ✗ Statement 1: X.LetterCount == Y.LetterCount

Statement 2: X.PartOfSpeech == Y.PartOfSpeech

Statement 3: X.Word and Y.Word end with a full stop

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355173

**Question Shuffling Allowed :** Yes

**Question Number : 9 Question Id : 640653386175 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Select Question

Sripriya has used a variable **max** to keep track of the maximum total score to find the maximum total score using "Scores" dataset. There are many ways of initializing **max**. Choose the correct option(s) regarding the initialization of **max**.

It is a Multiple Select Question (MSQ)

**Options :**

6406531284492. ✓ Pick any random card **X** from the dataset and **max = X.Total**

6406531284493. ✓ Pick the top card **X** from the dataset and **max = X.Total**

6406531284494. ✗ Initialize **max** with any value greater than the possible maximum total score

6406531284495. ✓ Initialize **max** with any value less than the possible minimum total score

**Sub-Section Number :** 6

**Sub-Section Id :** 64065355174

**Question Shuffling Allowed :** Yes

**Question Number : 10 Question Id : 640653386176 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Select Question

The following pseudocode is executed using the "Scores" dataset. At the end of the execution, **count** captures the number of girls who scored at least 75 marks in Physics. Choose the correct code fragment(s) to complete the pseudocode.

It is a Multiple Select Question (MSQ).

```
1 count = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     ****
5     *****Fill the code*****
6     ****
7     Move X to Table 2
8 }
```

## Options :

```
1 if(X.Gender == 'F' or X.Physics >= 75){
2     count = count + 1
3 }
```

6406531284496. ✘

```
1 if(X.Gender == 'F'){
2     A = 1
3 }
4 if(X.Physics >= 75){
5     B = 1
6 }
7 if((A + B) > 1){
8     count = count + 1
9 }
```

6406531284497. ✘

```
1 A = 0, B = 0
2 if(X.Gender == 'F'){
3     A = 1
4 }
5 if(X.Physics >= 75){
6     B = 1
7 }
8 if((A + B) > 1){
9     count = count + 1
10 }
```

6406531284498. ✓

6406531284499. ✓

```
1 A = 0, B = 1
2 if(X.Gender == 'F'){
3     A = 1
4 }
5 if(X.Physics < 75){
6     B = 0
7 }
8 if((A + B) > 1{
9     count = count + 1
10 }
```

**Question Number : 11 Question Id : 640653386177 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Select Question

The following pseudocode is executed using the “Scores” dataset. At the end of the execution, **A** captures the number of students who are male from Bengaluru or have scored less marks in Physics than the average Physics marks. Assume that the variable **Avg** holds the value of the average Physics marks. But the pseudocode may have mistakes. Identify all such mistakes (if any). Assume that all statements not listed in the options below are free of errors.

It is a Multiple Select Question (MSQ).

```

1 A = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     C = False, D = False
5     if(X.Gender == 'M' or X.cityTown == "Bengaluru"){
6         C = True
7     }
8     if(X.Physics > Avg){
9         D = True
10    }
11    if(C or D){
12        A = A + 1
13    }
14    Move X to Table 2
15 }
```

### Options :

6406531284500. ✓ Line 5

6406531284501. ✓ Line 8

6406531284502. ✗ Line 11

6406531284503. ✗ Line 12

6406531284504. ✗ No error in the code

**Question Number : 12 Question Id : 640653386178 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Select Question

The following pseudocode is executed using the “Scores” dataset. At the end of the execution, **count** captures the number of pairs of students having either same gender or from the same city but not both. Choose the correct code fragment to complete the pseudocode.

It is a Multiple Select Question (MSQ).

```

1 count = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     Move X to Table 2
5     while(Table 1 has more rows){
6         Read the first row Y in Table 1
7         Move Y to Table 3
8         count = count + findPair(X, Y)
9     }
10    Move all rows from Table 3 to Table 1
11}
12 Procedure findPair(X, Y)
13 *****
14 ***** Fill the code *****
15 *****
16 End findPair

```

## Options :

```

1 A = 0, B = 0
2 if(X.Gender == Y.Gender or X.CityTown == Y.CityTown){
3     A = A + 1
4 }
5 if(X.Gender == Y.Gender and X.CityTown == Y.CityTown){
6     B = B + 1
7 }
8 return(A-B)

```

6406531284505. ✓

```

1 A = 0, B = 0
2 if(X.Gender == Y.Gender and X.CityTown == Y.CityTown){
3     A = A + 1
4 }
5 if(X.Gender == Y.Gender or X.CityTown == Y.CityTown){
6     B = B + 1
7 }
8 return(A-B)

```

6406531284506. ❌

6406531284507. ✓

```
1 A = False, B = False
2 if(X.Gender == Y.Gender){
3     A = True
4 }
5 if(X.CityTown == Y.CityTown){
6     B = True
7 }
8 if((A and not B) or (not A and B)){
9     return(1)
10}
11 return(0)
```

```
1 A = False, B = False
2 if(X.Gender == Y.Gender){
3     A = True
4 }
5 if(X.CityTown == Y.CityTown){
6     B = True
7 }
8 if((A or not B) and (not A or B)){
9     return(1)
10}
11 return(0)
```

6406531284508. \*

**Question Number : 13 Question Id : 640653386179 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 4**

**Question Label : Multiple Select Question**

The following pseudocode is executed using the "Library" dataset. Assume that Table 1 contains all the books authored by "Narayan" only. Also assume that the "Year" field of each book item is distinct in the Table.

```

1 Procedure groupBooks(Table 1)
2     A = 0, B = 0
3     while(Table 1 has more rows){
4         Read the first row Z from Table 1
5         if(Z.Year > A){
6             A = Z.Year
7             B = Z.SeqNo
8         }
9         Move Z to Table 2
10    }
11    while(Table 2 has more rows){
12        Read the first row K from Table 2
13        if(K.SeqNo == B){
14            Move K to Table 3
15        }
16        else{
17            Move K to Table 4
18        }
19    }
20 End groupBooks

```

Which of the following statement(s) are correct at the end of execution of this pseudocode?

It is a Multiple Select Question (MSQ).

**Options :**

6406531284509. ✓ Table 2 will be empty

6406531284510. ✓ Table 3 will have one record corresponding to the most recently published book of "Narayan".

6406531284511. ✗ Table 3 will have one record corresponding to the earliest published book of "Narayan".

6406531284512. ✗ Table 4 will have one record corresponding to the earliest published book of "Narayan".

6406531284513. ✗ Table 4 will have one record corresponding to the most recently published book of "Narayan".

**Question Number : 14 Question Id : 640653386180 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

## Correct Marks : 4

Question Label : Multiple Select Question

The procedure **countGirls** is executed using the "Scores" dataset which counts the number of girls who have got less than the subject-wise average marks in at least one of the three subjects.

Assume that the subject-wise average marks for Physics, Chemistry and Mathematics are stored in variables **P,C** and **M** respectively. Choose the correct code fragment(s) to complete the procedure.

It is a Multiple Select Question (MSQ).

```
1 Procedure countGirls(P,C,M)
2     count = 0
3     while(Table 1 has more rows){
4         Read the first row X from Table 1
5         *****
6         ****Fill in the code**** 
7         ****
8         Move X to Table 2
9     }
10    return(count)
11 End countGirls
```

Options :

```
1 if(X.Gender == 'F'){
2     if(X.Mathematics < M or X.Physics < P or X.Chemistry < C){
3         count = count + 1
4     }
5 }
```

6406531284514. ✓

```
1 if(X.Gender == 'F'){
2     if(not(X.Mathematics >= M and X.Physics >= P and X.Chemistry >= C)){
3         count = count + 1
4     }
5 }
```

6406531284515. ✓

```
1 if(X.Gender == 'F' and (X.Mathematics < M or X.Physics < P or X.Chemistry <
2     C)){
3     count = count + 1
4 }
```

6406531284516. ✓

```
1 if(X.Gender == 'F' and (X.Mathematics < M and X.Physics < P and X.Chemistry <
2   C)){
3   count = count + 1
4 }
```

6406531284517. \*

**Sub-Section Number :** 7

**Sub-Section Id :** 64065355175

**Question Shuffling Allowed :** No

**Question Id : 640653386181 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (15 to 16)**

Question Label : Comprehension

Answer the given subquestions.

**Sub questions**

**Question Number : 15 Question Id : 640653386182 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

The following pseudocode is executed using the “Olympics” dataset. Procedure **doSomething** accepts a Table of rows which contains rows of same player. Assume that every player has won at least two medals and only one medal in any year. What will **(B-A)** represent at the end of the execution?

```

1 Procedure doSomething(Table T1)
2     A = 2030, B = 2030
3     while(Table T1 has more rows){
4         Read the first row Z from Table T1
5         if(Z.Year < A){
6             B = A
7             A = Z.Year
8         }
9         if(Z.Year > A and Z.Year < B){
10            B = Z.Year
11        }
12        Move the row Z to Table T2
13    }
14    return((B - A))
15 End doSomething

```

### Options :

6406531284518. ✓ Year gap between first and second medal won by a player

6406531284519. ✗ Year gap between first and latest medal won by a player

6406531284520. ✗ Year gap between latest and second latest medal won by a player

6406531284521. ✗ Year gap between first and second latest medal won by a player

**Question Number : 16 Question Id : 640653386183 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 4**

Question Label : Multiple Choice Question

The following pseudocode is executed on the "Olympics" dataset. Use the procedure

**doSomething** in the previous question. What will **count** represent at the end of the execution?

Assume that every player has won at least two medals and only one medal in a year.

```

1 count = 0, max = 0
2 while(Table 1 has more rows){
3     Read the first row X from Table 1
4     Move the row X to Table 2
5     while(Table 1 has more rows){
6         Read the first row Y from Table 1
7         if(X.Name == Y.Name){
8             Move the row Y to Table 2
9         }
10        else{
11            Move the row Y to Table 3
12        }
13    }
14    diff = doSomething(Table 2)
15    if(diff == max){
16        count = count + 1
17    }
18    if(diff > max){
19        max = diff
20        count = 1
21    }
22    Delete all the rows from Table 2
23    Move all the rows from Table 3 to Table 1
24 }
```

### **Options :**

6406531284522. ✓ Number of players with maximum year gap between first and second medal
6406531284523. ✗ Number of players with minimum year gap between first and second medal
6406531284524. ✗ Number of players with maximum year gap between latest and second latest medal
6406531284525. ✗ Number of players with minimum year gap between latest and second latest medal

## **Sem1 English1**

**Section Id :** 64065323875

**Section Number :** 2

**Section type :** Online

**Mandatory or Optional :** Mandatory

**Number of Questions :** 27

<b>Number of Questions to be attempted :</b>	27
<b>Section Marks :</b>	50
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	No
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	64065355176
<b>Question Shuffling Allowed :</b>	No

**Question Number : 17 Question Id : 640653386184 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL: SEMESTER 1: ENGLISH 1"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?  
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

**Options :**

6406531284526. ✓ Yes

6406531284527. ✗ No

<b>Sub-Section Number :</b>	2
<b>Sub-Section Id :</b>	64065355177
<b>Question Shuffling Allowed :</b>	No

**Question Id : 640653386185 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

## **Question Numbers : (18 to 22)**

Question Label : Comprehension

Nature is an infinite source of beauty. Sunrise and sunset, mountains and rivers, lakes and glaciers, forests and fields provide joy and bliss to the human mind and heart for hours together. Everything in nature is splendid and divine. Every day and every season of the year has a peculiar beauty to unfold. Only one should have eyes to behold it and heart to feel it like the English poet William Wordsworth who after seeing daffodils said; "*And then my heart with pleasure fills and dances with the daffodils*". Nature is a great teacher. The early man was thrilled with beauty and wonders of nature. The Aryans worshipped nature. One can learn the lessons in the vast school of nature.

Unfortunately, the strife, the stress and the tension of modern life have made people immune to beauties of nature. Their life is so full of care that they have no time to stand and stare. They cannot enjoy the beauty of flowing rivers, swinging trees, flying birds and majestic mountains and hills. There is however, a cry to go back to village from the concrete and artificial jungle of cities. Hence the town planners of today pay special attention to provide enough number of natural scenic spots in town planning. To develop a balanced personality, one needs to have a healthy attitude which can make us appreciate and enjoy the beauty of nature.

There is other balm to soothe our tired soul and listless mind than the infinite nature all around us. We should enjoy it fully to lead a balanced and harmonious life, full of peace and tranquillity.

Based on the above data, answer the given subquestions

### **Sub questions**

**Question Number : 18 Question Id : 640653386186 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Which of the following words has the SAME meaning as the word '*'care'* as used in the passage?

**Options :**

6406531284528. ❌ Pleasure

6406531284529. ❌ Needs

6406531284530. ✘ Want

6406531284531. ✓ Grief

**Question Number : 19 Question Id : 640653386187 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Which of the following statements is not made in the passage about Nature?

**Options :**

6406531284532. ✓ The early man was scared of Nature.

6406531284533. ✘ Nature is a great teacher.

6406531284534. ✘ Everything in nature is splendid and divine.

6406531284535. ✘ Nature is an infinite source of beauty.

**Question Number : 20 Question Id : 640653386188 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Why do people not enjoy the beauty of Nature?

**Options :**

6406531284536. ✘ They are afraid of nature.

6406531284537. ✓ Their life is full of worries and tensions.

6406531284538. ✘ They do not consider nature as balm to soothe their fired minds.

6406531284539. ✘ They are running after material pleasures.

**Question Number : 21 Question Id : 640653386189 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

What are the town planners doing today?

**Options :**

6406531284540. ❌ Making efforts to inculcate healthy attitude among people.

6406531284541. ❌ Supporting the cry to go back to villages.

6406531284542. ❌ Establishing balance between concrete and artificial jungle of cities.

6406531284543. ✓ Providing facilities for enjoying nature.

**Question Number : 22 Question Id : 640653386190 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

According to the author of the passage, Nature:

**Options :**

6406531284544. ✓ Is abundantly glorious and divine.

6406531284545. ❌ Brings uniformity in all seasons.

6406531284546. ❌ Is the creator of this universe.

6406531284547. ❌ Is the ultimate salvation of man.

**Question Id : 640653386191 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (23 to 27)**

Question Label : Comprehension

Listen to the audio sample and answer the subquestions.



885\_640653\_0\_1984128\_hs1001fdqz1e1s1q6.mp3

**Sub questions**

**Question Number : 23 Question Id : 640653386192 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Who designed the first Macintosh computer?

**Options :**

6406531284548. ✘ Mark Zuckerberg

6406531284549. ✓ Steve Jobs

6406531284550. ✘ Jeff Bezos

6406531284551. ✘ Elon Musk

**Question Number : 24 Question Id : 640653386193 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

What is the meaning of 'Typography' ?

**Options :**

6406531284552. ✘ The art of making maps.

6406531284553. ✓ The art of arranging typed words.

6406531284554. ✘ The art of writing a dictionary.

6406531284555. ✘ The art of writing in shorthand.

**Question Number : 25 Question Id : 640653386194 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

What is the meaning of the phrase 'connect the dots' ?

**Options :**

6406531284556. ✘ To do something pointless.

6406531284557. ✘ To make a bad situation worse.

6406531284558. ✘ Better to show than tell.

6406531284559. ✓ Bring together information from different places.

**Question Number : 26 Question Id : 640653386195 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

After leaving Apple, which company did Steve Jobs start?

**Options :**

6406531284560. ✘ IBM

6406531284561. ✘ Intel

6406531284562. ✓ NeXT

6406531284563. ✘ Samsung

**Question Number : 27 Question Id : 640653386196 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Which is the world's first computer animated feature film?

**Options :**

6406531284564. ✓ Toy Story

6406531284565. ✘ Soul

6406531284566. ✘ Finding Nemo

6406531284567. ✘ Luca

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355178

**Question Shuffling Allowed :** No

**Question Id : 640653386197 Question Type : COMPREHENSION Sub Question Shuffling  
Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A  
Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (28 to 32)**

Question Label : Comprehension

**Read the following telephonic conversation and fill in the blank with appropriate responses:**

John: Good morning. Is this Abe publishers?

Mary: Yes, this is Abe publishers. (i)\_\_\_\_\_

John: I am John and I ordered a book last week.

Mary: (ii)\_\_\_\_\_

John: My order was for 'The Oldman and the Sea.'

Mary: (iii)\_\_\_\_\_, we have exhausted its stock here.

John: Then, could you send me 'The Tale of Two Cities' instead?

Mary: Sure sir. (iv)\_\_\_\_\_

John: (v) \_\_\_\_\_. It is 2B, Red Heights, London.

Mary: Thank you sir. We will dispatch it soon.

Based on the above data, answer the given subquestions

**Sub questions**

**Question Number : 28 Question Id : 640653386198 Question Type : MCQ Is Question  
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction  
Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Complete blank (i) with an appropriate response.

**Options :**

6406531284568. ❌ Welcome sir

6406531284569. ✓ May I know who is speaking

6406531284570. ❌ What do you want

**Question Number : 29 Question Id : 640653386199 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Complete blank (ii) with an appropriate response.

**Options :**

6406531284572. ✩ Could you please tell me about your order

6406531284573. ✩ What did you order

6406531284574. ✩ Where did you order

6406531284575. ✓ Could you please tell me what did you order

**Question Number : 30 Question Id : 640653386200 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Complete blank (iii) with an appropriate response

**Options :**

6406531284576. ✓ Sorry sir

6406531284577. ✩ Good

6406531284578. ✩ Thanks sir

6406531284579. ✩ We are disappointed

**Question Number : 31 Question Id : 640653386201 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Complete blank (iv) with an appropriate response

**Options :**

6406531284580. ✓ Could you please share your address again

6406531284581. ✗ We don't have it

6406531284582. ✗ When do you want it

6406531284583. ✗ Share your name please

**Question Number : 32 Question Id : 640653386202 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Complete blank (v) with an appropriate response

**Options :**

6406531284584. ✗ Definitely

6406531284585. ✗ Sure

6406531284586. ✓ Sure, please note it down

6406531284587. ✗ Okay

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355179

**Question Shuffling Allowed :** No

**Question Id : 640653386205 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (33 to 35)**

Question Label : Comprehension

**Match Column A with suitable options in Column B. (Hint: Word collocation)**

A	B
1. Proud	a) In
2. Belief	b) At
3. Surprised	c) To

Based on the above data, answer the given subquestions

**Sub questions**

**Question Number : 33 Question Id : 640653386206 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Proud \_\_\_\_\_

**Options :**

6406531284592. ✗ In

6406531284593. ✗ At

6406531284594. ✓ To

**Question Number : 34 Question Id : 640653386207 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Belief \_\_\_\_\_

**Options :**

6406531284595. ✓ In

6406531284596. ✗ At

6406531284597. ✗ To

**Question Number : 35 Question Id : 640653386208 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Surprised \_\_\_\_\_

**Options :**

6406531284598. ❌ In

6406531284599. ✓ At

6406531284600. ❌ To

**Sub-Section Number : 5**

**Sub-Section Id : 64065355180**

**Question Shuffling Allowed : Yes**

**Question Number : 36 Question Id : 640653386203 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

*'I love hunting/ good wine/ and good food//'* has the same meaning as *'I love hunting good wine and good food//'*.

**Options :**

6406531284588. ❌ TRUE

6406531284589. ✓ FALSE

**Question Number : 37 Question Id : 640653386204 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Pause is like a punctuation mark to spoken language.

**Options :**

6406531284590. ✓ TRUE

6406531284591. ✗ FALSE

**Question Number : 38 Question Id : 640653386209 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

What is the meaning of the phrasal verb '*black out*'?

**Options :**

6406531284601. ✗ To explode

6406531284602. ✓ To become unconscious

6406531284603. ✗ To telephone

6406531284604. ✗ To continue

**Question Number : 39 Question Id : 640653386210 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Choose the correct option.

To join this sports academy, students \_\_\_\_\_ be 17 years old.

**Options :**

6406531284605. ✗ Has to

6406531284606. ✓ Must

**Question Number : 40 Question Id : 640653386211 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

The messenger is from a foreign land. Choose an appropriate word to replace 'foreign'.

**Options :**

6406531284607. ✓ Alien

6406531284608. ✗ Abroad

6406531284609. ✗ Outside

6406531284610. ✗ Distant

**Question Number : 41 Question Id : 640653386212 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Choose the odd one out from the following.

Different, contrast, contract, distinct

**Options :**

6406531284611. ✗ Different

6406531284612. ✗ Contrast

6406531284613. ✓ Contract

6406531284614. ✗ Distinct

**Question Number : 42 Question Id : 640653386213 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Choose the appropriate option.

The customer complained that the vegetables are \_\_ cooked.

**Options :**

6406531284615. ✘ Over

6406531284616. ✘ Under

6406531284617. ✓ Both Over and Under

6406531284618. ✘ Enough

**Question Number : 43 Question Id : 640653386214 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Choose the appropriate option.

Can you give me \_\_ money?

**Options :**

6406531284619. ✘ Few

6406531284620. ✓ Some

6406531284621. ✘ Little

6406531284622. ✘ All of these

**Question Number : 44 Question Id : 640653386215 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the conjunction in the following sentence.

*The weather was alright; furthermore, the sun was shining.*

**Options :**

6406531284623. ✘ Weather

6406531284624. ✘ Alright

6406531284625. ✓ Furthermore

6406531284626. ✘ Shining

**Question Number : 45 Question Id : 640653386216 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Choose the appropriate option.

\_\_\_\_\_ dish you cooked tasted good.

**Options :**

6406531284627. ✘ A

6406531284628. ✘ An

6406531284629. ✓ The

6406531284630. ✘ No article

**Question Number : 46 Question Id : 640653386217 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the preposition in the following sentence:

*The children were gossiping during the lecture.*

**Options :**

6406531284631. ✘ Gossiping

6406531284632. ✘ Children

6406531284633. ✘ Lecture

6406531284634. ✓ During

**Question Number : 47 Question Id : 640653386218 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Which one of the following words is an adverb?

**Options :**

6406531284635. ✘ Enthralling

6406531284636. ✘ Ideal

6406531284637. ✘ Classy

6406531284638. ✓ Beautifully

**Question Number : 48 Question Id : 640653386219 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Select true/false for the following statement.

The word '*cheerfully*' is an adjective.

**Options :**

6406531284639. ✘ TRUE

6406531284640. ✓ FALSE

**Question Number : 49 Question Id : 640653386220 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Choose the correct answer.

Neither the man nor his son \_\_\_\_\_ convinced of the idea.

**Options :**

6406531284641. ✘ Has

6406531284642. ✓ Was

6406531284643. ✘ Have

6406531284644. ✘ Were

**Question Number : 50 Question Id : 640653386221 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the part of speech of the underlined word.

*I lost my wallet yesterday.*

**Options :**

6406531284645. ✓ Pronoun

6406531284646. ✗ Noun

6406531284647. ✗ Preposition

6406531284648. ✗ Verb

**Question Number : 51 Question Id : 640653386222 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blanks with an appropriate article:

Hamida knows how to play \_\_\_\_ Guitar.

**Options :**

6406531284649. ✗ A

6406531284650. ✗ An

6406531284651. ✓ The

6406531284652. ✗ None of these

**Question Number : 52 Question Id : 640653386223 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blanks with an appropriate article:

He has got \_\_\_\_\_ job.

**Options :**

6406531284653. ✓ A

6406531284654. ✗ An

6406531284655. ✗ The

6406531284656. ✗ None of these

**Question Number : 53 Question Id : 640653386224 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Which among the following words has a diphthong?

**Options :**

6406531284657. ✗ Tear

6406531284658. ✗ Share

6406531284659. ✗ Liter

6406531284660. ✓ Both Tear and Share

**Question Number : 54 Question Id : 640653386225 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Which among the following has /ei/ sound.

**Options :**

6406531284661. ✗ Kate

6406531284662. ✗ Cat

6406531284663. ✗ Weight

6406531284664. ✓ Both Kate and Weight

**Question Number : 55 Question Id : 640653386226 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Choose the word with /u/ sound from the following

**Options :**

6406531284665. ✓ Hook

6406531284666. ✗ Soon

6406531284667. ✗ Boon

6406531284668. ✗ Both Soon and Boon

**Question Number : 56 Question Id : 640653386227 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Vowels are produced due to the free flow of air. This statement is :

**Options :**

6406531284669. ✗ TRUE

6406531284670. ✓ FALSE

**Question Number : 57 Question Id : 640653386228 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Answer whether true or false.

/w/ and /y/ are monophthongs

**Options :**

6406531284671. ✘ TRUE

6406531284672. ✓ FALSE

## Sem1 Maths1

<b>Section Id :</b>	64065323876
<b>Section Number :</b>	3
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	12
<b>Number of Questions to be attempted :</b>	12
<b>Section Marks :</b>	50
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	No
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	64065355181
<b>Question Shuffling Allowed :</b>	No

**Question Number : 58 Question Id : 640653386229 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?  
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

**Options :**

6406531284673. ✓ Yes

6406531284674. ✗ No

**Question Number : 59 Question Id : 640653386230 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

**Instructions:**

- There are some questions which have functions with discrete valued domains (such as day, month, year etc). For simplicity, we treat them as continuous functions.
- For NAT type question, enter only one right answer even if you get multiple answers for that particular question.
- Notations:
  - $\mathbb{R}$ = Set of real numbers
  - $\mathbb{Q}$ = Set of rational numbers
  - $\mathbb{Z}$ = Set of integers
  - $\mathbb{N}$ = Set of natural numbers
- The set of natural numbers includes 0.

**Options :**

6406531284675. ✓ Useful Data has been mentioned above.

6406531284676. ✗ This data attachment is just for a reference & not for an evaluation.

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355182

**Question Shuffling Allowed :** No

**Question Id : 640653386231 Question Type : COMPREHENSION Sub Question Shuffling  
Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A  
Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (60 to 62)**

**Question Label : Comprehension**

Consider two quadratic functions,  $p(x)$  and  $q(x)$ , whose  $x$ -intercepts are shown in Figure 1. The leading coefficients of both  $p(x)$  and  $q(x)$  are 1 and the  $y$ -intercepts are  $-27$ . The axis of symmetry of  $q(x)$  is  $x = 3$ , which also passes through one of the zeroes of  $p(x)$ . The line  $y = d$  passes through the vertices of  $p(x)$  and  $q(x)$ .

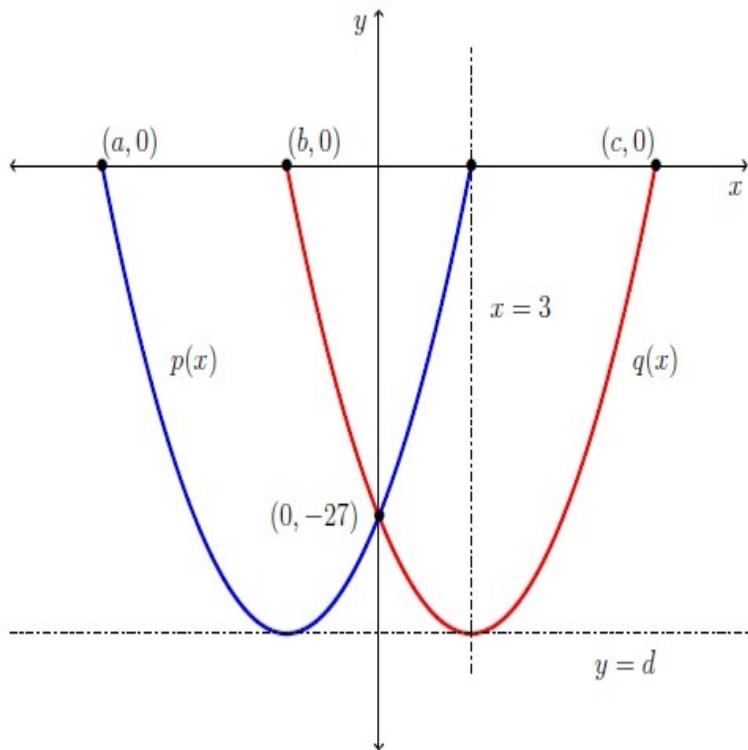


Figure 1

Based on this information, answer the given sub-questions

### **Sub questions**

**Question Number : 60 Question Id : 640653386232 Question Type : SA Calculator : None  
Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

**Question Label : Short Answer Question**

Enter the value of  $b + c + d$ ?

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

-30

**Question Number :** 61 **Question Id :** 640653386233 **Question Type :** SA **Calculator :** None

**Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Correct Marks :** 2

Question Label : Short Answer Question

Enter the value of  $a$ ?

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

-9

**Question Number :** 62 **Question Id :** 640653386234 **Question Type :** MSQ Is Question

**Mandatory :** No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Correct Marks :** 3

Question Label : Multiple Select Question

Choose the set of correct option(s)

**Options :**

6406531284679. ✓ The axis of symmetry of  $p(x)$  is  $x = -3$ .

6406531284680. ✗ The slopes of both  $p(x)$  and  $q(x)$  are same at  $(0, -27)$ .

6406531284681. ✓ The slope of  $p(x)$  is 6 but the slope  $q(x)$  is -6 at  $(0, -27)$ .

6406531284682. ✓ The discriminant of both the quadratic equations  $p(x) = 0$  and  $q(x) = 0$  are same

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355183

**Question Shuffling Allowed :** No

**Question Id : 640653386235 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (63 to 64)**

Question Label : Comprehension

Ritwik wrote 12 mock tests. His score in each mock test  $M(n)$  is represented as  $M(n) = -\left(\frac{n^2}{1000}\right)(n^3 - 15n^2 + 50n) + 40$ , where  $n$  represents the mock test number i.e.,  $n \in \{1, 2, \dots, 11, 12\}$ . He should score 40 or above to pass the assignment.

Based on this information, answer the given sub-questions

**Sub questions**

**Question Number : 63 Question Id : 640653386236 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

How many times did Ritwik score exactly 40?

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

2

**Question Number : 64 Question Id : 640653386237 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Short Answer Question

In total, how many mock tests did Ritwik pass?

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

6

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355184

**Question Shuffling Allowed :** No

**Question Id : 640653386238 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (65 to 68)**

Question Label : Comprehension

Consider a relation  $R \subseteq A \times A$ , where  $A = \{1, 2, 3\}$ . Given below is Table 1, in which Column A shows the relation and Column B shows the type of relation.

Relation ( $R$ ) (Column A)	Type of Relation (Column B)
$R_1 = \{(1, 1)\}$	Symmetric relation
$R_2 = \{(1, 1), (2, 2), (3, 3)\}$	Anti-symmetric relation
$R_3 = \{(1, 1), (1, 2)\}$	Identity relation
$R_4 = \{(1, 3)\}$	Transitive relation
$R_5 = \{(1, 1), (2, 2), (3, 3), (1, 2)\}$	Reflexive relation
$R_6 = \{(1, 1), (1, 2), (2, 1), (2, 3)\}$	Equivalence relation

Table 1

Based on this information, answer the given sub-questions

### Sub questions

**Question Number : 65 Question Id : 640653386239 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

State 'True' or 'False' :  $R_6$  does not match with any type of relations given in Column B.

**Options :**

6406531284685. ✓ TRUE

6406531284686. ✗ FALSE

**Question Number : 66 Question Id : 640653386240 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

State 'True' or 'False' :  $R_1$  matches with all type of relations except anti-symmetric relation given in Column B.

**Options :**

6406531284687. ✗ TRUE

6406531284688. ✓ FALSE

**Question Number : 67 Question Id : 640653386241 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Short Answer Question

In total, how many relations given in Column A matches with transitive relation?

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

5

**Question Number : 68 Question Id : 640653386242 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

In total, how many relations given in Column A matches with reflexive relation?

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

2

<b>Sub-Section Number :</b>	5
<b>Sub-Section Id :</b>	64065355185
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 69 Question Id : 640653386243 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 5**

Question Label : Multiple Select Question

Consider the following relations defined on the set of integers

- $R_1 = \{(x, y) \mid x, y \in \mathbb{Z}, \text{ and } y = x^2 - 1\}$
- $R_2 = \{(x, y) \mid x, y \in \mathbb{Z}, \text{ and } |x| + |y| = 1\}$

Choose the correct option(s)?

**Options :**

6406531284691. ✘  $R_1 \cap R_2$  represents an injective function.

6406531284692. ✓  $R_2$  represents a relation but not a function.

6406531284693. ✓  $R_1$  represents a function.

6406531284694. ✘  $R_2$  represents a function

**Question Number : 70 Question Id : 640653386249 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 5**

Question Label : Multiple Select Question

Figure 2 shows the graph of a polynomial  $p(x)$ . Choose the set of correct option(s).

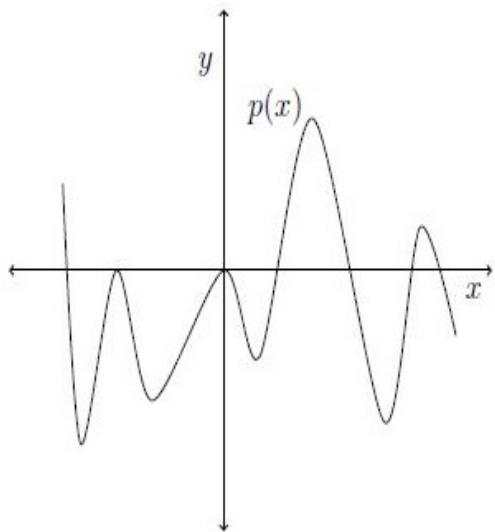


Figure 2

**Options :**

6406531284714. ✓ The degree of  $p(x)$  is at least 9.

6406531284715. ✓  $p(x)$  represent an odd degree polynomial.

6406531284716. ✗ Total number of turning point of  $p(x)$  are 9.

6406531284717. ✓ Multiplicities of zero and one of the negative root could be the same.

**Sub-Section Number :** 6

**Sub-Section Id :** 64065355186

**Question Shuffling Allowed :** Yes

**Question Number : 71 Question Id : 640653386244 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 5**

**Question Label : Short Answer Question**

Let  $A$  be the set of all points on the curve defined by the function  $f_1(x) = -x^2 + x + 30$  and let  $B$  be the set of all points on the curve  $f_2$  defined by the reflection of the curve  $f_1$  with respect to  $X$ - axis. If  $C$  is the set of all points on the axes(i.e.,  $x$  and  $y$  axis), then find the cardinality of set  $D$  where  $D = (A \cap B) \cup (A \cap C) \cup (B \cap C)$ .

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

4

**Sub-Section Number :** 7

**Sub-Section Id :** 64065355187

**Question Shuffling Allowed :** Yes

**Question Number : 72 Question Id : 640653386245 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 4**

**Question Label : Multiple Select Question**

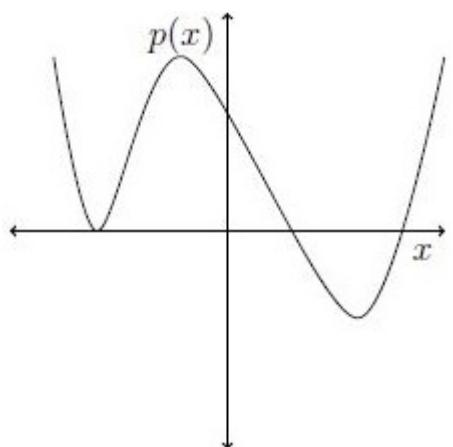
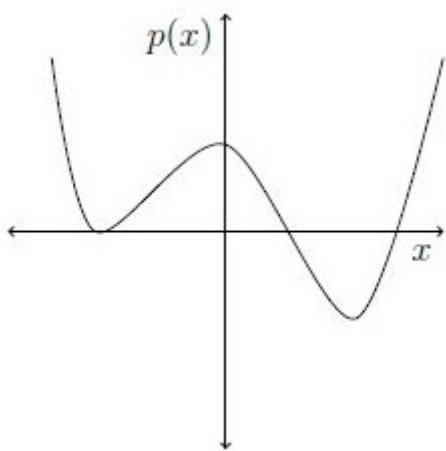
The polynomial  $p(x) = a_n x^n + a_{n-1} x^{n-1} + \dots + a_0$  has the following properties:

- $p(x)$  is an even degree polynomial.
- $p(x)$  has at least one positive real root and at least one negative real root.
- $(x + 4)^2$  is a factor of  $p(x)$ .
- $p(0) \neq 0$

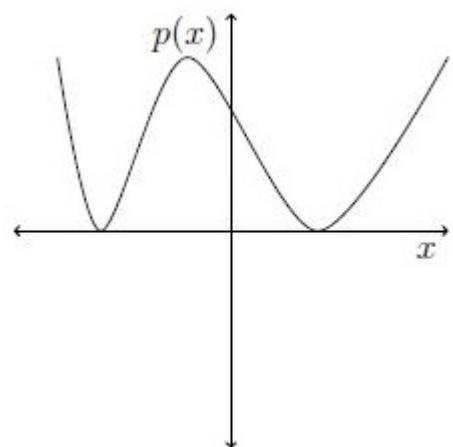
From the options given, choose the possible representations of  $p(x)$ .

**Options :**

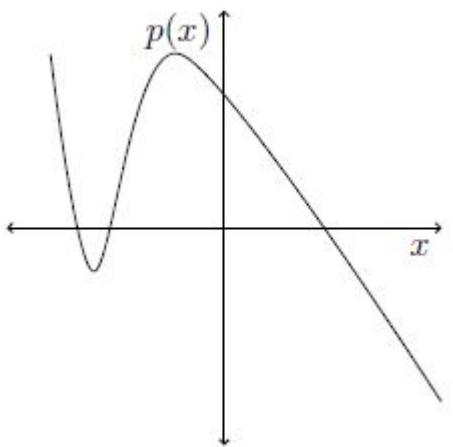
6406531284696. ✓



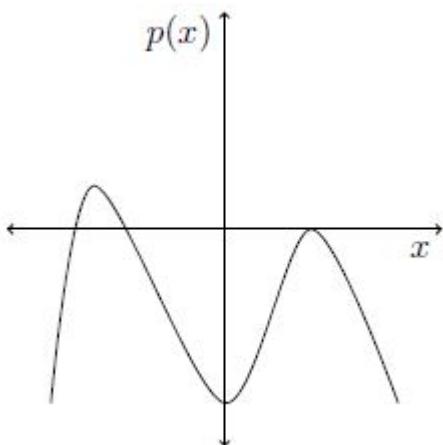
6406531284697. ✓



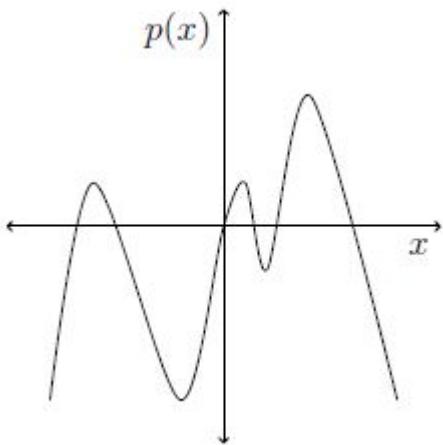
6406531284698. ✓



6406531284699. ❌



6406531284700. \*



6406531284701. \*

**Question Number : 73 Question Id : 640653386247 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Select Question

Which of the following statements is (are) correct?

**Options :**

6406531284706. ✓  $y - 6 = 3(x - 10)^2$  is an equation of a parabola whose vertex is at  $(10, 6)$ .

6406531284707. ✓  $p(x) = ax^5 + bx^4 + 2x + 8$  where  $a = 0$  and  $b \neq 0$ , is a polynomial of degree 4.

6406531284708. ✗  $-5x + 4y - 1 = 0$  and  $\frac{x}{4} - \frac{y}{5} = 1$  are perpendicular to each other.

6406531284709. ✓ 2x + 7y + 9 = 0 and 6x + 21y + 9 = 0 are parallel to each other.

**Sub-Section Number :** 8

**Sub-Section Id :** 64065355188

**Question Shuffling Allowed :** Yes

**Question Number : 74 Question Id : 640653386246 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

**Question Label : Multiple Select Question**

You are climbing a ladder which is slanted at an angle of 45 degrees (measured in the anticlockwise direction) with respect to the ground. The ladder, leaning against a wall, is at a vertical distance of 2 metres from the ground. If you are at a location which cuts the ladder in the ratio 2 : 1 from the top to bottom, what are the coordinates of your location? Assume origin (0,0) to be at the intersection of the ladder and the ground.

**Options :**

6406531284702. ✘ (1/2, 1/2)

6406531284703. ✘ (1/3, 1/3)

6406531284704. ✓ (2/3, 2/3)

6406531284705. ✘ (1/3, 2/3)

**Question Number : 75 Question Id : 640653386248 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

**Question Label : Multiple Select Question**

Sushmita was calculating SSE (sum squared error) and she found that SSE is a function of  $a$  as follows:  $SSE = f(a) = a^2 - 6a + 18$ . What will be the best fit value.

**Options :**

6406531284710. ✓ 9

6406531284711. ✘ 2

6406531284712. ✘ 0

6406531284713. ✘ -2

## Sem1 Statistics1

<b>Section Id :</b>	64065323877
<b>Section Number :</b>	4
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	14
<b>Number of Questions to be attempted :</b>	14
<b>Section Marks :</b>	40
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	No
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	64065355189
<b>Question Shuffling Allowed :</b>	No

**Question Number : 76 Question Id : 640653386250 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL:SEMESTER 1/DIRECT ENTRY DIPLOMA : STATISTICS FOR DATA SCIENCE 1"

**ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?  
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.**

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

**Options :**

6406531284718. ✓ Yes

6406531284719. ✗ No

**Sub-Section Number :**

2

**Sub-Section Id :**

64065355190

**Question Shuffling Allowed :**

Yes

**Question Number : 77 Question Id : 640653386251 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Select Question

Which of the following statements is/are correct?

**Options :**

6406531284720. ✗ Grouping students by favourite subjects in a class is a numerical variable

6406531284721. ✗ Amount of calories consumed by a person in a day is a categorical variable.

6406531284722. ✓ The amount of time to complete a quiz is a numerical and continuous variable.

6406531284723. ✓ The number of attempts to clear an exam is a numerical and discrete variable.

**Question Number : 78 Question Id : 640653386252 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Select Question

Choose the correct statement/s ?

**Options :**

6406531284724. ✓ A nominal scale has the property of labelling the categories and it does not involve the ranking of data.

6406531284725. ✓ An ordinal scale has all the properties of nominal scale and it involves the ranking of data.

6406531284726. ✗ An Interval scale has all the properties of ordinal scale and it satisfies the

absolute zero property.

6406531284727. ✘ A ratio scale has all the properties of interval scale and it does not satisfy the absolute zero property.

**Question Number : 79 Question Id : 640653386253 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Select Question

If we have a dataset 45, 42, 28, 95, 23 and 194, then choose the correct option/s?

**Options :**

6406531284728. ✘ Range of the dataset is 149.

6406531284729. ✓ Median of the dataset is 43.5

6406531284730. ✓  $25^{th}$  percentile of the dataset is 28.

6406531284731. ✘ IQR (Inter-quartile range ) of the dataset is 72.

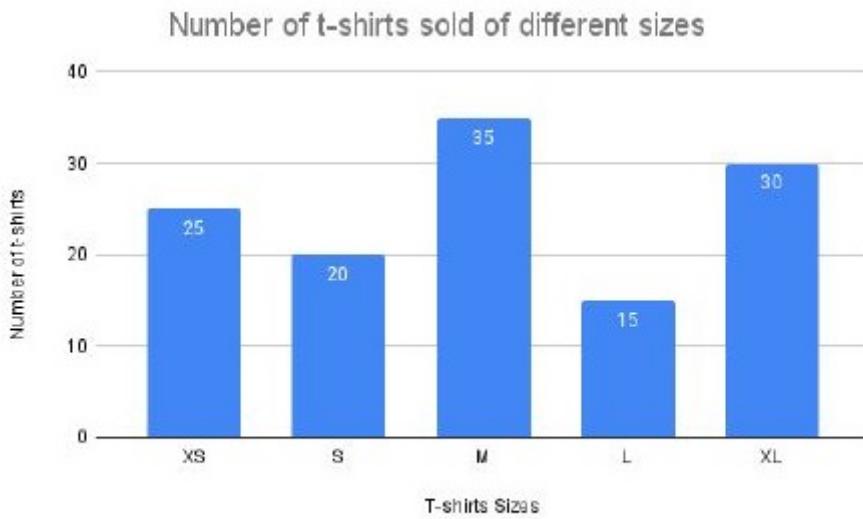
**Question Number : 80 Question Id : 640653386254 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Select Question

Figure Q.1. represents the data of number of t-shirts sold of different sizes in a shop of clothes.



**Figure Q.1: Sales distribution of t-shirts of different sizes**

Choose the correct statement/s:

**Options :**

6406531284732. ✓ Mode of the dataset is size 'M'.

6406531284733. ✗ Mean of the dataset is 25.

6406531284734. ✗ Population variance of the dataset is 50.

6406531284735. ✗ Median of the dataset is 20.

**Question Number : 81 Question Id : 640653386255 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Select Question

The five number summary of a dataset is 5, 10, 15, 20 and 25. Later it is noted that one observation 6 is wrongly noted as 5, then choose the correct option(s):

**Options :**

6406531284736. ✓ The five number summary may remain the same.

6406531284737. ✗ The five number summary will definitely change.

6406531284738. ✗ The minimum value of the dataset will definitely change.

6406531284739. ✗ The five number summary will always change whenever an observation is wrongly noted.

**Question Number : 82 Question Id : 640653386256 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

Question Label : Multiple Select Question

Choose the correct option/s:

**Options :**

6406531284740. ❌ If the large values of variable  $X$  tend to be associated with small values of variable  $Y$ , then the correlation between  $X$  and  $Y$  will be positive.

6406531284741. ❌ If the correlation coefficient between two variables is zero, then the variables are independent.

6406531284742. ✓ Correlation coefficient is a unitless measure of association.

6406531284743. ❌ Correlation coefficient always lies between 0 and 1.

**Question Number : 83 Question Id : 640653386257 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

Question Label : Multiple Select Question

An analyst did a survey to know the willingness of graduate and post graduate students of India to go abroad for higher studies. He collected the data from a college for the survey and the results are given in Table 1.1.Q.

Education	Willingness to go	
	Yes	No
Graduate	14	6
Post-graduate	18	12

Table 1.1.Q

Choose the correct option/s?

**Options :**

6406531284744. ❌ Of all the graduate students, there are 28.57% who does not want to go for higher studies.

6406531284745. ✓ Of all the post-graduate students, there are 60% who wants to go for higher studies.

6406531284746. ✓ If all row relative frequencies are similar within each column then, it implies that all column relative frequencies will also be similar within each row.

6406531284747. ❌ If all column relative frequencies are similar within each row then, it does not imply that all row relative frequencies will also be similar within each column.

6406531284748. ❌ There is no association between Education and Willingness to go for higher studies.

6406531284749. ✓ There is an association between Education and Willingness to go for higher studies.

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355191

**Question Shuffling Allowed :** Yes

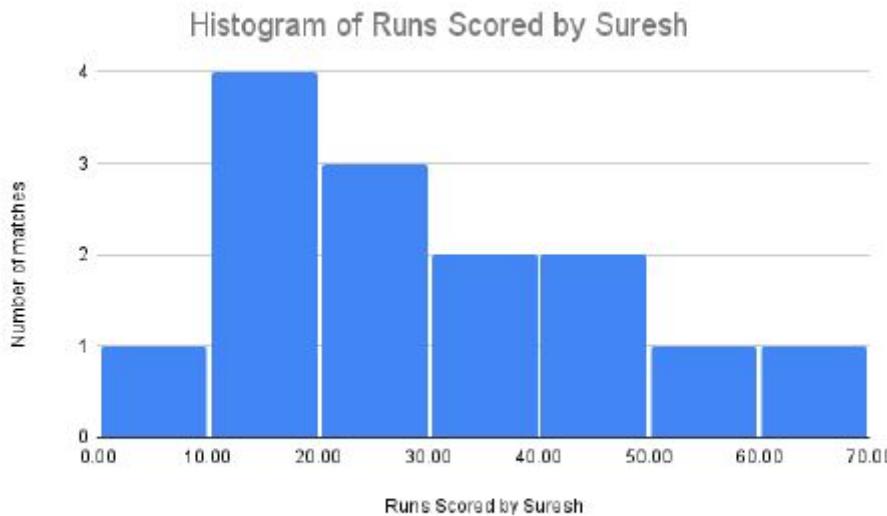
**Question Number : 84 Question Id : 640653386258 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

Figure Q.2 represents the distribution of runs scored by Suresh in matches of a cricket tournament.



**Figure Q.2:** Runs scored by Suresh in a cricket tournament

What is the average runs scored by Suresh?

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Range

**Text Areas :** PlainText

**Possible Answers :**

29.5 to 30.5

**Question Number :** 85 **Question Id :** 640653386260 **Question Type :** SA **Calculator :** None

**Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Correct Marks :** 2

**Question Label :** Short Answer Question

The dataset consists of three distinct observations, say  $a$ ,  $b$  and  $c$ , and the sum of their frequencies is 100 and relative frequencies corresponding to  $a$  and  $c$  are 35% and 45% respectively. Find the cumulative frequency of  $b$  and  $c$ .

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

65

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355192

**Question Shuffling Allowed :** Yes

**Question Number :** 86 **Question Id :** 640653386259 **Question Type :** SA **Calculator :** None

**Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Correct Marks :** 3

**Question Label :** Short Answer Question

If the sample variance of a dataset of 6 observations is 60, then what is the population variance if each observation in the dataset is increased by 5?

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

50

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355193

**Question Shuffling Allowed :** Yes

**Question Number :** 87 **Question Id :** 640653386261 **Question Type :** SA **Calculator :** None

**Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Correct Marks :** 4

**Question Label :** Short Answer Question

The data of the weight (in kg) and age (in years) is recorded of 5 different persons in a hospital and tabulated in Table 1.2.Q.

Weight (in kg)	80	75	85	70	65
Age (in years)	85	70	80	95	70

Table 1.2.Q

What is the correlation coefficient between the weight and age of persons ?(Enter the answer correct to 3 decimal accuracy)

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Range

**Text Areas :** PlainText

**Possible Answers :**

0.144 to 0.154

**Sub-Section Number :** 6

**Sub-Section Id :** 64065355194

**Question Shuffling Allowed :** No

**Question Id :** 640653386262 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Question Numbers :** (88 to 89)

**Question Label :** Comprehension

An inspection officer wants to test the tensile strength of threaded rods produced by a factory.  
Based on the information, answer the given subquestions .

**Sub questions**

**Question Number :** 88 **Question Id :** 640653386263 **Question Type :** MCQ **Is Question**

**Mandatory :** No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Correct Marks :** 2

**Question Label : Multiple Choice Question**

If he selects 40 threaded rods at random from those that produced in the month of August 2022 at the factory. Identify the sample and population.

**Options :**

6406531284754. ❌ The population is all threaded rods ever produced at the factory and the sample is all the threaded rods produced in the month of August 2022.

6406531284755. ✓ The population is all threaded rods ever produced at the factory and the sample is the 40 selected threaded rods.

6406531284756. ❌ The population is all threaded rods produced in the year 2022 and the sample is the threaded rods produced in the month of August 2022.

6406531284757. ❌ None of these.

**Question Number : 89 Question Id : 640653386264 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

If the inspection officer is interested to test the tensile strength of threaded rods produced by the factory in different months of year 2022 and collected the data for the same, then choose the correct option:

**Options :**

6406531284758. ✓ It is time-series data.

6406531284759. ❌ It is cross-sectional data.

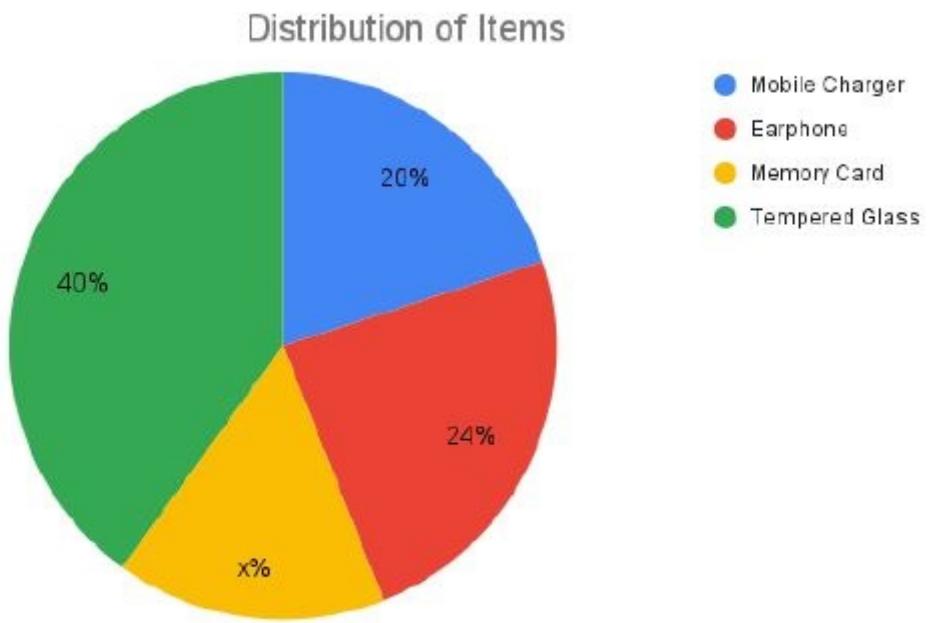
**Question Id : 640653386265 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (90 to 91)**

Question Label : Comprehension

Figure Q.3 represents the distribution of sales of 4 different items in a mobile shop last month. Based on this information, answer the given subquestions .



**Figure Q.3:** Sales distribution of 4 different items

### Sub questions

**Question Number : 90 Question Id : 640653386266 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

What is the value of  $x$ ?

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

16

**Question Number : 91 Question Id : 640653386267 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

**Question Label :** Short Answer Question

If the total number of items sold in last month is 500, then find the number of earphones sold in the last month?

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

120

## Sem2 Intro to Python

**Section Id :** 64065323878

**Section Number :** 5

**Section type :** Online

**Mandatory or Optional :** Mandatory

**Number of Questions :** 14

**Number of Questions to be attempted :** 14

**Section Marks :** 50

**Display Number Panel :** Yes

**Group All Questions :** No

**Enable Mark as Answered Mark for Review and**

**Clear Response :** Yes

**Maximum Instruction Time :** 0

**Sub-Section Number :** 1

**Sub-Section Id :** 64065355195

**Question Shuffling Allowed :** No

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL:SEMESTER 2/DIRECT ENTRY DIPLOMA : INTRODUCTION TO PYTHON"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

**Options :**

6406531284762. ✓ YES

6406531284763. ✗ NO

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355196

**Question Shuffling Allowed :** Yes

**Question Number : 93 Question Id : 640653386269 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

E1 and E2 are Boolean expressions. Consider the following expression:

```
1 | not(E1 and E2) != (not E1 or not E2)
```

What can you say about the value of the expression given above?

**Options :**

6406531284764. ✗ It is **True** if and only if E1 and E2 have different values

6406531284765. ✗ It is **False** if and only if E1 and E2 have the same value

6406531284766. ✗ It is always **True**

6406531284767. ✓ It is always **False**

**Question Number : 94 Question Id : 640653386270 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

**Question Label : Multiple Choice Question**

Consider the following code snippet:

```
1 | a, b, c, d = input()  
2 | d = 3  
3 | print((a + b + c) * d)
```

What will be the output of the code given above for the following input ?

**Input**

```
1 | 1234
```

**Options :**

6406531284768. ✓

```
1 | 123123123
```

6406531284769. ✗

```
1 | 18
```

6406531284770. ✗

```
1 | 24
```

6406531284771. ✗

```
1 | 492
```

6406531284772. ✗

```
1 | 123412341234
```

**Question Number : 95 Question Id : 640653386272 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

**Question Label : Multiple Choice Question**

If  $n$  is a positive integer, then what will be the value of **count** at the end of execution of the code given below?

```
1 n = int(input())
2 count = 0
3 for x in range(1, n + 1):
4     for y in range(x + 1, n + 1):
5         count = count + 1
```

**Options :**

6406531284777. ✘  $n^2$

6406531284778. ✘  $n(n+1)$

6406531284779. ✘  $n(n+1)/2$

6406531284780. ✓  $n(n-1)/2$

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355197

**Question Shuffling Allowed :** Yes

**Question Number : 96 Question Id : 640653386273 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

**Question Label : Multiple Choice Question**

What will be the output of the code snippet given below?

```
1 | L = [-1, 1]
2 | for i in range(8):
3 |     size = len(L)
4 |     value = L[size - 2] + L[size - 1]
5 |     L.append(value)
6 | print(L)
```

**Options :**

6406531284781. ✓

```
1 | [-1, 1, 0, 1, 1, 2, 3, 5, 8, 13]
```

6406531284782. ✘

```
1 | [0, 1, 1, 2, 3, 5, 8, 13, 21, 34]
```

6406531284783. ✘

```
1 | [1, 1, 2, 3, 5, 8, 13, 21, 34, 55]
```

6406531284784. ✘

```
1 | [-1, -1, -2, -3, -5, -8, -13, -21, -34, -55]
```

**Question Number : 97 Question Id : 640653386275 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

**Question Label : Multiple Choice Question**

If  $n$  is a positive integer, what is the output of the following code? Assume that natural numbers start from 1, that is, 0 is not a natural number.

```
1 | a = 0
2 | for i in range(1, n + 1):
3 |     b = 1
4 |     for j in range(1, i + 1):
5 |         b = b * j
6 |     a = a + b
7 | print(a)
```

**Options :**6406531284789. ✘ Sum of the first **n** natural numbers6406531284790. ✘ Product of the first **n** natural numbers6406531284791. ✓ Sum of the factorial of the first **n** natural numbers6406531284792. ✘ Factorial of the sum of the first **n** natural numbers**Question Number : 98 Question Id : 640653386276 Question Type : MCQ Is Question****Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction****Time : 0****Correct Marks : 4**

Question Label : Multiple Choice Question

L is a non-empty list of positive integers that is already defined. Consider the following snippet of code:

```
1 flag1, flag2 = True, True
2 for i in range(1, len(L)):
3     if L[i] > L[i - 1]:
4         flag2 = False
5     elif L[i] < L[i - 1]:
6         flag1 = False
7     if flag1:
8         print('one')
9     elif flag2:
10        print('two')
11    else:
12        print('three')
```

What is the output of the code if L = [394, 289, 120, 79, 50, 27, 15] ?

**Options :** 1 | one

6406531284793. ✘

 1 | two

6406531284794. ✓

 1 | three

6406531284795. ✘

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355198

**Question Shuffling Allowed :** Yes

**Question Number : 99 Question Id : 640653386271 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

**Question Label : Multiple Select Question**

T is a positive integer that represents the temperature in degree Celsius. Consider the following snippet of code:

```

1 if 0 < T <= 15:
2     print('freezing')
3 elif 15 < T <= 25:
4     print('cold')
5 elif 25 < T <= 30:
6     print('warm')
7 else:
8     print('hot')
```

Two snippets of code are equivalent if they produce the same output for any given input. Select all snippets of code that are equivalent to the code given above.

**Options :**

```

1 if 0 < T <= 15:
2     print('freezing')
3 if 15 < T <= 25:
4     print('cold')
5 if 25 < T <= 30:
6     print('warm')
7 if T > 30:
8     print('hot')
```

6406531284773. ✓

6406531284774. \*

```
1 if 0 < T <= 15:  
2     print('freezing')  
3 if 15 < T <= 25:  
4     print('cold')  
5 if 25 < T <= 30:  
6     print('warm')  
7 else:  
8     print('hot')
```

```
1 if 0 < T <= 15:  
2     print('freezing')  
3 elif 15 < T <= 25:  
4     print('cold')  
5 elif 25 < T <= 30:  
6     print('warm')  
7 elif T > 30:  
8     print('hot')
```

6406531284775. ✓

```
1 if 0 < T <= 15:  
2     print('freezing')  
3 if 15 < T <= 25:  
4     print('cold')  
5 if 25 < T <= 30:  
6     print('warm')  
7 else T > 30:  
8     print('hot')
```

6406531284776. ✘

**Sub-Section Number :**

5

**Sub-Section Id :**

64065355199

**Question Shuffling Allowed :**

Yes

**Question Number : 100 Question Id : 640653386274 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Select Question

Which of the following options print "Welcome to Python Quiz!" on  $n$  separate lines? Here,  $n$  is a positive integer that has already been defined. Your answer should be applicable for any positive integer.

Sample output for  $n = 5$

```
1 Welcome to Python Quiz!
2 Welcome to Python Quiz!
3 Welcome to Python Quiz!
4 Welcome to Python Quiz!
5 Welcome to Python Quiz!
```

Options :

```
1 print('welcome to Python Quiz!')
2 print('welcome to Python Quiz!')
3 print('welcome to Python Quiz!')
4 print('welcome to Python Quiz!')
5 print('welcome to Python Quiz!')
```

6406531284785. ❌

```
1 for i in range(n, 2 * n):
2     print('Welcome to Python Quiz!')
```

6406531284786. ✓

```
1 for i in range(1, n):
2     print('Welcome to Python Quiz!')
```

6406531284787. ❌

```
1 for i in range(n):
2     print('Welcome to Python Quiz!')
```

6406531284788. ✓

**Question Number : 101 Question Id : 640653386278 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

Question Label : Multiple Select Question

Reverse a sentence based on words. The  $i^{\text{th}}$  word from the left in the input sentence is the  $i^{\text{th}}$  word from the end in the output sentence.

Consider following example:

```
1 sentence = "i know how to code in python"
2 modified_sentence = "python in code to how know i"
```

Choose all the options that accepts a sentence as input and prints the modified sentence.

**Options :**

```
1 sentence = input()
2 words = sentence.split(' ')
3 n = len(words)
4 for i in range(n - 1, 0, -1):
5     print(words[i] + ' ', end = '')
6 print(words[0])
```

6406531284798. ✓

```
1 sentence = input()
2 words = sentence.split(' ')
3 n = len(words)
4 for i in range(n - 1, -2, -1):
5     print(words[i] + ' ', end = '')
```

6406531284799. ✗

```
1 sentence = input()
2 words = sentence.split(' ')
3 n = len(words)
4 for i in range(n - 1, -1, -1):
5     print(words[i] + ' ', end = '')
6 print(words[0])
```

6406531284800. ✗

```
1 words = sentence.split(' ')
2 n = len(words)
3 for i in range(n - 1):
4     print(words[n - i - 1], end = ' ')
5 print(words[0])
```

6406531284801. ✓

**Question Number : 102 Question Id : 640653386279 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

**Question Label : Multiple Select Question**

Select all matrices M for which the following code prints **True** to the console.

```
1 n = len(M)
2 flag = True
3 for i in range(n):
4     for j in range(n):
5         if (i != j) and (M[i][j] != M[j][i]):
6             flag = False
7 print(flag)
```

**Options :**

1 | [[1, 2, 3], [2, 5, 4], [3, 4, 6]]

6406531284802. ✓

1 | [[1, 5, 3, 4], [5, 1, 4, 6], [3, 4, 2, 8], [4, 6, 8, 3]]

6406531284803. ✓

1 | [[1, 2, 3], [0, 5, 4], [3, 4, 6]]

6406531284804. ✘

1 | [[1, 5, 3, 6], [5, 1, 4, 6], [3, 4, 2, 8], [4, 6, 8, 3]]

6406531284805. ✘

**Sub-Section Number :**

6

**Sub-Section Id :**

64065355200

**Question Shuffling Allowed :**

Yes

**Question Number : 103 Question Id : 640653386280 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 5**

Question Label : Multiple Select Question

For what values of **a**, **b** and **c** does the code given below print a sequence which has **0** as one of the elements?

```
1 | for i in range(a, b, c):  
2 |     print(i)
```

**Options :**

6406531284806. ✓

```
1 | a = 10, b = -1, c = -1
```

6406531284807. ✓

```
1 | a = -10, b = 1, c = 1
```

6406531284808. ✗

```
1 | a = 10, b = -2, c = 0
```

6406531284809. ✗

```
1 | a = 10, b = -2, c = 1
```

**Question Number : 104 Question Id : 640653386281 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 5**

Question Label : Multiple Select Question

Select all snippets of code that print the following sequence of  $n$  lines, where  $n$  is a positive integer that is already defined. The  $i^{\text{th}}$  line in the output corresponds to the first  $i$  Fibonacci numbers, for  $1 \leq i \leq n$ . Assume that 0 and 1 are the first two Fibonacci numbers. There should be a single space after every number. Specifically, there should be a single space after the last number in any given line.

**Sample output for  $n = 7$**

```
1 | 0
2 | 0 1
3 | 0 1 1
4 | 0 1 1 2
5 | 0 1 1 2 3
6 | 0 1 1 2 3 5
7 | 0 1 1 2 3 5 8
```

**Options :**

```
1 | L = [0, 1]
2 | for i in range(n - 2):
3 |     L.append(L[-1] + L[-2])
4 | for i in range(1, n + 1):
5 |     for j in range(i):
6 |         print(L[j], end = ' ')
7 |     print()
```

6406531284810. ✓

```
1 | i = 0
2 | L = []
3 | while i < n:
4 |     if i == 0:
5 |         L.append(0)
6 |     elif i == 1:
7 |         L.append(1)
8 |     else:
9 |         L.append(L[-1] + L[-2])
10 |    i += 1
11 |    for j in range(i):
12 |        print(L[j], end = ' ')
13 |    print()
```

6406531284811. ✓

6406531284812. ✘

```
1 i = 0
2 L = []
3 while i <= n:
4     if i == 0:
5         L.append(0)
6     elif i == 1:
7         L.append(1)
8     else:
9         L.append(L[-1] + L[-2])
10    i += 1
11    for j in range(i):
12        print(L[j], end = ' ')
13    print()
```

```
1 L = [0, 1]
2 for i in range(n):
3     L.append(L[-1] + L[-2])
4 for i in range(1, n + 1):
5     for j in range(i):
6         print(L[j], end = ' ')
7     print()
```

6406531284813. ✓

**Sub-Section Number :**

7

**Sub-Section Id :**

64065355201

**Question Shuffling Allowed :**

Yes

**Question Number : 105 Question Id : 640653386277 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 4**

**Question Label : Short Answer Question**

$R$  is a zero-matrix (all entries are zeros) of size  $3 \times 3$  and

$$P = \begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix}, Q = \begin{bmatrix} 1 & -1 & 1 \\ 1 & -1 & 1 \\ 1 & -1 & 1 \end{bmatrix}$$

What is the output of the following snippet of code?

```
1 val = 0
2 for i in range(3):
3     for j in range(3):
4         R[i][j] = P[i][j] * Q[i][j]
5         val = val + R[i][j]
6 print(val)
```

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

15

## Sem2 English2

**Section Id :** 64065323879

**Section Number :** 6

**Section type :** Online

**Mandatory or Optional :** Mandatory

**Number of Questions :** 33

**Number of Questions to be attempted :** 33

**Section Marks :** 50

**Display Number Panel :** Yes

**Group All Questions :** No

**Enable Mark as Answered Mark for Review and**

Yes

**Clear Response :**

**Maximum Instruction Time :**

0

**Sub-Section Number :**

1

**Sub-Section Id :**

64065355202

**Question Shuffling Allowed :**

No

**Question Number : 106 Question Id : 640653386282 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

**THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL: SEMESTER 2: ENGLISH 2"**

**ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?**

**CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.**

**(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)**

**Options :**

6406531284814. ✓ YES

6406531284815. ✘ NO

**Sub-Section Number :**

2

**Sub-Section Id :**

64065355203

**Question Shuffling Allowed :**

Yes

**Question Number : 107 Question Id : 640653386295 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

For the following sentence, choose whether the type of sentence is simple, compound or complex.

*The child is hungry, therefore it is crying.*

**Options :**

6406531284854. ✘ Simple

6406531284855. ✓ Compound

6406531284856. ✘ Complex

**Question Number : 108 Question Id : 640653386296 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

For the following sentence, choose whether the type of sentence is simple, compound or complex.

*The earth moves round the sun.*

**Options :**

6406531284857. ✓ Simple

6406531284858. ✘ Compound

6406531284859. ✘ Complex

**Question Number : 109 Question Id : 640653386297 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

How many independent clauses are there in the sentence given below:

*She slammed the door angrily*

**Options :**

6406531284860. ✓ 1

6406531284861. ✘ 2

6406531284862. ✘ No independent clause

**Question Number : 110 Question Id : 640653386298 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

In the following sentence, identify the complement(s) of the verbs that are underlined.

*My grandfather left my sister all his money.*

**Options :**

6406531284863. ✘ Grandfather, money

6406531284864. ✘ All his money, my grandfather

6406531284865. ✓ My sister, all his money

6406531284866. ✘ My grandfather, my sister

**Question Number : 111 Question Id : 640653386299 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

'Hina walked the dog *in the park*.' Here, the adjunct is \_\_\_\_\_

**Options :**

6406531284867. ✘ Hina walked

6406531284868. ✘ Hina walked the dog

6406531284869. ✓ In the park

6406531284870. ✘ The dog in the park

**Question Number : 112 Question Id : 640653386300 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

*Rahul brought a new cycle which was imported from America.* Here the subordinate clause functions as \_\_\_\_.

**Options :**

6406531284871. ✓ Adjective

6406531284872. ✗ Adverb

6406531284873. ✗ Noun

6406531284874. ✗ No subordinate clause

**Question Number : 113 Question Id : 640653386301 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

*I attempted a mock test which was very tough.* Here the relative pronoun is \_\_\_\_.

**Options :**

6406531284875. ✗ I

6406531284876. ✓ Which

6406531284877. ✗ Very

6406531284878. ✗ Was

**Question Number : 114 Question Id : 640653386302 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

*The class was handled by Augustya, who did his PhD from IIT Madras.* Here the subordinate clause functions as \_\_\_\_.

**Options :**

6406531284879. ✗ Adverb

6406531284880. ✓ Adjective

6406531284881. ✗ Noun

6406531284882. ✗ Preposition

**Question Number : 115 Question Id : 640653386303 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the independent clause in the following sentence.

*This road leads to the next town, which is famous for its furniture.*

**Options :**

6406531284883. ✓ This road leads to the next town

6406531284884. ✗ Which is famous for its furniture

6406531284885. ✗ Famous for its furniture

6406531284886. ✗ To the next town

**Question Number : 116 Question Id : 640653386304 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Hari and Rohan \_\_\_ leading the team.

**Options :**

6406531284887. ✗ Is

6406531284888. ✗ Was

6406531284889. ✓ Were

6406531284890. ✗ Both Is and Was

**Question Number : 117 Question Id : 640653386305 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

When there are two objects for a verb, the first is called the \_\_\_\_\_ object and the second is called the \_\_\_\_\_ object.

**Options :**

6406531284891. ✓ Direct, indirect

6406531284892. ✗ Marked, unmarked

**Question Number : 118 Question Id : 640653386306 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the adverb in the following sentence.

*My sister is listening patiently.*

**Options :**

6406531284893. ✗ Listening

6406531284894. ✗ My

6406531284895. ✓ Patiently

6406531284896. ✗ Is listening patiently

**Question Number : 119 Question Id : 640653386307 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

'-s' and '-ies' in 'bags' and 'trophies' are \_\_\_\_\_.

**Options :**

6406531284897. ✘ Plural markers

6406531284898. ✘ Morphemes

6406531284899. ✓ Both Plural markers and Morphemes

**Question Number : 120 Question Id : 640653386308 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Adding '-en' to 'dark' changes it from \_\_\_\_\_.

**Options :**

6406531284900. ✘ Verb to adjective

6406531284901. ✓ Adjective to verb

6406531284902. ✘ Noun to Verb

6406531284903. ✘ Verb to noun

**Question Number : 121 Question Id : 640653386309 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the number of suffixes in the following sentence.

*It was a warm summer month: the flowers were blooming, the birds were singing, and the days seemed endless.*

**Options :**

6406531284904. ✘ 1

6406531284905. ✘ 3

6406531284906. ✘ 5

6406531284907. ✓ 7

**Question Number : 122 Question Id : 640653386310 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the verb tense and aspect in the following sentence.

*Laya is sleeping in peace.*

**Options :**

6406531284908. ✘ Simple present

6406531284909. ✓ Present continuous

6406531284910. ✘ Past continuous

6406531284911. ✘ Present perfect

**Question Number : 123 Question Id : 640653386311 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the (verb) mood in the following sentence.

*Had I been unhappy, I would not have agreed to this.*

**Options :**

6406531284912. ✓ Subjunctive

6406531284913. ✘ Indicative

6406531284914. ✘ Interrogative

6406531284915. ✘ Imperative

**Question Number : 124 Question Id : 640653386312 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blank with verb that are in the past perfect tense

He \_\_\_\_ the bet.

**Options :**

6406531284916. ❌ Have lost

6406531284917. ❌ Lost

6406531284918. ❌ Would have lost

6406531284919. ✓ Had lost

**Question Number : 125 Question Id : 640653386313 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blank with verbs that are in the future perfect tense.

He \_\_\_\_ the bet.

**Options :**

6406531284920. ❌ Have lost

6406531284921. ❌ Lost

6406531284922. ✓ Will have lost

6406531284923. ❌ Had lost

**Question Number : 126 Question Id : 640653386314 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blank with verbs that are in the present perfect continuous tense.

She \_\_\_\_ this land.

**Options :**

6406531284924. ✘ Has  
6406531284925. ✘ Is ruling  
6406531284926. ✓ Has been ruling  
6406531284927. ✘ Will rule

**Question Number : 127 Question Id : 640653386315 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

*Sekhar slept early yesterday.* Here the adverb is with \_\_\_\_.

**Options :**

6406531284928. ✘ Subject  
6406531284929. ✓ Predicate  
6406531284930. ✘ No adverb  
6406531284931. ✘ Both Subject and Predicate

**Question Number : 128 Question Id : 640653386316 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Identify the adverb in the sentence given below.

*Nirmal buys new laptops every year.*

**Options :**

6406531284932. ✘ Laptops  
6406531284933. ✘ Buys  
6406531284934. ✘ New  
6406531284935. ✓ Every year

**Question Number : 129 Question Id : 640653386317 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Choose an option that fits well for the following situation.

Inviting a classmate you met during shopping for dinner

**Options :**

6406531284936. ✘ Can you come with me for dinner

6406531284937. ✘ Will you join me for dinner

6406531284938. ✓ Would you like to join me for dinner

6406531284939. ✘ Could you please come with me for dinner

**Question Number : 130 Question Id : 640653386318 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

'Let us do the meeting in the conference room on the fourth floor.' A softened version of this sentence is \_\_\_\_\_.

**Options :**

6406531284940. ✘ Can we do the meeting in the fourth floor conference room?

6406531284941. ✘ Could we conduct the meeting in the conference room on the fourth floor , please?

6406531284942. ✘ I was wondering if we could do the meeting in the fourth floor conference room.

6406531284943. ✓ All of these

**Question Number : 131 Question Id : 640653386319 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

An imperative is understood as a command or a request based on \_\_\_\_\_.

**Options :**

6406531284944. ❌ The use of 'please'

6406531284945. ✓ Context

6406531284946. ❌ Tense

6406531284947. ❌ Aspect

**Question Number : 132 Question Id : 640653386320 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blank with an appropriate connecting word:

He has not spoken to us \_\_ we had the argument.

**Options :**

6406531284948. ✓ Since

6406531284949. ❌ While

6406531284950. ❌ So

6406531284951. ❌ As

**Question Number : 133 Question Id : 640653386321 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blank with an appropriate connecting word:

He is \_\_\_\_\_ forgetful \_\_\_\_\_ he just doesn't bother to complete the work.

**Options :**

6406531284952. ❌ Neither ... nor

6406531284953. ❌ Both ... and

6406531284954. ✓ Either ... or

6406531284955. ❌ Not only ... but also

**Question Number : 134 Question Id : 640653386322 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blank with an appropriate connecting word:

They didn't read "Gulliver's Travels" \_\_\_\_\_ did they read "Treasure Island".

**Options :**

6406531284956. ❌ And

6406531284957. ❌ Or

6406531284958. ❌ Either

6406531284959. ✓ Nor

**Question Number : 135 Question Id : 640653386323 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blank with an appropriate connecting word:

\_\_\_\_\_, you've got a chance, you might as well make full use of it.

**Options :**

6406531284960. ❌ As soon as

6406531284961. ✓ Now that

6406531284962. ✗ Although

6406531284963. ✗ After

**Question Number : 136 Question Id : 640653386324 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Fill in the blank with an appropriate connecting word:

Lina has been married for a long time. She got married \_\_\_\_\_ she was 23 years old.

**Options :**

6406531284964. ✓ When

6406531284965. ✗ Until

6406531284966. ✗ So

6406531284967. ✗ As

**Sub-Section Number : 3**

**Sub-Section Id : 64065355204**

**Question Shuffling Allowed : No**

**Question Id : 640653386283 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (137 to 141)**

Question Label : Comprehension

Listen to the audio and answer the given subquestions



885\_640653\_0\_1984128\_hs1002fdqz1e1s1q1mq.mp3

**Sub questions**

**Question Number : 137 Question Id : 640653386284 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

The word *afford* is stressed on the \_\_\_\_\_ syllable

**Options :**

6406531284816. ✘ First syllable

6406531284817. ✓ Second syllable

6406531284818. ✘ Third syllable

6406531284819. ✘ No syllables receive stress

**Question Number : 138 Question Id : 640653386285 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Identify the number of syllables in the word *motivational*.

**Options :**

6406531284820. ✘ 2

6406531284821. ✘ 3

6406531284822. ✓ 5

6406531284823. ✘ 6

**Question Number : 139 Question Id : 640653386286 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

The vowel in the word *share* is \_\_\_\_\_.

**Options :**

6406531284824. ✘ Short

6406531284825. ✓ Long

**Question Number : 140 Question Id : 640653386287 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

The word *disclaimer* is stressed on the \_\_\_\_\_ syllable.

**Options :**

6406531284826. ✘ First syllable

6406531284827. ✓ Second syllable

6406531284828. ✘ Third syllable

6406531284829. ✘ Fourth syllable

**Question Number : 141 Question Id : 640653386288 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Choose the appropriate pauses for the following passage as you hear in the audio:

Yes I do speak but I feel more like a storyteller because wherever I go I share a story with everyone

**Options :**

6406531284830. ✓ //Yes/ I do speak/ but I feel more like a storyteller because wherever I go I share a story with everyone//

6406531284831. ✘ //Yes I do speak but I feel more like a storyteller/ because wherever I go I share a story with/ everyone//

6406531284832. ✘ //Yes I do speak but I feel/ more like a storyteller because/ wherever I go I

share a story/ with everyone//

6406531284833. ✶ //Yes I/ do speak but I feel more like/ a storyteller because wherever I/ go I share a/ story with everyone//

**Question Id : 640653386289 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (142 to 146)**

Question Label : Comprehension

Complete the following mail usig appropriate options given in the subquestions.

To: xyz@gmail.com

Subject: (1)\_\_\_\_\_

(2)\_\_\_\_\_,

(3)\_\_\_\_ John, who is starting today as our Customer Service Representative. He will be providing technical support and assistance to our users and making sure they enjoy the best experience with our products.

(4)\_\_\_\_ John in person and congratulate him on the new role!

(5)\_\_\_\_,

Michael

### **Sub questions**

**Question Number : 142 Question Id : 640653386290 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Complete blank (1) with an appropriate option.

**Options :**

6406531284834. ✶ Meet our new joinee

6406531284835. ✶ Meet John

6406531284836. ✓ Meet our new joinee John

6406531284837. ✳ MEET OUR NEW JOINEE JOHN

**Question Number : 143 Question Id : 640653386291 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Complete blank (2) with an appropriate option.

**Options :**

6406531284838. ✳ Dear friends

6406531284839. ✳ Hi friends

6406531284840. ✓ Dear colleagues

6406531284841. ✳ Hola colleagues

**Question Number : 144 Question Id : 640653386292 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Complete blank (3) with an appropriate option

**Options :**

6406531284842. ✳ Meet

6406531284843. ✳ Please meet

6406531284844. ✓ I am pleased to introduce you to

6406531284845. ✳ Here is

**Question Number : 145 Question Id : 640653386293 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Complete blank (4) with an appropriate option.

**Options :**

6406531284846. ✘ Feel free to greet

6406531284847. ✘ Feel free to meet

6406531284848. ✘ Meet

6406531284849. ✓ Both Feel free to greet and Feel free to meet

**Question Number : 146 Question Id : 640653386294 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Complete blank (5) with an appropriate option.

**Options :**

6406531284850. ✓ Warm regards

6406531284851. ✘ Thanks

6406531284852. ✘ Yours

6406531284853. ✘ Lovingly yours

## Sem2 Maths2

**Section Id :** 64065323880

**Section Number :** 7

**Section type :** Online

**Mandatory or Optional :** Mandatory

**Number of Questions :** 8

<b>Number of Questions to be attempted :</b>	8
<b>Section Marks :</b>	25
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	No
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	64065355205
<b>Question Shuffling Allowed :</b>	No

**Question Number : 147 Question Id : 640653386325 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL:SEMESTER 2/DIRECT ENTRY DIPLOMA : MATHEMATICS FOR DATA SCIENCE 2"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

**Options :**

6406531284968. ✓ YES

6406531284969. ✗ NO

<b>Sub-Section Number :</b>	2
<b>Sub-Section Id :</b>	64065355206
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 148 Question Id : 640653386329 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Select Question

Choose the set of correct options.

**Options :**

If there is a square matrix  $A$  such that  $A^2 + A = 0$ , then  $\det(A)$  must be either 0 or -1.  
6406531284972. ❌

If  $u$  is a solution of the system of linear equations  $Ax = c$  and  $c$  is a solution of the system of linear equations  $Ax = b$ , then  $u$  is a solution of the system of linear equations  $A^2x = b$ .  
6406531284973. ✓

If  $B$  is a diagonal matrix of order 3, then  $AB - BA = 0$  for all square matrices  $A$  of order 3.  
6406531284974. ❌

If there is an invertible real  $3 \times 3$  matrix  $A$  such that  $A \text{adj}(A) = 3I$ , then  $\det(\text{adj}(A))$  must be 9.  
6406531284975. ✓

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355207

**Question Shuffling Allowed :** Yes

**Question Number : 149 Question Id : 640653386330 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

If addition and scalar multiplication on  $V = \mathbb{R}^2$  is defined as follows:

*Addition:*  $(x_1, y_1) + (x_2, y_2) = (0, 0);$

$(x_1, y_1), (x_2, y_2) \in V$

*Scalar multiplication:*  $c(x, y) = (0, 0); (x, y) \in V, c \in \mathbb{R}$

Consider the following statements.

1. There exists an element  $0$  (called the zero vector of  $V$ ) in  $V$  such that  $0 + v = v, \forall v \in V$ .
2. For each vector of  $v \in V$  and for each pair  $a, b \in \mathbb{R}, (a + b)v = av + bv$ .
3. For each vector of  $a \in \mathbb{R}$  and for each pair  $v_1, v_2 \in V, a(v_1 + v_2) = av_1 + av_2$ .
4. For each vector of  $v \in V$  and for each pair  $a, b \in \mathbb{R}, (ab)v = a(bv)$ .

Which of the above statements is not true with respect to the addition and scalar multiplication on  $V = \mathbb{R}^2$  defined above? (Enter the serial number of the statement which is not true. If statement 2 is incorrect, then enter 2 as your answer.)

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

1

**Question Number :** 150 **Question Id :** 640653386340 **Question Type :** SA **Calculator :** None

**Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Correct Marks :** 2

**Question Label :** Short Answer Question

Consider the following two statements:

P:  $V = \mathbb{R}^2$ , with the operations:

Addition:

$$(x_1, y_1) + (x_2, y_2) = (x_1 x_2, y_1 y_2); (x_1, y_1), (x_2, y_2) \in V$$

and

Scalar multiplication:

$$c(x, y) = (cx, cy); (x, y) \in V, c \in \mathbb{R}$$

is a vector space.

Q: Let  $V$  be a vector space. If  $u, v, w \in V$  are such that  $au + bv + cw = 0$  for some scalars  $a, b, c \in \mathbb{R}$  and  $ac \neq 0$ , then  $\text{span}\{u, v\} = \text{span}\{v, w\}$ .

Consider the following statements:

- Statement 1: P is true, but Q is false.
- Statement 2: Q is true, but P is false.
- Statement 3: Both P and Q are true.
- Statement 4: Both P and Q are false.

Which one of the above statements is correct? (e.g. if Statement 1 is correct, then enter 1 as your answer).

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

2

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355208

**Question Shuffling Allowed :** No

**Question Id :** 640653386326 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Calculator :** None **Response Time :** N.A

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (151 to 152)**

Question Label : Comprehension

Consider the matrix  $A = \begin{bmatrix} a & a \\ -a & a \end{bmatrix}$ , for some real number  $a$ .

Answer the given subquestions:

**Sub questions**

**Question Number : 151 Question Id : 640653386327 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

If  $A^4 = \beta a^4 I$ , then what is the value of  $\beta$ ?

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

-4

**Question Number : 152 Question Id : 640653386328 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

Find the value of  $a + \lambda$  for which

$\det(A - \lambda I) = 0$ , where  $\lambda$  is a real number (treat  $a$  as a variable).

**NOTE:** Enter your answer to the nearest integer.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

0

**Question Id : 640653386331 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (153 to 156)**

Question Label : Comprehension

Consider the following subsets of  $\mathbb{R}^3$ .

Subset 1)  $W = \{(x, y, z) \mid x, y, z \in \mathbb{R}, \text{ and } x^2 + z^2 = 0\}$

Subset 2)  $W = \{(x, y, z) \mid x, y, z \in \mathbb{R}, \text{ and } x = z\}$

Subset 3)  $W = \{(x, y, z) \mid x, y, z \in \mathbb{R}, x = y + z \text{ and } x + z = y\}$

Subset 4)  $W = \{(x, y, z) \mid x, y, z \in \mathbb{R}, (x + 1) - (y + 1) + z = 0$   
and  $x + z = y\}$

Based on the above data, answer the given subquestions.

**Sub questions**

**Question Number : 153 Question Id : 640653386332 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Short Answer Question

Subset 1 is a subspace of dimension \_\_\_\_\_. (Enter the numerical value only. Suppose the dimension is 3, then enter 3 as your answer.)

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

1

**Question Number : 154 Question Id : 640653386333 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Short Answer Question

Subset 2 is a subspace of dimension \_\_\_\_\_. (Enter the numerical value only. Suppose the dimension is 3, then enter 3 as your answer.)

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

2

**Question Number : 155 Question Id : 640653386334 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Short Answer Question

Subset 3 is a subspace of dimension \_\_\_\_\_. (Enter the numerical value only. Suppose the dimension is 3, then enter 3 as your answer.)

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

1

**Question Number :** 156 **Question Id :** 640653386335 **Question Type :** SA **Calculator :** None

**Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

**Correct Marks :** 1

**Question Label :** Short Answer Question

Subset 4 is a subspace of dimension \_\_\_\_\_. (Enter the numerical value only. Suppose the dimension is 3, then enter 3 as your answer.)

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

2

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355209

**Question Shuffling Allowed :** No

**Question Id :** 640653386336 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Calculator :** None **Response Time :** N.A

**Think Time :** N.A **Minimum Instruction Time :** 0

**Question Numbers :** (157 to 159)

**Question Label :** Comprehension

Suppose  $W_1$  and  $W_2$  are subspaces of  $\mathbb{R}^3$  defined as follows:

$$W_1 = \{(x, y, x + y) \mid x, y \in \mathbb{R}\}$$

and

$$W_2 = \{(x, y, 0) \mid x, y \in \mathbb{R}\}$$

with usual addition and scalar multiplication, i.e.,

*Addition:*  $(x_1, y_1, z_1) + (x_2, y_2, z_2) = (x_1 + x_2, y_1 + y_2, z_1 + z_2);$   
 $(x_1, y_1, z_1), (x_2, y_2, z_2) \in V$

*Scalar multiplication:*  $c(x, y, z) = (cx, cy, cz); (x, y, z) \in V, c \in \mathbb{R}$

Based on the above data, answer the given subquestions.

### Sub questions

**Question Number : 157 Question Id : 640653386337 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Select Question

Which of the following option(s)

represent  $W_1 \cap W_2$ ? (More than  
one options may be correct)

**Options :**

6406531284981. ✘  $\text{Span}\{(1, 1, 0), (1, -1, 0)\}$

6406531284982. ✓  $\text{Span}\{(-1, 1, 0), (1, -1, 0)\}$

6406531284983. ✓  $\text{Span}\{(1, -1, 0)\}$

6406531284984. ✘  $\text{Span}\{(1, 1, 2), (1, 1, 0)\}$

**Question Number : 158 Question Id : 640653386338 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Short Answer Question

What is the dimension of  $W_1 \cap W_2$  ?

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count : Yes**

**Answers Type : Equal**

**Text Areas : PlainText**

**Possible Answers :**

1

**Question Number : 159 Question Id : 640653386339 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Which of the following options is true?

**Options :**

$W_1 \cup W_2$  is a vector space of dimension 3

(with usual addition and scalar

6406531284986. ✘ multiplication).

$W_1 \cup W_2$  is a vector space of dimension 2

(with usual addition and scalar

6406531284987. ✘ multiplication).

$W_1 \cup W_2$  is a vector space of dimension 1

(with usual addition and scalar

6406531284988. ✘ multiplication).

$W_1 \cup W_2$  is not a vector space (with usual addition and scalar multiplication).

6406531284989. ✓

**Sub-Section Number :** 6

**Sub-Section Id :** 64065355210

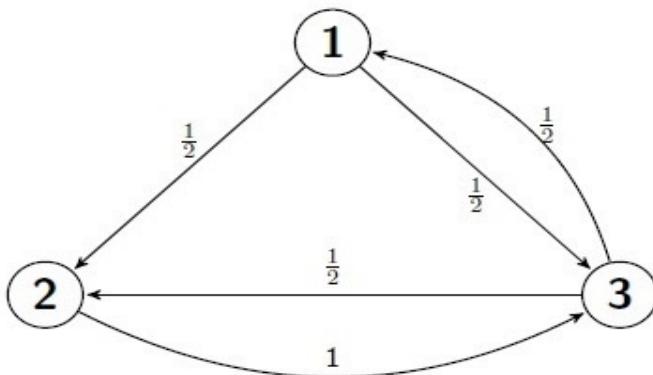
**Question Shuffling Allowed :** No

**Question Id : 640653386341 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (160 to 162)**

**Question Label : Comprehension**

A system can be in one of 3 possible states at a given time. At the next instant, it changes its state as represented pictorially in the diagram below. The number beside an arrow shows the transition probabilities from the beginning state of the arrow to the ending state of the arrow (e.g. in the diagram M2Q1:1, you can see that there is an arrow starting at state 1 and ending at state 2, with the number  $\frac{1}{2}$  beside the arrow). It implies that the probability of transition from state 1 to state 2 is  $\frac{1}{2}$ ). No arrow from state 2 to state 1 indicates that direct transition is not possible (equivalently the transition probability is 0). The probability of transition from a state to itself is 0.



M2Q1:1

The information in the diagram is represented by the matrix

$$P = \begin{bmatrix} 0 & \frac{1}{2} & \frac{1}{2} \\ 0 & 0 & 1 \\ \frac{1}{2} & \frac{1}{2} & 0 \end{bmatrix}, \text{ where the } ij\text{-th entry of } P \text{ denotes the probability}$$

of transition from state  $i$  to state  $j$ . Let the probabilities that the system is in State 1, State 2 or State 3 initially (i.e., at  $t = 0$ ) be  $X_0^1$ ,  $X_0^2$ , and  $X_0^3$ , respectively. This is represented by the

initial distribution vector ( $3 \times 1$  matrix) and is denoted by  $X_0 = \begin{bmatrix} X_0^1 \\ X_0^2 \\ X_0^3 \end{bmatrix}$ .

For any positive integer  $n$ , the distribution vector at  $t = n$  is denoted by  $X_n$  and is given by the equation  $P^T X_{n-1} = X_n$ .

Answer the given subquestions from the given information.

### **Sub questions**

**Question Number : 160 Question Id : 640653386342 Question Type : MSQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Select Question

Suppose at  $t = 2$  the distribution

vector  $X_2$  is  $\begin{bmatrix} \frac{1}{3} \\ \frac{1}{2} \\ \frac{2}{3} \end{bmatrix}$ . Which of the

following options are true?

**Options :**

6406531284991. ✓  $X_0 = X_2$ .

6406531284992. ✓  $X_0 = X_1$ .

6406531284993. ✗  $X_0 \neq X_n$  for some  $n \in \mathbb{N}$ .

There are infinitely many vectors,

6406531284994. ✗ which are possible candidates for  $X_0$ .

There are infinitely many vectors,

6406531284995. ✗ which are possible candidates for  $X_1$ .

**Question Number : 161 Question Id : 640653386343 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Suppose at  $t = 1$  the distribution vector

$X_1$  is  $\begin{bmatrix} \frac{1}{2} \\ \frac{1}{2} \\ 0 \end{bmatrix}$ . Which of the following options

is true?

**Options :**

6406531284996. ✘ The system had positive initial probabilities of being in State 1 or State 2.

6406531284997. ✓ The system was initially in State 3.

6406531284998. ✘ The system was initially in State 1.

6406531284999. ✘ The system had positive initial probabilities of being in State 2 and State 3.

**Question Number : 162 Question Id : 640653386344 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Choose the set of correct option(s).

**Options :**

Both  $P$  and  $P^2$  have the same  
reduced row echelon form.

6406531285000. ✓

6406531285001. ✘  $P$  is already in reduced row echelon form.

6406531285002. ✘  $P^2 = \lambda P$  for some real number  $\lambda$ .

6406531285003. ✘  $P^2$  is already in reduced row echelon form.

## Sem2 Statistics2

<b>Section Id :</b>	64065323881
<b>Section Number :</b>	8
<b>Section type :</b>	Online
<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	12
<b>Number of Questions to be attempted :</b>	12
<b>Section Marks :</b>	40
<b>Display Number Panel :</b>	Yes
<b>Group All Questions :</b>	No
<b>Enable Mark as Answered Mark for Review and Clear Response :</b>	Yes
<b>Maximum Instruction Time :</b>	0
<b>Sub-Section Number :</b>	1
<b>Sub-Section Id :</b>	64065355211
<b>Question Shuffling Allowed :</b>	No

**Question Number : 163 Question Id : 640653386345 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 0**

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT " FOUNDATION LEVEL:SEMESTER 2/DIRECT ENTRY DIPLOMA : STATISTICS FOR DATA SCIENCE 2"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?  
CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

**Options :**

6406531285004. ✓ Yes

6406531285005. ✗ No

**Question Number : 164 Question Id : 640653386346 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 0**

**Question Label : Multiple Choice Question**

Discrete random variables:

Distribution	PMF ( $f_X(k)$ )	CDF ( $F_X(x)$ )	$E[X]$	$\text{Var}(X)$
Uniform( $A$ ) $A = \{a, a+1, \dots, b\}$	$\frac{1}{n}, \quad x = k$ $n = b - a + 1$ $k = a, a+1, \dots, b$	$\begin{cases} 0 & x < 0 \\ \frac{k-a+1}{n} & k \leq x < k+1 \\ 1 & k = a, a+1, \dots, b-1, b \\ 1 & x \geq n \end{cases}$	$\frac{a+b}{2}$	$\frac{n^2-1}{12}$
Bernoulli( $p$ )	$\begin{cases} p & x = 1 \\ 1-p & x = 0 \end{cases}$	$\begin{cases} 0 & x < 0 \\ 1-p & 0 \leq x < 1 \\ 1 & x \geq 1 \end{cases}$	$p$	$p(1-p)$
Binomial( $n, p$ )	$nC_k p^k (1-p)^{n-k}, \quad k = 0, 1, \dots, n$	$\begin{cases} 0 & x < 0 \\ \sum_{i=0}^k nC_i p^i (1-p)^{n-i} & k \leq x < k+1 \\ & k = 0, 1, \dots, n \\ 1 & x \geq n \end{cases}$	$np$	$np(1-p)$
Geometric( $p$ )	$(1-p)^{k-1} p, \quad k = 1, \dots, \infty$	$\begin{cases} 0 & x < 0 \\ 1 - (1-p)^k & k \leq x < k+1 \\ & k = 1, \dots, \infty \end{cases}$	$\frac{1}{p}$	$\frac{1-p}{p^2}$
Poisson( $\lambda$ )	$\frac{e^{-\lambda} \lambda^k}{k!}, \quad k = 0, 1, \dots, \infty$	$\begin{cases} 0 & x < 0 \\ e^{-\lambda} \sum_{i=0}^k \frac{\lambda^i}{i!} & k \leq x < k+1 \\ & k = 0, 1, \dots, \infty \end{cases}$	$\lambda$	$\lambda$

Continuous random variables:

Distribution	PDF ( $f_X(k)$ )	CDF ( $F_X(x)$ )	$E[X]$	$\text{Var}(X)$
Uniform[ $a, b$ ]	$\frac{1}{b-a}, \quad a \leq x \leq b$	$\begin{cases} 0 & x \leq a \\ \frac{x-a}{b-a} & a < x < b \\ 1 & x \geq b \end{cases}$	$\frac{a+b}{2}$	$\frac{(b-a)^2}{12}$
Exp( $\lambda$ )	$\lambda e^{-\lambda x}, \quad x > 0$	$\begin{cases} 0 & x \leq 0 \\ 1 - e^{-\lambda x} & x > 0 \end{cases}$	$\frac{1}{\lambda}$	$\frac{1}{\lambda^2}$
Normal( $\mu, \sigma^2$ )	$\frac{1}{\sigma\sqrt{2\pi}} \exp\left(\frac{-(x-\mu)^2}{2\sigma^2}\right), \quad -\infty < x < \infty$	No closed form	$\mu$	$\sigma^2$
Gamma( $\alpha, \beta$ )	$\frac{\beta^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x}, \quad x > 0$		$\frac{\alpha}{\beta}$	$\frac{\alpha}{\beta^2}$
Beta( $\alpha, \beta$ )	$\frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1} (1-x)^{\beta-1} \quad 0 < x < 1$		$\frac{\alpha}{\alpha+\beta}$	$\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$

1. **Markov's inequality:** Let  $X$  be a discrete random variable taking non-negative values with a finite mean  $\mu$ . Then,

$$P(X \geq c) \leq \frac{\mu}{c}$$

2. **Chebyshev's inequality:** Let  $X$  be a discrete random variable with a finite mean  $\mu$  and a finite variance  $\sigma^2$ . Then,

$$P(|X - \mu| \geq k\sigma) \leq \frac{1}{k^2}$$

**Options :**

6406531285006. ✓ Useful Data has been mentioned above.

6406531285007. ✖ This data attachment is just for a reference & not for an evaluation.

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355212

**Question Shuffling Allowed :** Yes

**Question Number : 165 Question Id : 640653386350 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

**Question Label : Multiple Choice Question**

Let  $X$  and  $Y$  be two independent Bernoulli( $1/4$ ) random variables. Define another random variable  $Z = |Y - X|$ . Find the PMF of  $Z$ .

**Options :**

$z$	0	1
$f(z)$	$1/2$	$1/2$

6406531285014. ✖

$z$	0	1
$f(z)$	$3/8$	$5/8$

6406531285015. ✖

$z$	0	1
$f(z)$	$5/8$	$3/8$

6406531285016. ✓

$z$	-1	0	1
$f(z)$	$3/8$	$1/16$	$9/16$

6406531285017. ✖

**Question Number : 166 Question Id : 640653386352 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

Let  $X$  be a Poisson random variable with mean equal to 10. Which of the following bounds can be obtained using Markov's inequality?

**Options :**

6406531285019. ❌  $P(X > 20) \geq \frac{1}{2}$

6406531285020. ❌  $P(X < 20) \leq \frac{1}{2}$

6406531285021. ❌  $P(X > 25) \geq \frac{10}{25}$

6406531285022. ✓  $P(X > 25) \leq \frac{10}{26}$

**Question Number : 167 Question Id : 640653386353 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

Which of the following statements are correct?

**Options :**

6406531285023. ❌ The probability density function (PDF) of a continuous random variable  $X$  must be continuous.

6406531285024. ✓ The cumulative distribution function (CDF) of a continuous random variable  $X$  must be continuous.

6406531285025. ❌ The sum of two independent binomial random variables must be a binomial random variable.

6406531285026. ❌ For a random variable  $X$ , mean and variance cannot be equal.

**Sub-Section Number :**

3

**Sub-Section Id :**

64065355213

**Question Shuffling Allowed :**

Yes

**Question Number : 168 Question Id : 640653386351 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Short Answer Question

The joint PMF of two discrete random variables  $X$  and  $Y$  is given in the following table:

		$X$	0	1
		$Y$		
0	0	$\frac{1}{12}$	$\frac{1}{3}$	
	1	$\frac{1}{4}$	0	
2	0	$\frac{1}{6}$	$\frac{1}{6}$	

Joint PMF of  $X$  and  $Y$

Calculate  $\text{Cov}(X, Y)$ . Enter the answer correct to three decimal places.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

-0.125

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355214

**Question Shuffling Allowed :** No

**Question Id : 640653386347 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (169 to 170)**

Question Label : Comprehension

The joint PMF of two discrete random variables  $X$  and  $Y$  is given in the following table:

$\backslash$	$X$	0	1	2	$f_Y(y)$
$Y$					
0	$a$	$\frac{1}{8}$	$c$	$\frac{1}{4}$	
1	$\frac{1}{4}$	$b$	$d$	$\frac{3}{4}$	
$f_X(x)$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{1}{6}$	$1$	

Joint PMF of  $X$  and  $Y$

Based on the above data, answer the given subquestions

**Sub questions**

**Question Number : 169 Question Id : 640653386348 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Find the values of  $c$  and  $d$ .

**Options :**

6406531285008. ❌  $c = 1/8, d = 1/24.$

6406531285009. ✓  $c = 1/24, d = 1/8.$

6406531285010. ❌  $c = 1/24, d = 1/6.$

6406531285011. ❌  $c = 1/4, d = 1/8.$

**Question Number : 170 Question Id : 640653386349 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 1**

Question Label : Multiple Choice Question

Are  $X$  and  $Y$  independent?

**Options :**

6406531285012. ✓ Yes

6406531285013. ✗ No

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355215

**Question Shuffling Allowed :** No

**Question Id : 640653386354 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (171 to 172)**

Question Label : Comprehension

A fair coin is tossed twice. Let  $X$  denote the number of heads obtained.

Let  $Y$  be defined as

$$Y = \begin{cases} 0, & \text{if no heads are obtained} \\ 1, & \text{if the first head appears on the first toss} \\ 2, & \text{if the first head appears on the second toss} \end{cases}$$

Based on the above data, answer the given subquestions

**Sub questions**

**Question Number : 171 Question Id : 640653386355 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

Which among the following can be the joint PMF of  $X$  and  $Y$ ?

**Options :**

$\backslash$	$X$	0	1	2
$Y$	0	0	0	0
	0	0	$1/4$	$1/4$
	2	0	$1/4$	$1/4$

6406531285027. ✘

$\backslash$	$X$	0	1	2
$Y$	0	$1/4$	0	0
	1	0	$1/2$	$1/4$
	2	0	0	0

6406531285028. ✘

$\backslash$	$X$	0	1	2
$Y$	0	$1/4$	0	0
	1	0	$1/4$	$1/4$
	2	0	$1/4$	0

6406531285029. ✓

$\backslash$	$X$	0	1	2
$Y$	0	$1/4$	0	0
	1	0	$1/4$	0
	2	0	$1/4$	$1/4$

6406531285030. ✘

**Question Number : 172 Question Id : 640653386356 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

Find  $P(X \geq 1 | Y = 2)$ .

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

1

**Question Id : 640653386357 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (173 to 174)**

Question Label : Comprehension

A fair die is thrown three times. Let

$X_1$  represent the number obtained in the 1st throw,

$X_2$  represent the number obtained in the 2nd throw,

$X_3$  represent the number obtained in the 3rd throw.

Suppose all the throws are independent. Let

$$X = \max(X_1, X_2, X_3)$$

Based on the above data, answer the given subquestions

**Sub questions**

**Question Number : 173 Question Id : 640653386358 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Multiple Choice Question

Compute the CDF of  $X$ ,  $F_X(k)$ ,  
where  $k \in \{1, 2, \dots, 6\}$ .

**Options :**

6406531285032. ✘  $F_X(k) = \left(\frac{k}{6}\right)$

6406531285033. ✘  $F_X(k) = \left(\frac{1}{6}\right)^3$

6406531285034. ✘  $F_X(k) = \left(\frac{k+1}{6}\right)^3$

6406531285035. ✓  $F_X(k) = \left(\frac{k}{6}\right)^3$

**Question Number : 174 Question Id : 640653386359 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Short Answer Question

Find  $P(X = 5)$ . Enter the answer correct to two decimal places.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Range

**Text Areas :** PlainText

**Possible Answers :**

0.26 to 0.30

**Question Id : 640653386360 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (175 to 176)**

**Question Label : Comprehension**

Aman answers a question correctly with a probability of  $1/3$  independent of other questions. Suppose he is called for an interview where he can be asked either 1 or 2, or 3 questions with probability  $1/3$  each. Let  $X$  denote the number of questions he is asked during the interview. Let  $Y$  denote the number of questions he answers correctly during the interview.

Based on the above data, answer the given subquestions

**Sub questions**

**Question Number : 175 Question Id : 640653386361 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

If Aman is asked two questions during the interview, what is the probability that he will answer both of them correctly? Enter the answer correct to two decimal places.

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count : Yes**

**Answers Type : Range**

**Text Areas : PlainText**

**Possible Answers :**

0.10 to 0.12

**Question Number : 176 Question Id : 640653386362 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Short Answer Question

Find  $P(X = Y)$ . Enter the answer correct to two decimal places.

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count : Yes**

**Answers Type :** Range

**Text Areas :** PlainText

**Possible Answers :**

0.14 to 0.18

**Question Id : 640653386363 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (177 to 178)**

Question Label : Comprehension

Consider a function  $f : \mathbb{R} \rightarrow \mathbb{R}$  such that

$$f(x) = \begin{cases} \frac{1}{b} & -1 \leq x < 0 \\ ax(x+1)(x-1) & 0 \leq x \leq 1 \\ 0 & \text{Otherwise} \end{cases}$$

where  $a, b$  are any real constants.

Based on the above data, answer the given subquestions

**Sub questions**

**Question Number : 177 Question Id : 640653386364 Question Type : MCQ Is Question**

**Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction**

**Time : 0**

**Correct Marks : 3**

Question Label : Multiple Choice Question

Among the options below, for what values of  $a$  and  $b$ , is the function  $f$  a valid density function?

**Options :**

6406531285039. ✘  $a = 3, b = 4$

6406531285040. ✓  $a = -3, b = 4$

6406531285041. ✘  $a = -3, b = 3$

6406531285042. ✘  $a = 4, b = 3$

**Question Number : 178 Question Id : 640653386365 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

With the choice of  $a, b$ , find

$$P\left(X > -\frac{1}{2} \mid X < 1\right).$$

Enter the answer correct  
to three decimal places.

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count : Yes**

**Answers Type : Equal**

**Text Areas : PlainText**

**Possible Answers :**

0.875

**Question Id : 640653386366 Question Type : COMPREHENSION Sub Question Shuffling**

**Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A**

**Think Time : N.A Minimum Instruction Time : 0**

**Question Numbers : (179 to 180)**

Question Label : Comprehension

Suppose a fair die is rolled. Let  $X$  and  $Y$  be defined as

$$X = \begin{cases} 1, & \text{if the number is odd} \\ 0, & \text{otherwise} \end{cases}$$

$$Y = \begin{cases} 1, & \text{if the number is prime} \\ 0, & \text{otherwise} \end{cases}$$

Based on the above data, answer the given subquestions

**Sub questions**

**Question Number : 179 Question Id : 640653386367 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 3**

Question Label : Short Answer Question

Find  $E[XY]$ . Enter the answer correct to two decimal places.

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count : Yes**

**Answers Type : Range**

**Text Areas : PlainText**

**Possible Answers :**

0.32 to 0.34

**Question Number : 180 Question Id : 640653386368 Question Type : SA Calculator : None**

**Response Time : N.A Think Time : N.A Minimum Instruction Time : 0**

**Correct Marks : 2**

Question Label : Short Answer Question

Find  $\text{Var}(XY)$ . Enter the answer correct to two decimal places.

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count : Yes**

**Answers Type : Range**

**Text Areas : PlainText**

**Possible Answers :**

0.21 to 0.23