

# 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 QPC3

16 Oct 2022

**Subject Name :**

2022 Oct: IIT M QUIZ 1 FOUNDATION  
DIPLOMA QPC3

**Creation Date :**

2022-10-10 18:11:13

**Duration :**

240

**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>	6406539330
<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>	64065323946
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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>	64065355598
<b>Question Shuffling Allowed :</b>	No

**Question Number : 1 Question Id : 640653387674 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 :**

6406531288882. ✓ Yes

6406531288883. ✗ No

**Question Number : 2 Question Id : 640653387675 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 :**

6406531288884. ✓ Useful Data has been mentioned above.

6406531288885. ✗ This data attachment is just for a reference & not for an evaluation.

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355599

**Question Shuffling Allowed :** Yes

**Question Number : 3 Question Id : 640653387676 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 :**

6406531288886. ✓ a - (3), b - (2), c- (1), d - (4)

6406531288887. ✗ a - (1), b - (2), c- (4), d - (3)

6406531288888. ✗ a - (2), b - (3), c- (1), d - (4)

6406531288889. ✗ a - (3), b - (1), c- (3), d - (4)

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355600

**Question Shuffling Allowed :** Yes

**Question Number : 4 Question Id : 640653387677 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 and X.PartOfSpeech == "Verb"){
9             count = count + 1
10        }
11    }
12    Move X to Table 2
13 }
```

**Options :**

6406531288890. ❌ Number of nouns before the first verb in the dataset

6406531288891. ❌ Number of verbs before the first noun in the dataset

6406531288892. ❌ Number of nouns after the first verb in the dataset

6406531288893. ✓ Number of verbs after the first noun in the dataset

**Question Number : 5 Question Id : 640653387678 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 == 'M' or X.Mathematics > X.Physics){
5         A = 1
6     }
7     else{
8         count = count + 1
9     }
10    Move X to Table 2
11 }
```

### Options :

6406531288894. ✘ Number of male students whose Physics marks are greater than Mathematics marks

6406531288895. ✘ Number of male students whose Physics marks are greater than or equal to Mathematics marks

6406531288896. ✓ Number of female students whose Physics marks are greater than or equal to Mathematics marks

6406531288897. ✘ Number of female students whose Physics marks are less than or equal to Mathematics marks

**Question Number : 6 Question Id : 640653387680 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 :

6406531288902. ❌ Number of pairs of bills from the same shop with at least one common item

6406531288903. ✓ Number of pairs of bills from the different shops with at least one common item

6406531288904. ❌ Number of pairs of bills with at least two common items

6406531288905. ❌ Number of pairs of bills from the different shops with no common items

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355601

**Question Shuffling Allowed :** Yes

**Question Number : 7 Question Id : 640653387679 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 “Scores” 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.Mathematics == Y.Mathematics){
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 :

6406531288898. ✘ Number of students with same Mathematics marks

6406531288899. ✘ Number of pairs of students with same Mathematics marks

6406531288900. ✓ Number of students with distinct Mathematics marks

6406531288901. ✘ Number of pairs of students with distinct Mathematics marks

**Question Number : 8 Question Id : 640653387681 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 pairs of words with same letter count where both are either nouns 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     while(Table 1 has more rows){
6         Read the first row Y in Table 1
7         Move Y to Table 3
8         if(****Statement 1****){
9             if(X.PartOfSpeech == "Noun"){
10                 if(****Statement 2****){
11                     count = count + 1
12                 }
13             }
14             else{
15                 if(****Statement 3****){
16                     count = count + 1
17                 }
18             }
19         }
20     }
21     Move all rows from Table 3 to Table 1
22 }
```

### Options :

6406531288906. ✘ Statement 1: X.PartOfSpeech == Y.PartOfSpeech

Statement 2: X.LetterCount == Y.LetterCount

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

6406531288907. ✘ Statement 1: X.Word and Y.Word end with a full stop

Statement 2: X.PartOfSpeech == Y.PartOfSpeech

Statement 3: X.LetterCount == Y.LetterCount

6406531288908. ✘ Statement 1: X.LetterCount == Y.LetterCount

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

Statement 3: X.PartOfSpeech == Y.PartOfSpeech

6406531288909. ✓ 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 :** 64065355602

**Question Shuffling Allowed :** Yes

**Question Number : 9 Question Id : 640653387682 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 **min** to find the minimum total score using "Scores" dataset. There are many ways of initializing **min**. Choose the correct option(s) regarding the initialization of **min**.

It is a Multiple Select Question (MSQ)

**Options :**

6406531288910. ❌ Initialize **min** to 0

6406531288911. ✓ Pick any random card **X** from the dataset and **min** = **X.Total**

6406531288912. ✓ Pick the top card **X** from the dataset and **min** = **X.Total**

6406531288913. ✓ Initialize **min** with any value greater than the possible maximum total score

6406531288914. ❌ Initialize **min** with any value less than the possible minimum total score

**Sub-Section Number :** 6

**Sub-Section Id :** 64065355603

**Question Shuffling Allowed :** Yes

**Question Number : 10 Question Id : 640653387683 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 boys who scored at least 75 marks in Chemistry. 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 == 'M' or X.Chemistry >= 75){
2     count = count + 1
3 }
```

6406531288915. ✘

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

6406531288916. ✘

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

6406531288917. ✓

6406531288918. ✓

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

**Question Number : 11 Question Id : 640653387684 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 more marks in Physics than average Physics marks. Assume that **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 == 'F' and 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 :

6406531288919. ✘ Line 1

6406531288920. ✓ Line 5

6406531288921. ✓ Line 8

6406531288922. ✘ Line 12

6406531288923. ✘ No error in the code

**Question Number : 12 Question Id : 640653387685 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 "Words" dataset. At the end of the execution, **count** captures the number of pairs of words with either same letter count or same part of speech but not both. 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     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.LetterCount== Y.LetterCount or X.PartOfSpeech == Y.PartOfSpeech){
3     A = A + 1
4 }
5 if(X.LetterCount== Y.LetterCount and X.PartOfSpeech == Y.PartOfSpeech){
6     B = B + 1
7 }
8 return(A-B)

```

6406531288924. ✓

```

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

```

6406531288925. ✘

6406531288926. ✓

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

6406531288927. \*

**Question Number : 13 Question Id : 640653387686 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 is distinct in the Table.

```

1 Procedure groupBooks(Table 1)
2     A = 2023, 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 :**

6406531288928. ✓ Table 2 will be empty

6406531288929. ✗ Table 3 will have one record corresponding to the most recently published book of "Narayan".

6406531288930. ✓ Table 3 will have one record corresponding to the oldest published book of "Narayan".

6406531288931. ✗ Table 4 will have one record corresponding to the oldest published book of "Narayan".

6406531288932. ✗ Table 4 will have one record corresponding to the most recently published book of "Narayan".

**Question Number : 14 Question Id : 640653387687 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 more 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 }
```

6406531288933. ✓

```
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 }
```

6406531288934. ✗

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

6406531288935. ✗

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

6406531288936. ✓

**Sub-Section Number :** 7

**Sub-Section Id :** 64065355604

**Question Shuffling Allowed :** No

**Question Id : 640653387688 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 : 640653387689 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 (**A-B**) represent at the end of the execution?

```

1 Procedure doSomething(Table T1)
2     A = 0, B = 0
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((A - B))
15 End doSomething

```

### Options :

6406531288937. ❌ Year gap between first and second medal won by a player

6406531288938. ❌ Year gap between first and latest medal won by a player

6406531288939. ✓ Year gap between latest and second latest medal won by a player

6406531288940. ❌ Year gap between first and second latest medal won by a player

**Question Number : 16 Question Id : 640653387690 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 :

6406531288941. ✖ Number of players with maximum year gap between first and second medal
6406531288942. ✖ Number of players with minimum year gap between first and second medal
6406531288943. ✓ Number of players with maximum year gap between latest and second latest medal
6406531288944. ✖ Number of players with minimum year gap between latest and second latest medal

## Sem1 English1

**Section Id :** 64065323947

**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>	64065355605
<b>Question Shuffling Allowed :</b>	No

**Question Number : 17 Question Id : 640653387691 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 :**

6406531288945. ✓ Yes

6406531288946. ✗ No

<b>Sub-Section Number :</b>	2
<b>Sub-Section Id :</b>	64065355606
<b>Question Shuffling Allowed :</b>	No

**Question Id : 640653387692 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 : 640653387693 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 word which is most OPPOSITE in meaning of the word '*unfold*' as used in the passage?

**Options :**

6406531288947. ✘ Perpetuate

6406531288948. ✘ Describe

6406531288949. ✓ Conceal

6406531288950. ✘ Declare

**Question Number : 19 Question Id : 640653387694 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 needed to develop a balanced personality?

**Options :**

6406531288951. ✘ Going back to villages

6406531288952. ✓ Healthy attitude

6406531288953. ✘ Reading poetry

6406531288954. ✘ Interpersonal skills

**Question Number : 20 Question Id : 640653387695 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 should we do to enjoy tranquil life?

**Options :**

6406531288955. ✓ Enjoy the nature around us.

6406531288956. ✘ Lead a disciplined and dedicated life.

6406531288957. ✘ Believe that nature is infinite source of beauty.

6406531288958. ✘ Get totally immersed in our daily routine.

**Question Number : 21 Question Id : 640653387696 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 :**

6406531288959. ✓ Is abundantly glorious and divine

6406531288960. ✗ Brings uniformity in all seasons

6406531288961. ✗ Is the creator of this universe

6406531288962. ✗ Is the ultimate salvation of man

**Question Number : 22 Question Id : 640653387697 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 :**

6406531288963. ✗ Making efforts to inculcate healthy attitude among people

6406531288964. ✗ Supporting the cry to go back to villages

6406531288965. ✗ Establishing balance between concrete and artificial jungle of cities

6406531288966. ✓ Providing facilities for enjoying nature

**Question Id : 640653387698 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\_hs1001fdqz1e2s1q6.mp3

**Sub questions**

**Question Number : 23 Question Id : 640653387699 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

Apple acquired NeXT

**Options :**

6406531288967. ✓ TRUE

6406531288968. ✗ FALSE

**Question Number : 24 Question Id : 640653387700 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 Steve Jobs, '*the only way to do great work*' is \_\_\_\_.

**Options :**

6406531288969. ✗ To remain focused

6406531288970. ✓ To love what you do

6406531288971. ✗ To be disciplined

6406531288972. ✗ To remain calm

**Question Number : 25 Question Id : 640653387701 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

At what age did Steve Jobs read the quote '*if you live each day as if it was your last, someday you'll most certainly be right*'.

**Options :**

6406531288973. ✗ 14 years

6406531288974. ✘ 15 years

6406531288975. ✘ 16 years

6406531288976. ✓ 17 years

**Question Number : 26 Question Id : 640653387702 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 does the phrase '*to get one's affairs in order*' mean?

**Options :**

6406531288977. ✓ Prepare for one's death

6406531288978. ✘ Criticize someone repeatedly

6406531288979. ✘ Throw away something

6406531288980. ✘ Have a good relationship

**Question Number : 27 Question Id : 640653387703 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 word that means '*instrument used to view internal body parts*'.

**Options :**

6406531288981. ✘ Telescope

6406531288982. ✘ Stethoscope

6406531288983. ✘ Horoscope

6406531288984. ✓ Endoscope

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355607

**Question Shuffling Allowed :** No

**Question Id : 640653387704 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:**

Tina: Hello. Good morning. Is this Meridian hotel?

Receptionist: Good morning. Yes. (i) \_\_\_\_\_

Tina: I would like to book a suite for New Year's eve.

Receptionist: (ii) \_\_\_\_\_. Let me check the availability.

Tina: Sure. Please let me know about other services on that day.

Receptionist: (iii)\_\_\_\_ that we have no suite rooms available on that day.

Tina: Could you please (iv) \_\_\_\_ me to the manager

Receptionist: Sure, (v) \_\_\_\_ for a second. I am connecting to the manager.

Tina: Thank you.

Based on the above data, answer the given subquestions.

### **Sub questions**

**Question Number : 28 Question Id : 640653387705 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 :**

6406531288985. ❌ What can I do for you?

6406531288986. ✓ How may I help you?

6406531288987. ❌ What do you want to know?

6406531288988. ❌ This is hotel Meridian

**Question Number : 29 Question Id : 640653387706 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 :**

6406531288989. ❌ Wait for a second

6406531288990. ❌ Could you call after sometime

6406531288991. ✓ Please hold down for a second

6406531288992. ❌ Wait

**Question Number : 30 Question Id : 640653387707 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 :**

6406531288993. ✓ Sorry to inform you

6406531288994. ❌ Sorry

6406531288995. ❌ We are sorry

6406531288996. ❌ I apologise

**Question Number : 31 Question Id : 640653387708 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 :**

6406531288997. ✓ Connect

6406531288998. ✖ Call

6406531288999. ✖ Message

6406531289000. ✖ Ask

**Question Number : 32 Question Id : 640653387709 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 :**

6406531289001. ✖ Wait

6406531289002. ✓ Please hold down

6406531289003. ✖ Hold

6406531289004. ✖ Please wait

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355608

**Question Shuffling Allowed :** No

**Question Id : 640653387712 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
Surprised	a) With
Rely	b) At
Blessed	c) On

Based on the above data, answer the given subquestions.

### Sub questions

**Question Number : 33 Question Id : 640653387713 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 :**

6406531289009. ✘ With

6406531289010. ✓ At

6406531289011. ✘ On

**Question Number : 34 Question Id : 640653387714 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

Rely \_\_\_\_\_

**Options :**

6406531289012. ✘ With

6406531289013. ✘ At

6406531289014. ✓ On

**Question Number : 35 Question Id : 640653387715 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

Blessed \_\_\_\_\_

**Options :**

6406531289015. ✓ With

6406531289016. ✗ At

6406531289017. ✗ On

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355609

**Question Shuffling Allowed :** Yes

**Question Number : 36 Question Id : 640653387710 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

'She hates her mother having to suffer so badly// she moved out//'' has the same meaning as 'She hates her mother// having to suffer so badly/ she moved out///'.

**Options :**

6406531289005. ✗ TRUE

6406531289006. ✓ FALSE

**Question Number : 37 Question Id : 640653387711 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 :**

6406531289007. ✓ TRUE

6406531289008. ✗ FALSE

**Question Number : 38 Question Id : 640653387716 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 'dig in'?

**Options :**

6406531289018. ✗ To become extinct

6406531289019. ✗ To want something a lot

6406531289020. ✗ To become quieter or inaudible

6406531289021. ✓ To start eating greedily

**Question Number : 39 Question Id : 640653387717 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.

\_\_\_\_\_ we leave now or do you want to wait?

**Options :**

6406531289022. ✗ Will

6406531289023. ✓ Shall

**Question Number : 40 Question Id : 640653387718 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

'Rocky was *furious* about the results'. Here the word '*furious*' can be replaced appropriately with \_\_\_\_\_.

**Options :**

6406531289024. ✘ Fuming

6406531289025. ✘ Sad

6406531289026. ✓ Angry

6406531289027. ✘ Disappointed

**Question Number : 41 Question Id : 640653387719 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:

Flood, Delusion, Inundation, Downpour

**Options :**

6406531289028. ✘ Flood

6406531289029. ✓ Delusion

6406531289030. ✘ Inundation

6406531289031. ✘ Downpour

**Question Number : 42 Question Id : 640653387720 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 have \_\_\_\_ interest in sports.

**Options :**

6406531289032. ✘ Some

6406531289033. ✓ Little

6406531289034. ✗ Few

6406531289035. ✗ A few

**Question Number : 43 Question Id : 640653387721 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 officer showed \_\_ sentiments towards the grievances.

**Options :**

6406531289036. ✓ Cold

6406531289037. ✗ Dark

6406531289038. ✗ Active

6406531289039. ✗ None of these

**Question Number : 44 Question Id : 640653387722 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 shop specializes in exotic vegetables, such as cherry tomatoes, baby corn, and parsley.*

**Options :**

6406531289040. ✗ Specializes

6406531289041. ✗ Exotic

6406531289042. ✓ Such as

6406531289043. ✗ Vegetables

**Question Number : 45 Question Id : 640653387723 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.

I can't live on \_\_\_\_\_ 600 dollars a month.

**Options :**

6406531289044. ✘ A

6406531289045. ✘ An

6406531289046. ✘ The

6406531289047. ✓ No article

**Question Number : 46 Question Id : 640653387724 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:

*Thirty years have passed away since they met.*

**Options :**

6406531289048. ✘ Thirty

6406531289049. ✘ Years

6406531289050. ✓ Since

6406531289051. ✘ They

**Question Number : 47 Question Id : 640653387725 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.

*The movie is starting now.*

**Options :**

6406531289052. ✘ Preposition

6406531289053. ✘ Conjunction

6406531289054. ✓ Adverb

6406531289055. ✘ Adjective

**Question Number : 48 Question Id : 640653387726 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 the appropriate option.

The adjective formed from the word 'hope' is \_\_\_\_.

**Options :**

6406531289056. ✘ Hopefully

6406531289057. ✓ Hopeful

**Question Number : 49 Question Id : 640653387727 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.

Much of the information found online \_\_\_\_\_ often misleading.

**Options :**

6406531289058. ✘ Has

6406531289059. ✘ Have

6406531289060. ✘ Are

6406531289061. ✓ Is

**Question Number : 50 Question Id : 640653387728 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.

He is the best football player in the team.

**Options :**

6406531289062. ✘ Noun

6406531289063. ✘ Adjective

6406531289064. ✓ Pronoun

6406531289065. ✘ Adverb

**Question Number : 51 Question Id : 640653387729 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:

We were not in \_\_\_\_ hurry to go to school

**Options :**

6406531289066. ✓ A

6406531289067. ✘ An

6406531289068. ✘ The

6406531289069. ✘ None of these

**Question Number : 52 Question Id : 640653387730 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:

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

**Options :**

6406531289070. ✘ A

6406531289071. ✘ An

6406531289072. ✓ The

6406531289073. ✘ None of these

**Question Number : 53 Question Id : 640653387731 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 is a word without a diphthong?

**Options :**

6406531289074. ✘ Loiter

6406531289075. ✓ Stew

6406531289076. ✘ Maiden

6406531289077. ✘ None of these

**Question Number : 54 Question Id : 640653387732 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 /k/ sound ?

**Options :**

6406531289078. ✘ Cathartic

6406531289079. ✘ Kitten

6406531289080. ✓ Both Cathartic and Kitten

**Question Number : 55 Question Id : 640653387733 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 /i:/ sound from the following:

**Options :**

6406531289081. ✓ Mean

6406531289082. ✗ Jane

6406531289083. ✗ Mare

6406531289084. ✗ Both Jane and Mare

**Question Number : 56 Question Id : 640653387734 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

There isn't any word without vowel sound. This statement is

**Options :**

6406531289085. ✓ TRUE

6406531289086. ✗ FALSE

**Question Number : 57 Question Id : 640653387735 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 the same sound as underlined in strain?

**Options :**

6406531289087. ✗ Naïve

6406531289088. ✘ Buy

6406531289089. ✓ Rail

## Sem1 Maths1

<b>Section Id :</b>	64065323948
<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>	64065355610
<b>Question Shuffling Allowed :</b>	No

**Question Number : 58 Question Id : 640653387736 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 : MATHEMATICS 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 :**

6406531289090. ✓ Yes

6406531289091. ✗ No

**Question Number : 59 Question Id : 640653387737 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 :**

6406531289092. ✓ Useful Data has been mentioned above.

6406531289093. ✗ This data attachment is just for a reference & not for an evaluation.

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355611

**Question Shuffling Allowed :** No

**Question Id : 640653387738 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  $y$ -intercept is  $-27$ . 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  $q(x)$ .

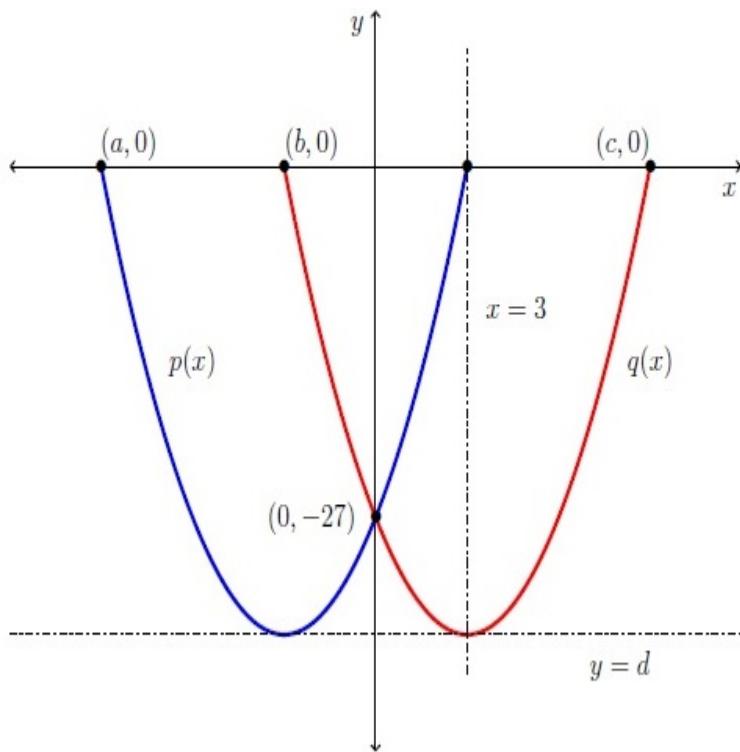


Figure 1

Based on this information, answer the given sub-questions

## Sub questions

**Question Number : 60 Question Id : 640653387739 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  $a + b + c$ ?

**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 :**

-3

**Question Number :** 61 **Question Id :** 640653387740 **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  $d$ ?

**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 :**

-36

**Question Number :** 62 **Question Id :** 640653387741 **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 :**

6406531289096. ✓ The axis of symmetry of  $p(x)$  is  $x = -3$ .

6406531289097. ✗ The slopes of both  $p(x)$  and  $q(x)$  are same at  $(0, -27)$ .

6406531289098. ✓ The slope of  $p(x)$  is 6 but the slope  $q(x)$  is -6 at  $(0, -27)$ .

6406531289099. ✓ The discriminant of both the quadratic equations  $p(x) = 0$  and  $q(x) = 0$  are same.

**Sub-Section Number :**

**Sub-Section Id :**

64065355612

**Question Shuffling Allowed :**

No

**Question Id : 640653387742 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 : 640653387743 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 : 640653387744 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 :** 64065355613

**Question Shuffling Allowed :** No

**Question Id :** 640653387745 **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 : 640653387746 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 :**

6406531289102. ✓ TRUE

6406531289103. ✗ FALSE

**Question Number : 66 Question Id : 640653387747 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 :**

6406531289104. ✗ TRUE

6406531289105. ✓ FALSE

**Question Number : 67 Question Id : 640653387748 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 :** 640653387749 **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

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355614

**Question Shuffling Allowed :** Yes

**Question Number :** 69 **Question Id :** 640653387750 **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 :**

6406531289108. ✘  $R_1 \cap R_2$  represents an injective function

6406531289109. ✓  $R_2$  represents a relation but not a function.

6406531289110. ✓  $R_1$  represents a function.

6406531289111. ✘  $R_2$  represents a function

**Question Number : 70 Question Id : 640653387756 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).

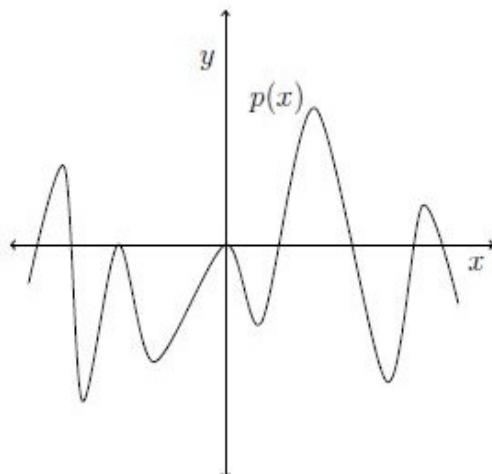


Figure 2

**Options :**

6406531289131. ✓ The degree of  $p(x)$  is at least 10.

6406531289132. ✓  $p(x)$  represent an even degree polynomial

6406531289133. ✘ Total number of turning point of  $p(x)$  are 8.

6406531289134. ✓ Multiplicities of zero and one of the negative root could be the same

**Sub-Section Id :**

64065355615

**Question Shuffling Allowed :**

Yes

**Question Number : 71 Question Id : 640653387751 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 :**

64065355616

**Question Shuffling Allowed :**

Yes

**Question Number : 72 Question Id : 640653387752 Question Type : MSQ Is Question**

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

**Correct Marks : 4**

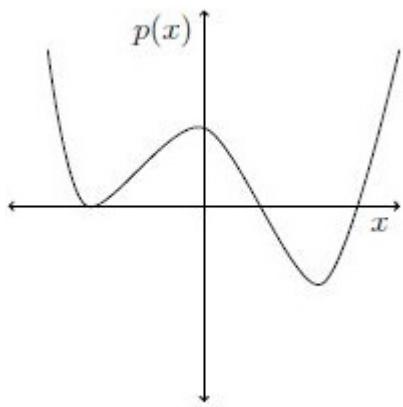
**Question Label : Multiple Select Question**

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

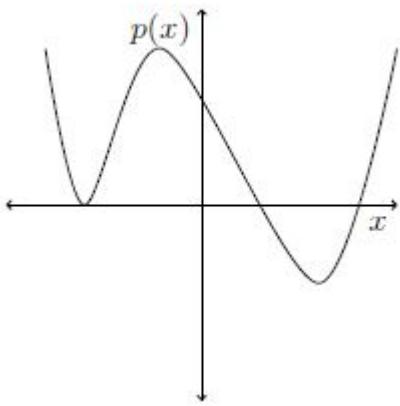
- $p(x)$  is an even degree polynomial.
- $p(x)$  has at least one positive real root and at least one negative real root.
- $(x + 4)^2$  is a factor of  $p(x)$ .
- $p(0) \neq 0$

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

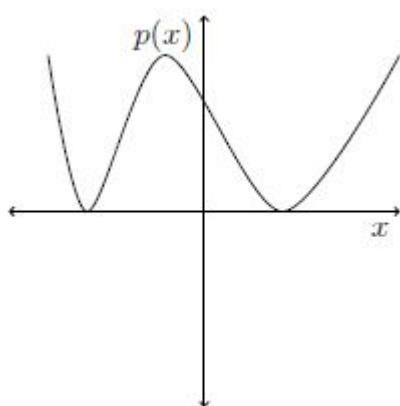
**Options :**



6406531289113. ✓

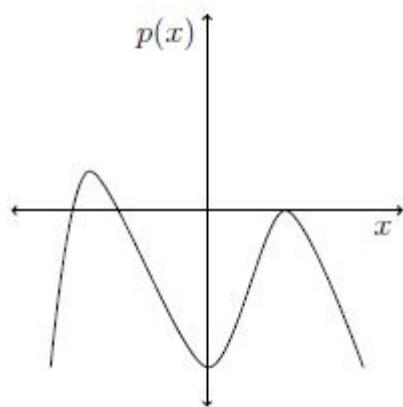
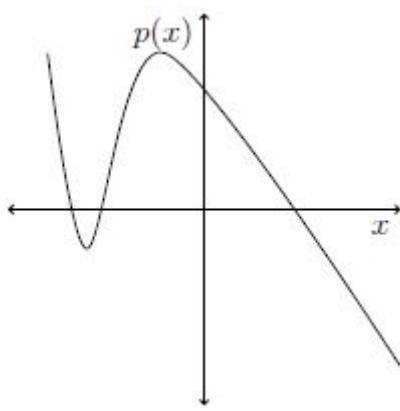


6406531289114. ✓

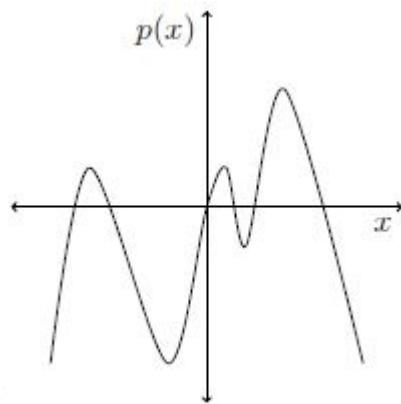


6406531289115. ✓

6406531289116. ❌



6406531289117. ✘



6406531289118. ✘

**Question Number : 73 Question Id : 640653387754 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 :**

6406531289123. ✓  $y - 20 = 3(x - 10)^2$  is an equation of a parabola whose vertex is at  $(10, 20)$ .

6406531289124. ✓  $p(x) = ax^{10} + bx^5 + 2x + 8$  where  $a = 0$  and  $b \neq 0$ , is a polynomial of degree 5.

6406531289125. ✘  $-5x + 4y - 1 = 0$  and  $\frac{x}{4} - \frac{y}{5} = 1$  are perpendicular to each other.

6406531289126. ✓  $2x + 7y + 9 = 0$  and  $6x + 21y + 9 = 0$  are parallel to each other.

**Sub-Section Number :** 8

**Sub-Section Id :** 64065355617

**Question Shuffling Allowed :** Yes

**Question Number : 74 Question Id : 640653387753 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 bottom to top, what are the coordinates of your location? Assume origin (0, 0) to be at the intersection of the ladder and the ground.

**Options :**

6406531289119. ✘ (3/2, 1/2)

6406531289120. ✘ (1/3, 2/3)

6406531289121. ✘ (2/3, 2/3)

6406531289122. ✓ (4/3, 4/3)

**Question Number : 75 Question Id : 640653387755 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:  $\text{SSE} = f(a) = a^2 - 8a + 30$ . What will be the best fit value.

**Options :**

6406531289127. ✘ 9

6406531289128. ✓ 14

6406531289129. ✘ 0

6406531289130. ✘ -2

## Sem1 Statistics1

<b>Section Id :</b>	64065323949
<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>	64065355618
<b>Question Shuffling Allowed :</b>	No

**Question Number : 76 Question Id : 640653387757 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 :**

6406531289135. ✓ Yes

6406531289136. ✗ No

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355619

**Question Shuffling Allowed :** Yes

**Question Number : 77 Question Id : 640653387758 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 incorrect?

**Options :**

6406531289137. ✓ Grouping students by favourite subjects in a class is a numerical variable.

6406531289138. ✓ Amount of calories consumed by a person in a day is a categorical variable.

6406531289139. ✗ The amount of time to complete a quiz is a numerical and continuous variable.

6406531289140. ✗ The number of attempts to clear an exam is a numerical and discrete variable.

**Question Number : 78 Question Id : 640653387759 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 :**

6406531289141. ❌ A nominal scale has the property of labelling the categories and it involves the ranking of data.

6406531289142. ❌ An ordinal scale has all the properties of nominal scale and it does not involve the ranking of data.

6406531289143. ✓ An Interval scale has all the properties of ordinal scale and it does not satisfy the absolute zero property.

6406531289144. ✓ A ratio scale has all the properties of interval scale and it satisfies the absolute zero property.

**Question Number : 79 Question Id : 640653387760 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 :**

6406531289145. ✓ Range of the dataset is 171.

6406531289146. ❌ Median of the dataset is 42.

6406531289147. ✓  $75^{th}$  percentile of the dataset is 95.

6406531289148. ❌ IQR (Inter-quartile range ) of the dataset is 65.

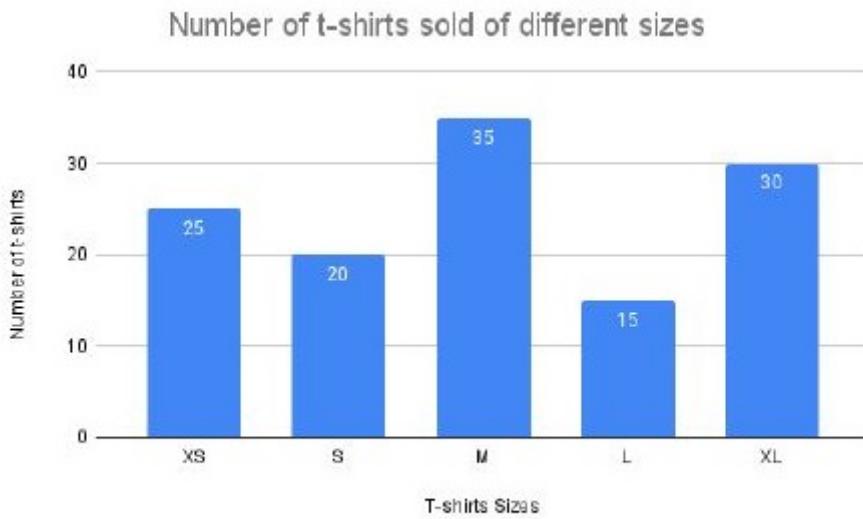
**Question Number : 80 Question Id : 640653387761 Question Type : MSQ Is Question**

**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 :**

6406531289149. ✓ Mode of the dataset is size 'M'.

6406531289150. ✗ Mean of the dataset is 25.

6406531289151. ✗ Population variance of the dataset is 50.

6406531289152. ✗ Median of the dataset is 20.

**Question Number : 81 Question Id : 640653387762 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 :**

6406531289153. ✓ The five number summary may remain the same.

6406531289154. ✗ The five number summary will definitely change.

6406531289155. ✗ The minimum value of the dataset will definitely change.

6406531289156. ✗ The five number summary will always change whenever an observation is wrongly noted.

**Question Number : 82 Question Id : 640653387763 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 :**

6406531289157. ❌ 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.

6406531289158. ❌ If the correlation coefficient between two variables is zero, then the variables are independent.

6406531289159. ✓ Correlation coefficient is a unitless measure of association.

6406531289160. ❌ Correlation coefficient always lies between 0 and 1.

**Question Number : 83 Question Id : 640653387764 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 :**

6406531289161. ✓ Of all the graduate students, there are 30% who does not want to go for higher studies.
6406531289162. ✗ Of all the post-graduate students, there are 56.25% who wants to go for higher studies.
6406531289163. ✓ 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.
6406531289164. ✗ 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.
6406531289165. ✗ There is no association between Education and Willingness to go for higher studies.
6406531289166. ✓ There is an association between Education and Willingness to go for higher studies.

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355620

**Question Shuffling Allowed :** Yes

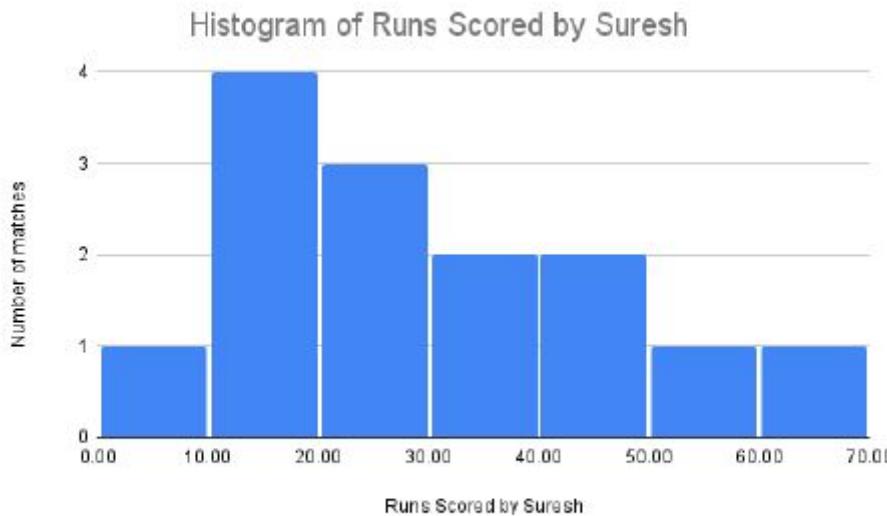
**Question Number : 84 Question Id : 640653387765 Question Type : SA Calculator : None**

**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 : 640653387767 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 25% and 35% 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 :**

75

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355621

**Question Shuffling Allowed :** Yes

**Question Number :** 86 **Question Id :** 640653387766 **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 population variance of a dataset of 6 observations is 50, then what is the sample 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 :**

60

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355622

**Question Shuffling Allowed :** Yes

**Question Number :** 87 **Question Id :** 640653387768 **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 :** 64065355623

**Question Shuffling Allowed :** No

**Question Id :** 640653387769 **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 :** 640653387770 **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 70 threaded rods at random from those that produced in the month of May 2022 at the factory. Identify the sample and population.

**Options :**

6406531289171. ❌ The population is all threaded rods ever produced at the factory and the sample is all the threaded rods produced in the month of May 2022.

6406531289172. ✓ The population is all threaded rods ever produced at the factory and the sample is the 70 selected threaded rods.

6406531289173. ❌ The population is all threaded rods produced in the year 2022 and the sample is the threaded rods produced in the month of May 2022.

6406531289174. ❌ None of these.

**Question Number : 89 Question Id : 640653387771 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 :**

6406531289175. ✓ It is time-series data.

6406531289176. ❌ It is cross-sectional data.

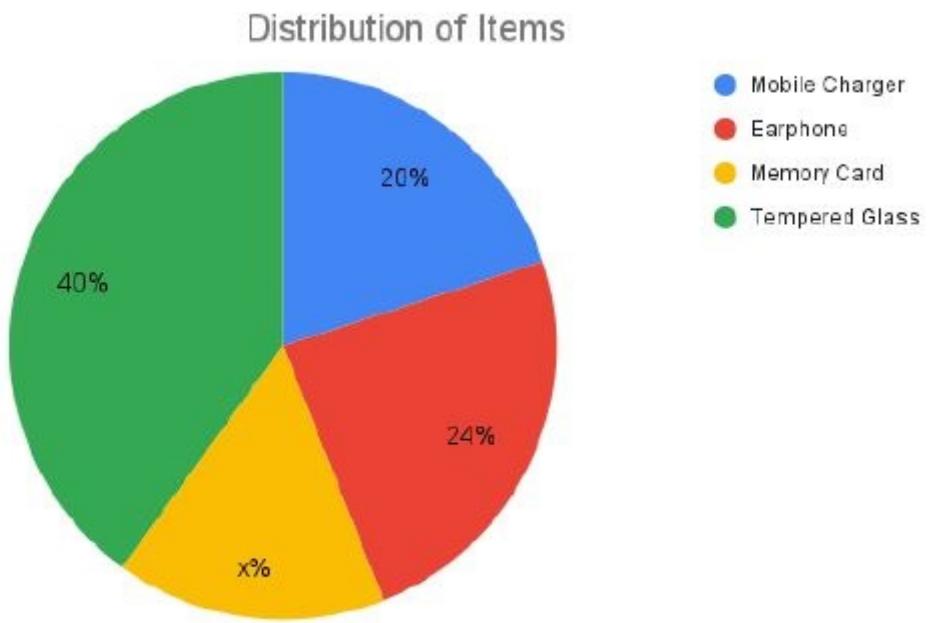
**Question Id : 640653387772 Question Type : COMPREHENSION Sub Question Shuffling**

**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 : 640653387773 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 : 640653387774 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 300, 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 :**

72

## Sem2 Intro to Python

**Section Id :** 64065323950

**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 :** 64065355624

**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 :**

6406531289179. ✓ YES

6406531289180. ✗ NO

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355625

**Question Shuffling Allowed :** Yes

**Question Number : 93 Question Id : 640653387776 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 and not E2)
```

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

**Options :**

6406531289181. ✓ It is **True** if and only if E1 and E2 have same values

6406531289182. ✗ It is **False** if and only if E1 and E2 have the same value

6406531289183. ✗ It is always **True**

6406531289184. ✘ It is always **False**

**Question Number : 94 Question Id : 640653387777 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 | print((a + b + c) * int(d))
```

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

**Input**

```
1 | 1234
```

**Options :**

6406531289185. ✓

```
1 | 123123123123
```

6406531289186. ✘

```
1 | 18
```

6406531289187. ✘

```
1 | 24
```

6406531289188. ✘

```
1 | 492
```

6406531289189. ✘

```
1 | 123412341234
```

**Question Number : 95 Question Id : 640653387779 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 :**

6406531289194.  $n^2$

6406531289195.  $n(n + 1)$

6406531289196.  $n(n + 1)/2$

6406531289197.  $n(n - 1)/2$

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355626

**Question Shuffling Allowed :** Yes

**Question Number : 96 Question Id : 640653387780 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 = [0]
2 for i in range(1, 10):
3     size = len(L)
4     value = i + L[size-1]
5     L.append(value)
6 print(L)
```

Options :

6406531289198. ✘

```
1 | [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

6406531289199. ✓

```
1 | [0, 1, 3, 6, 10, 15, 21, 28, 36, 45]
```

6406531289200. ✘

```
1 | [1, 3, 6, 10, 15, 21, 28, 36, 45]
```

6406531289201. ✘

```
1 | [0, 1, 3, 6, 10, 15, 21, 28, 36, 45, 55]
```

Question Number : 97 Question Id : 640653387782 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 = n
2 for i in range(1, n):
3     a = a + i
4 b = a
5 for j in range(1, a):
6     b = b * j
7 print(b)
```

**Options :**

6406531289206. ✘ Sum of the factorial of the first  $n-1$  natural numbers

6406531289207. ✘ Factorial of the sum of the first  $n-1$  natural numbers

6406531289208. ✘ Sum of the factorial of the first  $n$  natural numbers

6406531289209. ✓ Factorial of the sum of the first  $n$  natural numbers

**Question Number : 98 Question Id : 640653387783 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  $L = [394, 289, 120, 719, 50, 27, 15]$  ?

**Options :**

1 | one

6406531289210. ✘

6406531289211. ✘

1 | two

1 | three

6406531289212. ✓

1 | four

6406531289213. ✗

**Sub-Section Number :** 4

**Sub-Section Id :** 64065355627

**Question Shuffling Allowed :** Yes

**Question Number : 99 Question Id : 640653387778 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**

A is a positive integer that represents the age. Consider the following snippet of code:

```
1 if 0 < A <= 14:  
2     print('child')  
3 elif 14 < A <= 24:  
4     print('youth')  
5 elif 24 < A <= 64:  
6     print('adult')  
7 else:  
8     print('senior')
```

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 :**

6406531289190. ✓

```
1 if 0 < A <= 14:  
2     print('child')  
3 if 14 < A <= 24:  
4     print('youth')  
5 if 24 < A <= 64:  
6     print('adult')  
7 if A > 64:  
8     print('senior')
```

```
1 if 0 < A <= 14:  
2     print('child')  
3 if 14 < A <= 24:  
4     print('youth')  
5 elif 24 < A <= 64:  
6     print('adult')  
7 else:  
8     print('senior')
```

6406531289191. ✘

```
1 if 0 < A <= 14:  
2     print('child')  
3 elif 14 < A <= 24:  
4     print('youth')  
5 elif 24 < A <= 64:  
6     print('adult')  
7 elif A > 64:  
8     print('senior')
```

6406531289192. ✓

```
1 if 0 < A <= 14:  
2     print('child')  
3 if 14 < A <= 24:  
4     print('youth')  
5 if 24 < A <= 64:  
6     print('adult')  
7 else A > 64:  
8     print('senior')
```

6406531289193. ✘

**Sub-Section Number :**

5

**Sub-Section Id :**

64065355628

**Question Shuffling Allowed :**

Yes

**Question Number : 100 Question Id : 640653387781 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 the pair of "Welcome to Python Quiz!" and "All the best!!" alternatively on separate lines  $n$  times? There should be one line space between two pairs and there should not be any space after the last pair. Here,  $n$  is a positive integer that has already been defined. Your answer should be applicable for any positive integer.

**Sample output for  $n = 3$**

```
1 Welcome to Python quiz!
2 All the best!!
3
4 Welcome to Python quiz!
5 All the best!!
6
7 Welcome to Python quiz!
8 All the best!!
```

**Options :**

```
1 for i in range(n):
2     print('Welcome to Python Quiz!')
3     print('All the best!!')
4     print()
```

6406531289202. ✘

```
1 print('Welcome to Python Quiz!')
2 print('All the best!!')
3 for i in range(n - 1):
4     print()
5     print('Welcome to Python Quiz!')
6     print('All the best!!')
```

6406531289203. ✓

```
1 for i in range(n):
2     print('Welcome to Python quiz!')
3     print('All the best!!')
4     if(i != n - 1):
5         print()
```

6406531289204. ✓

```
1 for i in range(n - 1):
2     print('Welcome to Python quiz!')
3     print('All the best!!')
4     if(i != n - 1):
5         print()
```

6406531289205. ✗

**Question Number : 101 Question Id : 640653387785 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])
```

6406531289215. ✓

6406531289216. ✗

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

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

6406531289217. ✘

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

6406531289218. ✓

**Question Number : 102 Question Id : 640653387786 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] != 0):
6             flag = False
7 print(flag)
```

**Options :**

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

6406531289219. ✘

6406531289220. ❌

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

6406531289221. ✓

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

6406531289222. ❌

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

**Sub-Section Number :**

6

**Sub-Section Id :**

64065355629

**Question Shuffling Allowed :**

Yes

**Question Number : 103 Question Id : 640653387787 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 :**

6406531289223. ✓

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

6406531289224. ✓

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

6406531289225. ❌

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

```
1 | a = -5, b = 5, c = 5
```

6406531289226. ✓

**Question Number : 104 Question Id : 640653387788 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()
```

6406531289227. ✓

6406531289228. ✓

```

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 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()

```

6406531289229. ✘

```

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()

```

6406531289230. ✓

**Sub-Section Number :**

7

**Sub-Section Id :**

64065355630

**Question Shuffling Allowed :**

Yes

**Question Number : 105 Question Id : 640653387784 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 x 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 :**

9

## Sem2 English2

**Section Id :** 64065323951

**Section Number :** 6

**Section type :** Online

**Mandatory or Optional :** Mandatory

**Number of Questions :** 33

<b>Number of Questions to be attempted :</b>	33
<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>	64065355631
<b>Question Shuffling Allowed :</b>	No

**Question Number : 106 Question Id : 640653387789 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 :**

6406531289231. ✓ YES

6406531289232. ✗ NO

<b>Sub-Section Number :</b>	2
<b>Sub-Section Id :</b>	64065355632
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 107 Question Id : 640653387802 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:

*He did not attend the reception, nor did he send any of his family members to the occasion.*

**Options :**

6406531289271. ✘ Simple

6406531289272. ✓ Compound

6406531289273. ✘ Complex

**Question Number : 108 Question Id : 640653387803 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 boy entered the room*

**Options :**

6406531289274. ✓ Simple

6406531289275. ✘ Compound

6406531289276. ✘ Complex

**Question Number : 109 Question Id : 640653387804 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 dependent clauses are there in the following sentence:

*The student missed the lecture*

**Options :**

6406531289277. ✘ 1

6406531289278. ✘ 2

6406531289279. ✓ No dependent clauses

**Question Number : 110 Question Id : 640653387805 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 verb(s) that are underlined.

*Kennedy builds an enormous home that juts out into the sea.*

**Options :**

6406531289280. ✘ Sea

6406531289281. ✘ Home

6406531289282. ✘ Kennedy

6406531289283. ✓ An enormous home

**Question Number : 111 Question Id : 640653387806 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 :**

6406531289284. ✘ Hina walked

6406531289285. ✘ Hina walked the dog

6406531289286. ✓ In the park

6406531289287. ✘ The dog in the park

**Question Number : 112 Question Id : 640653387807 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

*Sarika, who won the filmfare award, will be our chief guest.* Here the adjectival clause is

**Options :**

6406531289288. ✘ Sarika, who won the filmfare award

6406531289289. ✓ Who won the filmfare award

6406531289290. ✘ Will be our chief guest

6406531289291. ✘ Both Sarika, who won the filmfare award and Who won the filmfare award

**Question Number : 113 Question Id : 640653387808 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 am looking for an employee who is well versed in corporate finance.* Here the relative pronoun is

—.

**Options :**

6406531289292. ✓ Who

6406531289293. ✘ Am

6406531289294. ✘ For

6406531289295. ✘ Is

**Question Number : 114 Question Id : 640653387809 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

*'Haresh and Kabir vied for attention but neither of them received it.'* is a simple sentence.

**Options :**

6406531289296. ✘ TRUE

6406531289297. ✓ FALSE

**Question Number : 115 Question Id : 640653387810 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 :**

6406531289298. ✓ This road leads to the next town

6406531289299. ✘ Which is famous for its furniture

6406531289300. ✘ Famous for its furniture

6406531289301. ✘ To the next town

**Question Number : 116 Question Id : 640653387811 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

Mary and I \_\_ going to the opera.

**Options :**

6406531289302. ✓ Are

6406531289303. ✘ Is

6406531289304. ✘ Was

6406531289305. ✘ Will

**Question Number : 117 Question Id : 640653387812 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

Statement 1: The verb 'go' is transitive.

Statement 2: The verb 'go' almost always requires an adverb/adjunct.

**Options :**

6406531289306. ✘ Only statement 1 is true

6406531289307. ✘ Both statements are false

6406531289308. ✓ Only statement 2 is true

6406531289309. ✘ Both statements are true

**Question Number : 118 Question Id : 640653387813 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 cat is not sleeping.*

**Options :**

6406531289310. ✘ Is not

6406531289311. ✘ Is not sleeping

6406531289312. ✓ Not

6406531289313. ✘ My

**Question Number : 119 Question Id : 640653387814 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 '-able' to 'drink' changes it from \_\_\_\_.

**Options :**

6406531289314. ✓ Verb to adjective

6406531289315. ✗ Adjective to verb

6406531289316. ✗ Noun to Verb

6406531289317. ✗ Verb to noun

**Question Number : 120 Question Id : 640653387815 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

Joy/less is an adjective formed by adding a \_\_\_\_.

**Options :**

6406531289318. ✗ Prefix

6406531289319. ✓ Suffix

6406531289320. ✗ Infix

6406531289321. ✗ None of these

**Question Number : 121 Question Id : 640653387816 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 prefixes in the following sentence.

*The anticlimax was that the amoral politician, who was known for his illegal ways, got decorated in the end.*

**Options :**

6406531289322. ✘ 1

6406531289323. ✘ 2

6406531289324. ✓ 3

6406531289325. ✘ 4

**Question Number : 122 Question Id : 640653387817 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.

*Poonguzhali was rowing the boat.*

**Options :**

6406531289326. ✘ Simple present

6406531289327. ✘ Present continuous

6406531289328. ✓ Past continuous

6406531289329. ✘ Simple past

**Question Number : 123 Question Id : 640653387818 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.

*I have not found her.*

**Options :**

6406531289330. ✘ Subjunctive

6406531289331. ✓ Indicative

6406531289332. ✘ Interrogative

6406531289333. ✘ Imperative

**Question Number : 124 Question Id : 640653387819 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 verbs that are in the past perfect tense.

Zain and his friends \_\_\_\_\_ to visit their teachers.

**Options :**

6406531289334. ✘ Went

6406531289335. ✘ Gone

6406531289336. ✓ Had gone

6406531289337. ✘ Had went

**Question Number : 125 Question Id : 640653387820 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.

Zain and his friends \_\_\_\_\_ to visit their teachers.

**Options :**

6406531289338. ✘ Will be going

6406531289339. ✘ Had gone

6406531289340. ✓ Will have gone

6406531289341. ✘ Had went

**Question Number : 126 Question Id : 640653387821 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.

Raya \_\_\_\_ the dragon.

**Options :**

6406531289342. ❌ Is slaying

6406531289343. ✓ Has been slaying

6406531289344. ❌ Will slay

6406531289345. ❌ Will be slaying

**Question Number : 127 Question Id : 640653387822 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

*Raju watches football matches every evening after school.* Here the adverb is with \_\_\_\_.

**Options :**

6406531289346. ❌ Subject

6406531289347. ✓ Predicate

6406531289348. ❌ No adverb

6406531289349. ❌ Both Subject and Predicate

**Question Number : 128 Question Id : 640653387823 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 :**

6406531289350. ✘ Laptops

6406531289351. ✘ Buys

6406531289352. ✘ New

6406531289353. ✓ Every year

**Question Number : 129 Question Id : 640653387824 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.

Inquiring about the availability of team for scheduling a meeting

**Options :**

6406531289354. ✓ Please let me know if you are available at 6 PM.

6406531289355. ✘ Are you available at 6 PM?

6406531289356. ✘ Could you please come at 6 PM?

6406531289357. ✘ Will you be available at 6 PM?

**Question Number : 130 Question Id : 640653387825 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 :**

6406531289358. ✘ Can we do the meeting in the fourth floor conference room?

6406531289359. ✘ Could we conduct the meeting in the conference room on the fourth floor , please?

6406531289360. ✘ I was wondering if we could do the meeting in the fourth floor conference room.

6406531289361. ✓ All of these

**Question Number : 131 Question Id : 640653387826 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

Imperatives denote \_\_\_\_\_ and \_\_\_\_\_.

**Options :**

6406531289362. ✘ Life and death

6406531289363. ✓ Commands and requests

6406531289364. ✘ Prepositions and conjunctions

6406531289365. ✘ Articles and particles

**Question Number : 132 Question Id : 640653387827 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 decided that it would be \_\_\_\_\_ correct \_\_\_\_\_ proper to boo at the dancer who danced badly.

**Options :**

6406531289366. ✘ Quite ... and

6406531289367. ✘ Either ... or

6406531289368. ✘ Not only ... but also

6406531289369. ✓ Neither ... nor

**Question Number : 133 Question Id : 640653387828 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 could not find the book he wanted \_\_\_ he borrowed a magazine instead.

**Options :**

6406531289370. ✘ So that

6406531289371. ✘ But

6406531289372. ✓ So

6406531289373. ✘ And

**Question Number : 134 Question Id : 640653387829 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:

Lucia read a magazine \_\_\_\_ doing her homework.

**Options :**

6406531289374. ✘ Nor

6406531289375. ✓ Instead of

6406531289376. ✘ And

6406531289377. ✘ Or

**Question Number : 135 Question Id : 640653387830 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:

We are going to wait at the restaurant \_\_\_\_\_ the rain stops.

**Options :**

6406531289378. ❌ Because

6406531289379. ❌ Despite

6406531289380. ❌ Unless

6406531289381. ✓ Until

**Question Number : 136 Question Id : 640653387831 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:

It was only when I reread her poems recently \_\_\_\_\_ I began to appreciate their beauty.

**Options :**

6406531289382. ❌ So

6406531289383. ❌ Until

6406531289384. ✓ That

6406531289385. ❌ Then

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355633

**Question Shuffling Allowed :** No

**Question Id : 640653387790 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\_hs1002fdqz1e2s1q1mq.mp3

### Sub questions

**Question Number : 137 Question Id : 640653387791 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 *warmth* is stressed on the \_\_\_\_\_ syllable.

**Options :**

6406531289233. ✘ Fourth syllable

6406531289234. ✘ Second syllable

6406531289235. ✘ Third syllable

6406531289236. ✓ First syllable

**Question Number : 138 Question Id : 640653387792 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 *speaker*.

**Options :**

6406531289237. ✓ 2

6406531289238. ✘ 3

6406531289239. ✘ 4

6406531289240. ✘ 5

**Question Number : 139 Question Id : 640653387793 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 second syllable of the word *story* is \_\_\_\_\_.

**Options :**

6406531289241. ✓ Short

6406531289242. ✗ Long

**Question Number : 140 Question Id : 640653387794 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 *always* is stressed on the \_\_\_\_\_ syllable.

**Options :**

6406531289243. ✓ First syllable

6406531289244. ✗ Second syllable

6406531289245. ✗ Third Syllable

6406531289246. ✗ Fourth Syllable

**Question Number : 141 Question Id : 640653387795 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 sentence as you hear in the audio:

Well it is a story of a woman whose perfectly imperfect life made her who and what she is today

**Options :**

6406531289247. ✘ //Well it is a story of/ a woman whose/ perfectly imperfect life made/ her who and what she is today//

6406531289248. ✓ //Well it is a story of a woman/ whose perfectly imperfect life/ made her who and what she is today//

6406531289249. ✘ //Well it is a story/ of a woman whose/ perfectly/ imperfect life made her who and what she/ is today//

6406531289250. ✘ //Well it is a story of a woman whose perfectly// imperfect life made her who and what/ she is today//

**Question Id : 640653387796 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 conversation using appropriate options in the given subquestions.

Harry: Hello. Is this XYZ Associates?

Mary: Hello. Yes, I am Mary here (1)\_\_\_

Harry: (2) \_\_\_connect me to Mr. Joseph?

Mary: Sure. (3)\_\_\_

Harry: Thanks!

Mary: Mr. Joseph is not available. (4) \_\_\_ like to leave a message?

Harry: Yes. Please inform him to call me back.

Mary: Sure Sir.

Harry: (5)\_\_\_

**Sub questions**

**Question Number : 142 Question Id : 640653387797 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 :**

6406531289251. ❌ What you want

6406531289252. ✓ What can I do for you?

6406531289253. ❌ What's the matter?

6406531289254. ❌ Why did you call?

**Question Number : 143 Question Id : 640653387798 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 :**

6406531289255. ❌ Will you

6406531289256. ✓ Could you please

6406531289257. ❌ Could you

6406531289258. ❌ Can you please

**Question Number : 144 Question Id : 640653387799 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 :**

6406531289259. ❌ Call after sometime

6406531289260. ❌ I will call you back

6406531289261. ✓ Please stay on the line

6406531289262. ❌ Can you call after some time?

**Question Number : 145 Question Id : 640653387800 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 :**

6406531289263. ❌ Will you

6406531289264. ✓ Would you

6406531289265. ❌ Could you

6406531289266. ❌ Do you

**Question Number : 146 Question Id : 640653387801 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 :**

6406531289267. ✓ Thank you

6406531289268. ❌ Bye

6406531289269. ❌ Okay

6406531289270. ❌ See you soon

## Sem2 Maths2

**Section Id :** 64065323952

**Section Number :** 7

**Section type :** Online

<b>Mandatory or Optional :</b>	Mandatory
<b>Number of Questions :</b>	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>	64065355634
<b>Question Shuffling Allowed :</b>	No

**Question Number : 147 Question Id : 640653387832 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 :**

6406531289386. ✓ YES

6406531289387. ✗ NO

<b>Sub-Section Number :</b>	2
<b>Sub-Section Id :</b>	64065355635
<b>Question Shuffling Allowed :</b>	Yes

**Question Number : 148 Question Id : 640653387836 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.  
6406531289390. ❌

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  $A^2x = b$ .  
6406531289391. ✓

If  $B$  is a scalar matrix of order 3, then  $AB - BA = 0$  for all square matrices  $A$  of order 3.  
6406531289392. ✓

If there is an invertible real  $3 \times 3$  matrix  $A$  such that  $A \text{ adj}(A) = 4I$ , then  $\det(\text{adj}(A))$  must be 4.  
6406531289393. ❌

**Sub-Section Number :** 3

**Sub-Section Id :** 64065355636

**Question Shuffling Allowed :** Yes

**Question Number : 149 Question Id : 640653387837 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 :** 640653387847 **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:

$$(x_1, y_1) + (x_2, y_2) = (x_1x_2, y_1y_2); (x_1, y_1), (x_2, y_2) \in V$$

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 :** 64065355637

**Question Shuffling Allowed :** No

**Question Id :** 640653387833 **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  $A = \begin{bmatrix} \frac{a}{2} & -\frac{a}{2} \\ \frac{a}{2} & \frac{a}{2} \end{bmatrix}$ , for some real number  $a$ .

Answer the given Subquestions:

**Sub questions**

**Question Number : 151 Question Id : 640653387834 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  $A^4 = \frac{\beta}{4}a^4I$ , 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 :**

-1

**Question Number : 152 Question Id : 640653387835 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 : 640653387838 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)  $W = \{(x, y, z) \mid x, y, z \in \mathbb{R}, \text{ and } x^2 + y^2 = 0\}$

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

Subset 3)  $W = \{(x, y, z) \mid x, y, z \in \mathbb{R}, x = 2y + z \text{ and } x + z = 2y\}$

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

Based on the above data, answer the given subquestions.

**Sub questions**

**Question Number : 153 Question Id : 640653387839 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 :** 640653387840 **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 :** 640653387841 **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 :** 640653387842 **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 :**

1

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355638

**Question Shuffling Allowed :** No

**Question Id :** 640653387843 **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:

$$W_1 = \{(x, y, x - 2y) \mid x, y \in \mathbb{R}\}$$

and

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

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 : 640653387844 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 :**

6406531289399. ✘  $Span\{(1, 0, 1), (1, 0, -1)\}$

6406531289400. ✓  $Span\{(1, 0, 1), (-2, 0, -2)\}$

6406531289401. ✓  $Span\{(-1, 0, -1)\}$

6406531289402. ✘  $Span\{(1, 1, -1), (1, 0, 1)\}$

**Question Number : 158 Question Id : 640653387845 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  $W_1 \cap W_2$  ?

**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 :**

1

**Question Number : 159 Question Id : 640653387846 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

6406531289404. ✘ multiplication).

$W_1 \cup W_2$  is a vector space of dimension 2  
(with usual addition and scalar

6406531289405. ✘ multiplication).

6406531289406. ✘

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

(with usual addition and scalar multiplication).

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

6406531289407. ✓

**Sub-Section Number :** 6

**Sub-Section Id :** 64065355639

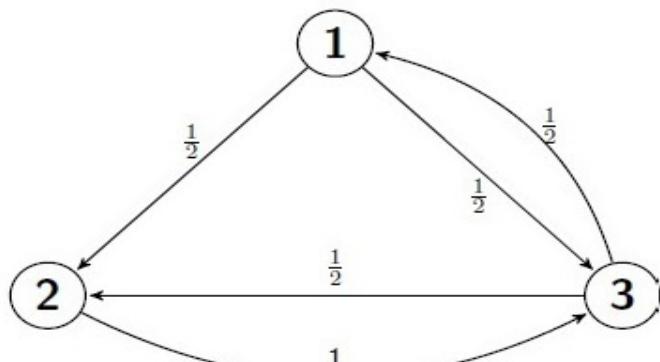
**Question Shuffling Allowed :** No

**Question Id : 640653387848 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 : 640653387849 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 :**

6406531289409. ✓  $X_0 = X_2$ .

6406531289410. ✓  $X_0 = X_1$ .

6406531289411. ✗  $X_0 \neq X_n$  for some  $n \in \mathbb{N}$ .

There are infinitely many vectors,

6406531289412. ✗ which are possible candidates for  $X_0$ .

There are infinitely many vectors,

6406531289413. ✗ which are possible candidates for  $X_1$ .

**Question Number : 161 Question Id : 640653387850 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 :**

6406531289414. ✘ The system had positive initial probabilities of being in State 1 or State 2.

6406531289415. ✓ The system was initially in State 3.

6406531289416. ✘ The system was initially in State 1.

6406531289417. ✘ The system had positive initial probabilities of being in State 2 and State 3.

**Question Number : 162 Question Id : 640653387851 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.

6406531289418. ✓

6406531289419. ✘  $P$  is already in reduced row echelon form.

6406531289420. ✘  $P^2 = \lambda P$  for some real number  $\lambda$ .

6406531289421. ✘  $P^2$  is already in reduced row echelon form.

## Sem2 Statistics2

<b>Section Id :</b>	64065323953
<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>	64065355640
<b>Question Shuffling Allowed :</b>	No

**Question Number : 163 Question Id : 640653387852 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 :**

6406531289422. ✓ YES

6406531289423. ✗ NO

**Question Number : 164 Question Id : 640653387853 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( $n, p$ )	$nC_k p^k (1-p)^{n-k},$ $k = 0, 1, \dots, n$	$\begin{cases} 0 & x < 0 \\ \sum_{i=0}^k nC_i p^i (1-p)^{n-i} & k \leq x < k+1 \\ & k = 0, 1, \dots, n \\ 1 & x \geq n \end{cases}$	$np$	$np(1-p)$
Geometric( $p$ )	$(1-p)^{k-1} p,$ $k = 1, \dots, \infty$	$\begin{cases} 0 & x < 0 \\ 1 - (1-p)^k & k \leq x < k+1 \\ & k = 1, \dots, \infty \end{cases}$	$\frac{1}{p}$	$\frac{1-p}{p^2}$
Poisson( $\lambda$ )	$\frac{e^{-\lambda} \lambda^k}{k!},$ $k = 0, 1, \dots, \infty$	$\begin{cases} 0 & x < 0 \\ e^{-\lambda} \sum_{i=0}^k \frac{\lambda^i}{i!} & k \leq x < k+1 \\ & k = 0, 1, \dots, \infty \end{cases}$	$\lambda$	$\lambda$

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( $\mu, \sigma^2$ )	$\frac{1}{\sigma\sqrt{2\pi}} \exp\left(\frac{-(x-\mu)^2}{2\sigma^2}\right),$ $-\infty < x < \infty$	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( $\alpha, \beta$ )	$\frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1} (1-x)^{\beta-1}$ $0 < x < 1$		$\frac{\alpha}{\alpha+\beta}$	$\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$

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 :**

6406531289424. ✓ Useful Data has been mentioned above.

6406531289425. ✖ This data attachment is just for a reference & not for an evaluation.

**Sub-Section Number :** 2

**Sub-Section Id :** 64065355641

**Question Shuffling Allowed :** Yes

**Question Number : 165 Question Id : 640653387857 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( $1/3$ ) random variables. Define another random variable  $Z = |X - Y|$ . Find the PMF of  $Z$ .

**Options :**

$z$	0	1
$f(z)$	$1/2$	$1/2$

6406531289432. ✖

$z$	0	1
$f(z)$	$5/9$	$4/9$

6406531289433. ✓

$z$	0	1
$f(z)$	$4/9$	$5/9$

6406531289434. ✖

$z$	-1	0	1
$f(z)$	$2/9$	$5/9$	$2/9$

6406531289435. ✖

**Question Number : 166 Question Id : 640653387859 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 20. Which of the following bounds can be obtained using Markov's inequality?

**Options :**

6406531289437. ❌  $P(X > 30) \geq \frac{20}{30}$

6406531289438. ✓  $P(X > 30) \leq \frac{20}{31}$

6406531289439. ❌  $P(X > 25) \geq \frac{20}{25}$

6406531289440. ❌  $P(X < 25) \leq \frac{20}{25}$

**Question Number : 167 Question Id : 640653387860 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 :**

6406531289441. ❌ The probability density function (PDF) of a continuous random variable  $X$  must be continuous.

6406531289442. ✓ The cumulative distribution function (CDF) of a continuous random variable  $X$  must be continuous.

6406531289443. ❌ The sum of two independent binomial random variables must be a binomial random variable.

6406531289444. ❌ For a random variable  $X$ , mean and variance cannot be equal.

**Sub-Section Number :**

**Sub-Section Id :**

64065355642

**Question Shuffling Allowed :**

Yes

**Question Number : 168 Question Id : 640653387858 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:

$\backslash$	$X$	0	1
$Y$			
0		$\frac{1}{12}$	$\frac{1}{3}$
1		0	$\frac{1}{4}$
2		$\frac{1}{6}$	$\frac{1}{6}$

Joint PMF of  $X$  and  $Y$

Calculate  $\text{Cov}(X, Y)$ . 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 :**

-0.15 to -0.05

**Sub-Section Number :**

4

**Sub-Section Id :**

64065355643

**Question Shuffling Allowed :**

No

**Question Id : 640653387854 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	$a$	$\frac{1}{3}$	$c$	$\frac{2}{3}$	
1	$\frac{1}{9}$	$b$	$d$	$\frac{1}{3}$	
$f_X(x)$	$\frac{1}{3}$	$\frac{1}{2}$	$\frac{1}{6}$	1	

Joint PMF of  $X$  and  $Y$

Based on the above data, answer the given subquestions.

### Sub questions

**Question Number : 169 Question Id : 640653387855 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 :**

6406531289426. ✘  $c = 1/9, d = 1/3.$

6406531289427. ✘  $c = 2/9, d = 1/6.$

6406531289428. ✘  $c = 2/9, d = 1/3.$

6406531289429. ✓  $c = 1/9, d = 1/18.$

**Question Number : 170 Question Id : 640653387856 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 :**

6406531289430. ✓ Yes

6406531289431. ✗ No

**Sub-Section Number :** 5

**Sub-Section Id :** 64065355644

**Question Shuffling Allowed :** No

**Question Id : 640653387861 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 : 640653387862 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 :

$X \backslash Y$	0	1	2
0	0	0	0
1	0	$1/4$	$1/4$
2	0	$1/4$	$1/4$

6406531289445. ✘

$X \backslash Y$	0	1	2
0	$1/4$	0	0
1	0	$1/2$	$1/4$
2	0	0	0

6406531289446. ✘

$X \backslash Y$	0	1	2
0	$1/4$	0	0
1	0	$1/4$	$1/4$
2	0	$1/4$	0

6406531289447. ✓

$X \backslash Y$	0	1	2
0	$1/4$	0	0
1	0	$1/4$	0
2	0	$1/4$	$1/4$

6406531289448. ✘

**Question Number : 172 Question Id : 640653387863 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  $P(Y \geq 1 | X = 1)$ .

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count : Yes**

**Answers Type : Equal**

**Text Areas : PlainText**

**Possible Answers :**

1

**Question Id : 640653387864 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 : 640653387865 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 :**

6406531289450. ✘  $F_X(k) = \left(\frac{k}{6}\right)^3$

6406531289451. ✘  $F_X(k) = \left(\frac{1}{6}\right)^3$

6406531289452. ✘  $F_X(k) = \left(\frac{k+1}{6}\right)^3$

6406531289453. ✓  $F_X(k) = \left(\frac{k}{6}\right)^3$

**Question Number : 174 Question Id : 640653387866 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  $P(X = 3)$ . Enter the answer correct to three decimal places.

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count : Yes**

**Answers Type : Range**

**Text Areas : PlainText**

**Possible Answers :**

0.085 to 0.089

**Question Id : 640653387867 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 1/5 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 : 640653387868 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 only one correct? 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 :**

0.30 to 0.34

**Question Number : 176 Question Id : 640653387869 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 three decimal places.

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Range

**Text Areas :** PlainText

**Possible Answers :**

0.081 to 0.084

**Question Id : 640653387870 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 : 640653387871 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 :**

6406531289457. ✗  $a = 3, b = 4$

6406531289458. ✓  $a = -3, b = 4$

6406531289459. ✗  $a = -3, b = 3$

6406531289460. ✗  $a = 4, b = 3$

**Question Number : 178 Question Id : 640653387872 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  $a, b$  given in the previous question, find  $P$

$\left( X \leq -\frac{1}{2} \mid X < 1 \right)$ . 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 :**

0.125

**Question Id : 640653387873 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

$$X = \begin{cases} 1, & \text{if the number is even} \\ 0, & \text{otherwise} \end{cases}$$

$$Y = \begin{cases} 1, & \text{if the number is prime} \\ 0, & \text{otherwise} \end{cases}$$

Based on the above data, answer the given subquestions.

### **Sub questions**

**Question Number : 179 Question Id : 640653387874 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 :**

0.15 to 0.18

**Question Number : 180 Question Id : 640653387875 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 three decimal places.

**Response Type : Numeric**

**Evaluation Required For SA : Yes**

**Show Word Count :** Yes

**Answers Type :** Range

**Text Areas :** PlainText

**Possible Answers :**

0.135 to 0.141