

|                                                 |           |
|-------------------------------------------------|-----------|
| Show Attended Group? :                          | No        |
| Edit Attended Group? :                          | No        |
| Break time :                                    | 0         |
| Group Marks :                                   | 1015      |
| Is this Group for Examiner? :                   | No        |
| Examiner permission :                           | Cant View |
| Show Progress Bar? :                            | No        |
| Revisit allowed for group Instructions? :       | Yes       |
| Maximum Instruction Time :                      | 0         |
| Minimum Instruction Time :                      | 0         |
| Group Time In :                                 | Minutes   |
| Navigate To Group Summary From Last Question? : | No        |
| Disable Submit Button During Assessment? :      | No        |
| Section Selection Time? :                       | 0         |
| No of Optional sections to be attempted :       | 0         |

## Sem1 CT

|                                                              |              |
|--------------------------------------------------------------|--------------|
| Section Id :                                                 | 64065364069  |
| Section Number :                                             | 1            |
| Section type :                                               | Online       |
| Mandatory or Optional :                                      | Mandatory    |
| Number of Questions :                                        | 18           |
| Number of Questions to be attempted :                        | 18           |
| Section Marks :                                              | 100          |
| Display Number Panel :                                       | Yes          |
| Section Negative Marks :                                     | 0            |
| Group All Questions :                                        | No           |
| Enable Mark as Answered Mark for Review and Clear Response : | No           |
| Maximum Instruction Time :                                   | 0            |
| Sub-Section Number :                                         | 1            |
| Sub-Section Id :                                             | 640653133642 |
| Question Shuffling Allowed :                                 | No           |

Question Number : 1 Question Id : 640653902274 Question Type : MCQ Calculator : Yes  
Correct Marks : 0

Question Label : Multiple Choice Question

**THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER I:  
COMPUTATIONAL THINKING (COMPUTER BASED EXAM)"**

**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 :**

6406533038953. ✓ YES

6406533038954. ✗ NO

**Question Number : 2 Question Id : 640653902275 Question Type : MCQ Calculator : Yes**

**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      | Malgudi 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   |      |
|                             |                            |                  |     |       |      | 567  |
|                             |                            |                  |     |       |      |      |
|                             |                            |                  |     |       |      |      |
| 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   |      |
|                             |                            |                  |     |       |      | 656  |
| 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   |      |
|                             |                            |                  |     |       |      | 1525 |

Options :

6406533038955. ✓ Useful Data has been mentioned above.

6406533038956. ✗ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number :

2

Sub-Section Id :

640653133643

Question Shuffling Allowed :

Yes

Question Number : 3 Question Id : 640653902276 Question Type : MCQ Calculator : Yes

**Correct Marks : 5**

Question Label : Multiple Choice Question

The given pseudocode is executed using the "Scores" dataset. What will the value of **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      while(Table 1 has more rows){
6          Read the first row Y in Table 1
7          Count = Count + DoSomething(X, Y)
8          Move Y to Table 3
9      }
10     Move all rows from Table 3 to Table 1
11 }
12
13 Procedure DoSomething(A, B)
14     if(A.Gender != B.Gender or A.TownCity == B.TownCity){
15         return(1)
16     }
17     else{
18         return(0)
19     }
20 End DoSomething
```

**Options :**

6406533038957. ✓ Number of pairs of students with different gender or same TownCity
6406533038958. ✗ Number of pairs of students with same gender or different TownCity
6406533038959. ✗ Number of pairs of students with the same gender and the same TownCity
6406533038960. ✗ The code will give an error due to incorrect return statements in lines 15 and 18

**Question Number : 4 Question Id : 640653902279 Question Type : MCQ Calculator : Yes**

**Correct Marks : 5**

Question Label : Multiple Choice Question

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

```
1  cityD = {}
2  while(Table 1 has more rows){
3      Read the first row X in Table 1
4      if(iskey(cityD, X.Town/City)){
5          if(iskey(cityD[X.Town/City], X.Gender)){
6              if(cityD[X.Town/City][X.Gender] > X.Physics){
7                  cityD[X.Town/City][X.Gender] = X.Physics
8              }
9          }
10         else{
11             cityD[X.Town/City][X.Gender] = X.Physics
12         }
13     }
14     else{
15         cityD[X.Town/City] = {}
16         cityD[X.Town/City][X.Gender] = X.Physics
17     }
18     Move X to Table 2
19 }
```

**Options :**

6406533038969. ✖ A dictionary with gender as key mapped to the Physics marks
6406533038970. ✖ A dictionary with gender as key mapped to the highest Physics marks scored by that gender in city **k**
6406533038971. ✔ A dictionary with gender as key mapped to the lowest Physics marks scored by that gender in city **k**
6406533038972. ✖ A dictionary with cities as keys mapped to the Physics marks

**Question Number : 5 Question Id : 640653902280 Question Type : MCQ Calculator : Yes**

**Correct Marks : 5**

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Scores" dataset. What will **first(D[i]) - last(D[i])** represent for a given key **i**?

```
1 D = {}
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     if(iskey(D, X.TownCity)){
5         if(first(D[X.TownCity]) < X.Mathematics){
6             D[X.TownCity] = [X.Mathematics, last(D[X.TownCity])]
7         }
8         if(last(D[X.TownCity]) > X.Mathematics){
9             D[X.TownCity] = [first(D[X.TownCity]), X.Mathematics]
10        }
11    }
12    else{
13        D[X.TownCity] = [X.Mathematics, X.Mathematics]
14    }
15    Move X to Table 2
16 }
```

**Options :**

6406533038973. ✓ The difference between highest and lowest Mathematics marks of the city **i**

6406533038974. ✗ The difference between overall highest and lowest Mathematics marks of the dataset

6406533038975. ✗ The difference between highest and second highest Mathematics marks of the city **i**

6406533038976. ✗ It will be always 0

**Sub-Section Number :**

3

**Sub-Section Id :**

640653133644

**Question Shuffling Allowed :**

Yes

**Question Number : 6 Question Id : 640653902277 Question Type : MCQ Calculator : Yes**

**Correct Marks : 4**

**Question Label : Multiple Choice Question**

Consider the following procedure, where **L1** and **L2** are two non-empty lists.

```
1 Procedure findSomething(L1, L2)
2   if(length(L1) != length(L2)){
3     return(False)
4   }
5   while(length(L1) > 0){
6     if(last(L1) != last(L2)){
7       return(False)
8     }
9     L1 = init(L1)
10    L2 = init(L2)
11  }
12  return(True)
13 End findSomething
```

When will **findSomething(L1, L2)** return True?

**Options :**

6406533038961. ✖ all the elements of both lists **L1** and **L2** are same but arranged in the reverse order.

6406533038962. ✔ all the elements of both lists **L1** and **L2** are same and are arranged in the same order.

6406533038963. ✖ all the elements of list **L1** are present in **L2** where **length(L2) > length(L1)**.

6406533038964. ✖ all the elements of list **L2** are present in **L1** where **length(L1) > length(L2)**.

**Sub-Section Number :**

4

**Sub-Section Id :**

640653133645

**Question Shuffling Allowed :**

Yes

**Question Number : 7 Question Id : 640653902278 Question Type : MCQ Calculator : Yes**

**Correct Marks : 6**

**Question Label : Multiple Choice Question**



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

```
1 wordCount = 0
2 while(Table 1 has more rows){
3   Read the first row X in Table 1
4   if(checksomething(X) == 1){
5     wordCount = wordCount + 1
6   }
7   Move X to Table 2
8 }
9
10 Procedure checksomething(Y)
11   i = 1, C = 0
12   A = False, B = False
13   while(i <= Y.LetterCount){
14     if(ith letter of Y.word is vowel){
15       if(A and not B){
16         C = 1
17       }
18       A = True, B = False
19     }
20     else{
21       if(not A and B){
22         C = 1
23       }
24       A = False, B = True
25     }
26     i = i + 1
27   }
28   return(C)
29 End checksomething
```

**Options :**

- 6406533038965. ✖ Number of words in which vowels occur consecutively
- 6406533038966. ✖ Number of words in which no two vowels occur consecutively
- 6406533038967. ✔ Number of words in which either vowels or consonants occur consecutively
- 6406533038968. ✖ Number of words in which no two vowels and no two consonants occur consecutively

**Sub-Section Number :**

5

**Sub-Section Id :**

640653133646

**Question Shuffling Allowed :**

Yes

**Question Number : 8 Question Id : 640653902281 Question Type : MSQ Calculator : Yes**

**Correct Marks : 4 Max. Selectable Options : 0**

**Question Label : Multiple Select Question**



Consider the following pseudocode. At the end of the execution of the following pseudocode, if **flag** has value True, then choose the possible values of list **L** from the given choices.

```
1 flag = False
2 position = 0
3 foreach element in L{
4     if((position == 1) and (element == 'x')){
5         flag = True
6     }
7     position = position + 1
8 }
```

**Options :**

6406533038977. ✖ ['z', 'y']

6406533038978. ✔ ['y', 'x', 'z']

6406533038979. ✖ ['x', 'y']

6406533038980. ✔ ['z', 'x', 'y']

**Sub-Section Number :**

6

**Sub-Section Id :**

640653133647

**Question Shuffling Allowed :**

Yes

**Question Number : 9 Question Id : 640653902282 Question Type : MSQ Calculator : Yes**

**Correct Marks : 5 Max. Selectable Options : 0**

**Question Label : Multiple Select Question**

Consider the procedure given below, where **aList** is a non-empty list of positive numbers.

```
1 procedure cumulative(aList)
2     sum = 0, cumuList = []
3     foreach element in aList{
4         sum = sum + element
5         cumuList = cumuList ++ [sum]
6     }
7     return(cumuList)
8 end cumulative
```

At the end of the execution, which of the following option(s) would be correct? It is a Multiple Select Question (MSQ).

**Options :**

6406533038981. ✔ The first element of both the lists, **cumuList** and **aList**, will be same.

6406533038982. ✖ Number of elements in **cumuList** will be one lesser than that of **aList**.

6406533038983. ✔ **cumuList** is a list of numbers in increasing order.

6406533038984. ✖ Number of elements in both lists, **cumuList** and **aList**, will be different.

|                                     |              |
|-------------------------------------|--------------|
| <b>Sub-Section Number :</b>         | 7            |
| <b>Sub-Section Id :</b>             | 640653133648 |
| <b>Question Shuffling Allowed :</b> | Yes          |

**Question Number : 10 Question Id : 640653902283 Question Type : MSQ Calculator : Yes**  
**Correct Marks : 6 Max. Selectable Options : 0**  
Question Label : Multiple Select Question

For the 'Words' dataset, consider a scenario where we want to find the number of sentences containing at least 10 distinct letters. We asked ChatGPT to generate the pseudocode for this task. Below are the two pseudocodes provided by ChatGPT.

**Pseudocode 1 :**

```
1  count = 0
2  L = []
3  while(Table 1 has more rows){
4      Read the first row x in Table 1
5      L = addsomething(L, x)
6      if(x.word ends with a full stop){
7          if(length(L) >= 10){
8              count = count + 1
9          }
10         L = []
11     }
12     Move x to Table 2
13 }
14
15 Procedure addsomething(M, Y)
16     i = 1
17     while(i <= Y.LetterCount){
18         p = ith letter of Y.word
19         if(not (member(M, p))){
20             M = M ++ [p]
21         }
22         i = i + 1
23     }
24     return(M)
25 End addsomething
```

**Pseudocode 2 :**

```
1  count = 0
2  L = []
3  while(Table 1 has more rows){
4      Read the first row x in Table 1
5      L = addsomething(L, x)
6      if(x.word ends with a full stop and length(L) >= 10){
7          count = count + 1
8          L = []
9      }
10     Move x to Table 2
11 }
12
13 Procedure addsomething(M, Y)
14     i = 1
15     while(i <= Y.LetterCount){
16         p = ith letter of Y.word
17         if(not (member(M, p))){
18             M = M ++ [p]
19         }
20         i = i + 1
21     }
22     return(M)
23 End addsomething
```

Which of the following statements is/are correct? It is a Multiple Select Question (MSQ).

**Options :**

6406533038985. ✖ Both **Pseudocode 1** and **Pseudocode 2** will give the same required output.
6406533038986. ✔ **Pseudocode 1** produces the desired output, while **Pseudocode 2** does not.
6406533038987. ✖ **Pseudocode 2** produces the desired output, while **Pseudocode 1** does not.

6406533038988. ✖ Both **Pseudocode 1** and **Pseudocode 2** will not give the required output.

6406533038989. ✖ For **Pseudocode 1**, if any sentence contains less than 10 distinct integers, List L will not be reinitialized to [].

6406533038990. ✔ For **Pseudocode 2**, if any sentence contains less than 10 distinct integers, List L will not be reinitialized to [].

**Question Number : 11 Question Id : 640653902284 Question Type : MSQ Calculator : Yes Correct Marks : 6 Max. Selectable Options : 0**

Question Label : Multiple Select Question

The following pseudocode is executed using the "Library" dataset. At the end of the execution, A stores a dictionary with the author's name as key and the number of books written by him/her as its value. But the code may have mistakes. Identify all such mistakes (if any). Assume that all statements not listed in the options below are free of errors.

```
1  A = {}
2  while(Table 1 has more rows){
3      Read the first row x from Table 1
4      if(not isKey(A, x.Author)){
5          A[x.Author] = A[x.Author] + 1
6      }
7      else{
8          A[x.Author] = 1
9      }
10     Move x to Table 2
11 }
```

**Options :**

Replacing the condition given in line 4 with the statement given below will provide the correct result.

1 | if(isKey(A, x.Author))

6406533038991. ✔

Replacing the statements given from line 4 to 9 with the statements given below will provide the correct result.

```
1  if(not isKey(A, x.Author)){
2      A[x.Author] = 0
3  }
4  A[x.Author] = A[x.Author] + 1
```

6406533038992. ✔

6406533038993. ✓ Interchanging Line 5 and 8 will provide the correct result.

Replacing the statements given from line 4 to 9 with the statements given below will provide the correct result.

```
1  if(not isKey(A, x.Author)){  
2      A[x.Author] = 0  
3  }  
4  else{  
5      A[x.Author] = A[x.Author] + 1  
6  }  
7
```

6406533038994. ✖

**Question Number : 12 Question Id : 640653902285 Question Type : MSQ Calculator : Yes**

**Correct Marks : 6 Max. Selectable Options : 0**

Question Label : Multiple Select Question



The given pseudocode is executed using the "Words" dataset. At the end of execution **A** captures the frequency count of the most frequent vowel in the dataset. 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  D = { }, A = 0
2  while(Table 1 has more rows){
3      Read the first row X in Table 1
4      D = updateDictionary(D, X)
5      Move X to Table 2
6  }
7  foreach c in keys(D){
8      if(C is a vowel and D[C] < A){
9          A = D[C]
10     }
11 }
12 Procedure updateDictionary(D, Y)
13     i = 1
14     while(i ≤ Y.LetterCount){
15         B = ith letter in Y.word
16         if(not isKey(D, B)){
17             D[B] = D[B] + 1
18         }
19         else{
20             D[B] = 1
21         }
22         i = i + 1
23     }
24     return(D)
25 End updateDictionary
```

### Options :

6406533038995. ✖ Line 1: Incorrect initialization of **D**

6406533038996. ✔ Line 8: Incorrect conditional expression

6406533038997. ✖ Line 9: **A** updated with wrong value

6406533038998. ✖ Line 13: Incorrect initialization of **i**

6406533038999. ✔ Line 16: Conditional expression should not use "not" operator

6406533039000. ✖ Line 22: **i** updated at wrong place

**Sub-Section Id :**

640653133649

**Question Shuffling Allowed :**

Yes

**Question Number : 13 Question Id : 640653902286 Question Type : SA Calculator : None**

**Correct Marks : 5**

Question Label : Short Answer Question

What will the value of **S** be at the end of the execution of the following pseudocode?

```
1  L1 = [1, -1, 5]
2  L2 = [3, 1, 2]
3  S = doSomething(L1, L2) - doSomething(L2, L1)
4
5  Procedure doSomething(X, Y)
6      if(length(X) != length(Y)){
7          return(0)
8      }
9      if(length(X) == 1 and length(Y) == 1){
10         return(first(X) * first(Y))
11     }
12     return(first(X) * last(Y) + doSomething(rest(X), init(Y)))
13 End doSomething
```

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

0

**Question Number : 14 Question Id : 640653902287 Question Type : SA Calculator : None**

**Correct Marks : 5**

Question Label : Short Answer Question



The given pseudocode is executed using a dataset having the same fields as the "Words" dataset, and contains the following words:

"I ordered this product from Gitark. I am very happy to share my review regarding this awesome product. It is not only nice to use, but also has a very cool look. I think this is the best and the most awesome product which can be bought in this price range."

Consider the following information:

1. **unique(L)** returns a list of unique elements of list **L**. For example **unique(["think", "like", "toppers", "think"])** will return **["think", "like", "toppers"]**.
2. **comNo(L1, L2)** returns the number of common elements in lists **L1** and **L2**.
3. Ignore the upper and lower case, and punctuation symbols while comparing with other words.

```
1  positiveList = ["happy", "awesome", "nice", "fine", "best", "cool"]
2  posSen = 0, L = []
3  while(Table 1 has more rows){
4      Read the first row X in Table 1
5      L = L ++ [X.Word]
6      if(X.Word ends with full stop){
7          L = unique(L)
8          posCount = comNo(positiveList, L)
9          if(posCount >= 2){
10             posSen = posSen + 1
11         }
12         L = []
13     }
14     Move X to Table 2
15 }
```

What will the value of **posSen** be at the end of the execution of the above pseudocode?

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal

**Text Areas :** PlainText

**Possible Answers :**

3

**Sub-Section Number :** 9

**Sub-Section Id :** 640653133650

**Question Shuffling Allowed :** No

**Question Id :** 640653902288 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Question Pattern Type :** NonMatrix **Calculator :** None

### Question Numbers : (15 to 16)

Question Label : Comprehension

Let **a** and **b** be positive integers. Procedure **remainder(a, b)** returns remainder if **a** is divided by **b**.

```
1  Procedure dosomething(x)
2      j = 2, Flag = True
3      if(x == 1){
4          return(False)
5      }
6      while(j < x){
7          if(remainder(x, j) == 0){
8              Flag = False
9              exitloop
10         }
11         j = j + 1
12     }
13     return(Flag)
14 End dosomething
```

Based on the above data, answer the given subquestions.

### Sub questions

Question Number : 15 Question Id : 640653902289 Question Type : MCQ Calculator : Yes

Correct Marks : 4

Question Label : Multiple Choice Question

When will procedure **doSomething(X)** return True?

Options :

6406533039003. ✓ **X** is a prime number

6406533039004. ✗ **X** is an even number

6406533039005. ✗ **X** is an odd number

6406533039006. ✗ **X** is more than 1

Question Number : 16 Question Id : 640653902290 Question Type : MCQ Calculator : Yes

Correct Marks : 5

Question Label : Multiple Choice Question

Consider the procedure discussed above. What will the value of **M** be at the end of the execution of the given pseudocode below?

```
1  L = [8, 12, 13, 23, 11, 40]
2  M = []
3  position = 1
4  foreach element in L{
5      if(dosomething(position) and dosomething(element)){
6          M = M ++ [element]
7      }
8      position = position + 1
9  }
```

**Options :**

6406533039007. ✓ **M** = [13, 11]

6406533039008. ✗ **M** = [13, 23, 11]

6406533039009. ✗ **M** = [11, 23]

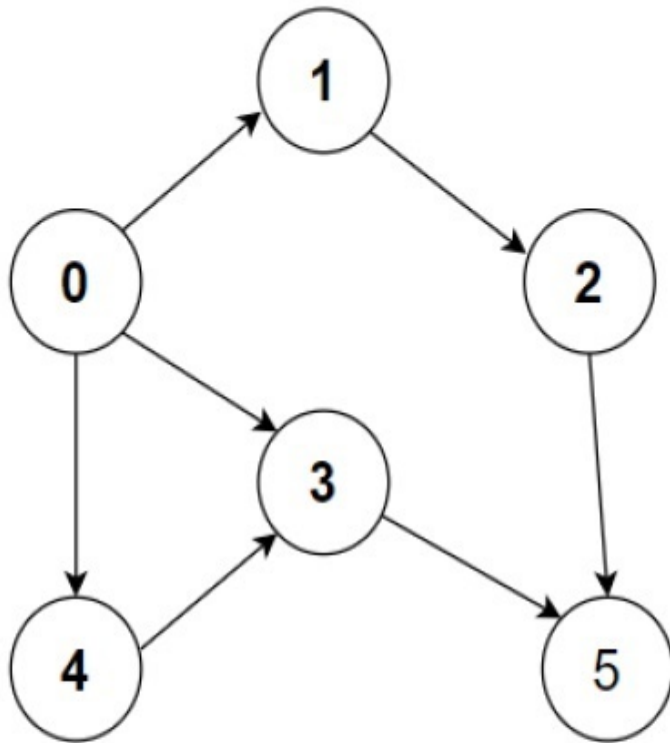
6406533039010. ✗ **M** = [13, 23]

**Question Id : 640653902297 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None**

**Question Numbers : (17 to 18)**

**Question Label : Comprehension**

Let **M** be the adjacency matrix of the graph **G** as shown below and consider the procedure **Dosomething** given below.



```
1 Procedure Dosomething(M, q)
2   count = 0
3   foreach i in rows(M){
4     if(M[i][q] == 1 or M[q][i] == 1){
5       count = count + 1
6     }
7   }
8   return(count)
9 End Dosomething
```

Based on the above data, answer the given subquestions.

### Sub questions

**Question Number : 17 Question Id : 640653902298 Question Type : SA Calculator : None Correct Marks : 5**

Question Label : Short Answer Question

What will the value of **B** be at the end of the execution of the pseudocode given below?

```
1 B = Dosomething(M, 3)
```

**Response Type :** Numeric

**Evaluation Required For SA :** Yes

**Show Word Count :** Yes

**Answers Type :** Equal  
**Text Areas :** PlainText  
**Possible Answers :**

3

**Question Number :** 18 **Question Id :** 640653902299 **Question Type :** SA **Calculator :** None  
**Correct Marks :** 4

**Question Label :** Short Answer Question

What will the value of **B** be at the end of execution of pseudocode given below?

```
1 | B = Dosomething(M, 4)
```

**Response Type :** Numeric  
**Evaluation Required For SA :** Yes  
**Show Word Count :** Yes

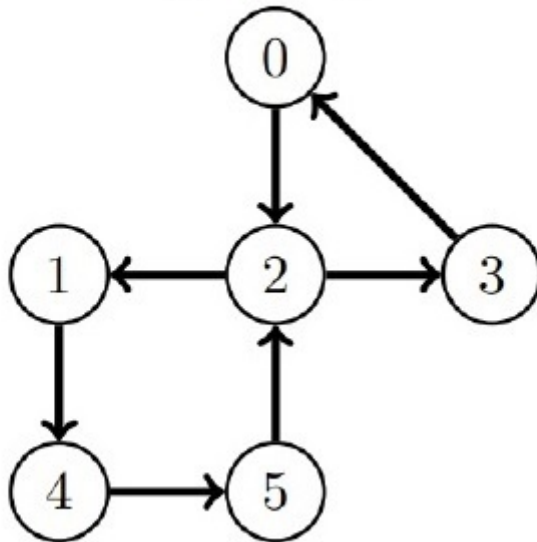
**Answers Type :** Equal  
**Text Areas :** PlainText  
**Possible Answers :**

2

**Sub-Section Number :** 10  
**Sub-Section Id :** 640653133651  
**Question Shuffling Allowed :** No

**Question Id :** 640653902291 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Question Pattern Type :** NonMatrix **Calculator :** None  
**Question Numbers :** (19 to 20)  
**Question Label :** Comprehension

Let  $M$  be an adjacency matrix of a graph  $G$  given below, where  $M[i][j] = 1$  if there is an edge from  $i$  to  $j$ , otherwise 0.



```
1  Procedure updateMatrix(M)
2      tempMat = M
3      foreach i in rows(M){
4          foreach k in columns(M){
5              if(M[i][k] == 1){
6                  foreach j in columns(M){
7                      if(M[k][j] == 1){
8                          tempMat[i][j] = 1
9                      }
10                 }
11             }
12         }
13     }
14     return(tempMat)
15 End updateMatrix
```

Based on above information, answer the given subquestions

### Sub questions

**Question Number : 19 Question Id : 640653902292 Question Type : MCQ Calculator : Yes Correct Marks : 5**

Question Label : Multiple Choice Question

What will the values of  $p$  and  $q$  be at the end of execution of pseudocode given below?

```
1  newMatrix = updateMatrix(M)
2  p = newMatrix[0][3]
3  q = newMatrix[3][4]
```

**Options :**

6406533039011. ✖  $p = 0, q = 0$



6406533039012. ✓  $p = 1, q = 0$

6406533039013. ✗  $p = 0, q = 1$

6406533039014. ✗  $p = 1, q = 1$

**Question Number : 20 Question Id : 640653902293 Question Type : MCQ Calculator : Yes**

**Correct Marks : 5**

Question Label : Multiple Choice Question

What will the values of  $p$  and  $q$  be at the end of execution of pseudocode given below?

```
1 newMatrix1 = updateMatrix(M)
2 newMatrix2 = updateMatrix(newMatrix1)
3 p = newMatrix2[0][3]
4 q = newMatrix2[3][4]
```

**Options :**

6406533039015. ✗  $p = 0, q = 0$

6406533039016. ✗  $p = 1, q = 0$

6406533039017. ✗  $p = 0, q = 1$

6406533039018. ✓  $p = 1, q = 1$

**Question Id : 640653902294 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None**

**Question Numbers : (21 to 22)**

Question Label : Comprehension

The following pseudocode constructs a graph  $G$  using the "Scores" dataset, represented by the adjacency matrix  $B$ . Let  $A$  be a dictionary with sequence numbers of students as keys mapped to their total marks.

```
1 n = length(keys(A))
2 B = createMatrix(n, n)
3
4 foreach i in keys(A){
5     foreach j in keys(A){
6         if(A[i] > A[j]){
7             B[i][j] = 1
8         }
9     }
10 }
```

Based on the above data, answer the given subquestions.

**Sub questions**

**Question Number : 21 Question Id : 640653902295 Question Type : MSQ Calculator : Yes**

**Correct Marks : 5 Max. Selectable Options : 0**

Question Label : Multiple Select Question

Choose the correct option(s) with respect to the graph G.

**Options :**

6406533039019. ✓ G is always acyclic.

6406533039020. ✗ If  $B[i][j] = 1$  then  $B[j][i] = 1$ , for any  $i, j$

6406533039021. ✓ If  $B[i][j] = 1$  then  $B[j][i] = 0$ , for any  $i, j$

6406533039022. ✗ If  $B[i][j] = 0$  then  $B[j][i] = 1$ , for any  $i, j$

**Question Number : 22 Question Id : 640653902296 Question Type : MCQ Calculator : Yes**

**Correct Marks : 5**

Question Label : Multiple Choice Question

When will the procedure **checkSomething(B, i)** return True?

```
1 Procedure checkSomething(B, i)
2   foreach j in columns(B){
3     if((i != j) and (B[i][j] == 0)){
4       return(False)
5     }
6   }
7   return (True)
8 End checkSomething
```

**Options :**

6406533039023. ✗ If student **i** has scored greater total marks than at least one student

6406533039024. ✗ If student **i** has scored less total marks than at least one student

6406533039025. ✗ If student **i** has scored lowest total marks among all students

6406533039026. ✓ If student **i** has scored highest total marks among all students

## Sem2 Intro to python

**Section Id :**

64065364070

**Section Number :**

2

**Section type :**

Online

**Mandatory or Optional :**

Mandatory