Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Group I

Group Number :	1
Group Id :	64065316260
Group Maximum Duration :	0
Group Minimum Duration :	90
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	995
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 :	64065349230

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 :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	640653103017
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 640653696592 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: 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 :

6406532326907. ✔ YES

6406532326908. ✖ NO

Question Number : 2 Question Id : 640653696593 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

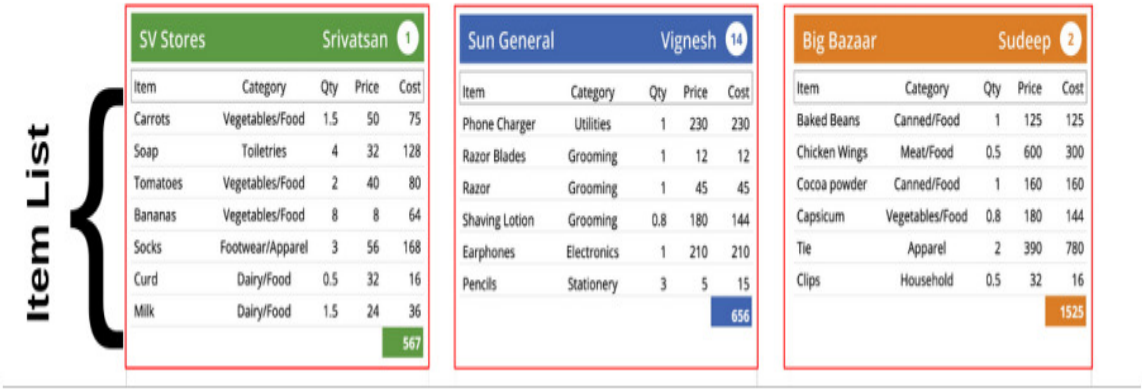
Library

SeqNo	Name	Author	Genre	Language	Pages	Publisher	Year
0	Igniting Minds	Kalam	Nonfiction	English	178	Penguin	2002
■ ■ ■							
29	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



Options :

6406532326909. ✔ Useful Data has been mentioned above.

6406532326910. ✖ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 640653103018

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 3 Question Id : 640653696595 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Words" dataset. Assume there are more than five sentences in the "Words" dataset.

```
A = 0, sNum = 0
while(Table 1 has more rows and sNum < 5){
    Read the first row X in Table 1
    if(X.PartOfSpeech == "Verb"){
        **********************
        *** Fill the code ***
        **********************
    }
    if(X.Word ends with a full stop){
        sNum = sNum + 1
    }
    Move X to Table 2
}
```

If **A** represents the letter count of the longest verb in the first five sentences, then **fill the code** with the correct code fragment below.

Options :

6406532326915. ✔

```
if(X.LetterCount > A){
    A = X.LetterCount
}
```

6406532326916. ✖

```
if(X.LetterCount > A){
    A = A + X.LetterCount
}
```

6406532326917. ✖

```
if(X.LetterCount > A){
    A = X.LetterCount
    sNum = sNum + 1
}
```

6406532326918. ✖

```
if(X.LetterCount > A){
    A = A + X.LetterCount
    sNum = sNum + 1
}
```

Sub-Section Number : 3

Sub-Section Id : 640653103019

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 4 Question Id : 640653696594 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Scores" dataset.

```
count = 0
while(Table 1 has more rows){
    A = 0, B = 0, C = 0
    Read the first row X in Table 1
    if(X.Gender == 'M'){
        A = 1
    }
    else {
        A = -1
    }
    if(X.CityTown == "Chennai"){
        B = 1
    }
    C = A + B
    if(***Statement I***){
        count = count + 1
    }
    Move X to Table 2
}
```

Match the following for different expressions of **Statement I** with the appropriate **Value of count**.

	Statement I		Value of count
(i)	C < 0	p	Number of male students from Chennai
(ii)	C == 1	q	Number of female students who are not from Chennai
(iii)	C > 1	r	Number of male students who are not from Chennai
(iv)	C == 0	s	Number of female students who are from Chennai

Options :

6406532326911. ✖ (i) - r, (ii) - p, (iii) - s,(iv)- q

6406532326912. ✖ (i) - q, (ii) - r, (iii) - s, (iv)- p

6406532326913. ✖ (i) - q, (ii) - p, (iii) - r, (iv)- s

6406532326914. ✔ (i) - q, (ii) - r, (iii) - p, (iv)- s

Question Number : 5 Question Id : 640653696599 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

Which of the following pseudocodes when executed using the “Words” dataset, the **count** will give a number of verbs which have at least one noun adjacent to it?

Options :

6406532326927. ✖

```
count = 0
vList = [], nList = []
while(Table 1 has more rows){
    Read the first row X in Table 1
    if(X.PartOfSpeech == "Noun"){
        nList = nList ++ [X.SeqNo]
    }
    if(X.PartOfSpeech == "Verb"){
        vList = vList ++ [X.SeqNo]
    }
    Move X to Table 2
}
foreach i in nList{
    if(member(vList, i-1) or member(vList, i+1)){
        count = count + 1
    }
}
```

6406532326928. ✖

```
count = 0
vList = [], nList = []
while(Table 1 has more rows){
    Read the first row X in Table 1
    if(X.PartOfSpeech == "Noun"){
        nList = nList ++ [X.SeqNo]
    }
    if(X.PartOfSpeech == "Verb"){
        vList = vList ++ [X.SeqNo]
    }
    Move X to Table 2
}
foreach i in nList{
    if(member(vList, i) or member(vList, i)){
        count = count + 1
    }
}
```

```
count = 0
vList = [], nList = []
while(Table 1 has more rows){
    Read the first row X in Table 1
    if(X.PartOfSpeech == "Noun"){
        nList = nList ++ [X.SeqNo]
    }
    if(X.PartOfSpeech == "Verb"){
        vList = vList ++ [X.SeqNo]
    }
    Move X to Table 2
}
foreach i in vList{
    if(member(nList, i-1) or member(nList, i+1)){
        count = count + 1
    }
}
```

6406532326929. ✔

6406532326930. ✖

```
count = 0
vList = [], nList = []
while(Table 1 has more rows){
    Read the first row X in Table 1
    if(X.PartOfSpeech == "Noun"){
        nList = nList ++ [X.SeqNo]
    }
    if(X.PartOfSpeech == "Verb"){
        vList = vList ++ [X.SeqNo]
    }
    Move X to Table 2
}
foreach i in vList{
    if(member(nList, i-1) and member(nList, i+1)){
        count = count + 1
    }
}
```

Question Number : 6 Question Id : 640653696603 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

The following pseudocode is executed using the “Shopping Bills” dataset. The variable **count** gives the number of bills which are either from Big Bazaar or have a total bill amount of less than Rs. 500, but not both. Choose the correct code fragment to complete the pseudocode.

```
count = 0
while(Table 1 has more rows){
    Read the first row X in Table 1
    if(checkValue(X)){
        count = count + 1
    }
    Move X to Table 2
}

Procedure checkValue(Y)
    A = False, B = False
    if(Y.ShopName == "BigBazaar"){
        A = True
    }
    if(Y.TotalBillAmount < 500){
        B = True
    }
    ************************
    *** Fill the code   ***
    ************************
End checkValue
```

Options :

6406532326939. ✖

```
if(A and B){
    return(True)
}
else{
    return(False)
}
```

6406532326940. ✖

```
if(A or B){
    return(True)
}
else{
    return(False)
}
```

6406532326941. ✖

```
if(not(A and B) or (A or B)){
    return(True)
}
else{
    return(False)
}
```

```
if(not(A and B) and (A or B)){
    return(True)
}
else{
    return(False)
}
```

6406532326942. ✔

Question Number : 7 Question Id : 640653696610 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

What does the given procedure **calculate(a, b)** return for **a** = 24 and **b** = 12?

```
Procedure calculate(a, b){
    sub = 0
    if(a < b){
        return(calculate(b, a))
    }
    if(a == b){
        return(b)
    }
    sub = a - b
    return(calculate(b, sub))
}
End calculate
```

Options :

6406532326963. ✖ 1

6406532326964. ✖ 3

6406532326965. ✔ 12

6406532326966. ✖ 15

Question Number : 8 Question Id : 640653696617 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

flights is a dictionary with flight number as key mapped to a list of airports that the flight travels through. For example, **flights** = {101: ["Bengaluru", "Howrah", "Guwahati"],.....}. In this example, the flight with flight number 101 starts from Bengaluru and reaches Guwahati via Howrah. Note: Assume that the flights numbers are less than or equal to 1000

What will **L** store at the end of the execution of pseudocode?

```
airports = { }, N = 1000, L = []
foreach X in keys(flights){
    airports = updateDictionary(airports, X)
}

foreach Y in keys(airports){
    if(airports[Y] == N){
        L = L ++ [Y]
    }
    if(airports[Y] < N){
        L = [Y]
        N = airports[Y]
    }
}

Procedure updateDictionary(D, Z)
    foreach A in flights[Z]{
        if(not isKey(D, A)){
            D[A] = 0
        }
        D[A] = D[A] + 1
    }
    return(D)
End updateDictionary
```

Options :

6406532326989. ✖ List of airports through which maximum number of flights pass

6406532326990. ✔ List of airports through which minimum number of flights pass

6406532326991. ✖ List of flights that pass through a maximum number of airports

6406532326992. ✖ List of flights that pass through a minimum number of airports

Sub-Section Number : 4

Sub-Section Id : 640653103020

Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 9 Question Id : 640653696608 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

The following table contains information regarding items from the "Shopping Bills" dataset. Each entry in the table corresponds to an item and the list of customers who have purchased it. For an item to have entry in the table there should be at least three customers who have purchased it. There are **n** customers and each customer is assigned to a unique index between 0 and **n**−1. There are **M** items in the table.

Seq.No	Customer List
0	[3, 7, 9]
...	...
M-1	[0, 3, 5, 9]

The table is represented by a dictionary named **items**, with the keys as **Seq.No.** and values as the corresponding list of customers. Assume that **items** have already been computed. For example, we have: **items**[0] = [3, 7, 9].

For two different customers **x** and **y**, what does the value **A[x][y]** represent at the end of the execution?

```
A = createMatrix(n, n)
foreach j in rows(A){
    foreach k in columns(A){
        A[j][k] = [ ]
    }
}
foreach i in keys(items){
    foreach j in items[i]{
        foreach k in items[i]{
            foreach h in items[i]{
                if(j != k and j != h and k != h and not member(A[j][k], h)){
                    A[j][k] = A[j][k] ++ [h]
                    A[k][j] = A[k][j] ++ [h]
                }
            }
        }
    }
}
```

Options :

6406532326955. ✔ List of customers who purchased an item other than what both customers **x** and **y** purchased.

6406532326956. ✖ List of customers who purchased exactly the same item(s), which was purchased by either customer **x** or customer **y**

6406532326957. ✖ List of customers who bought at least one item in common with both customer **x** and customer **y**

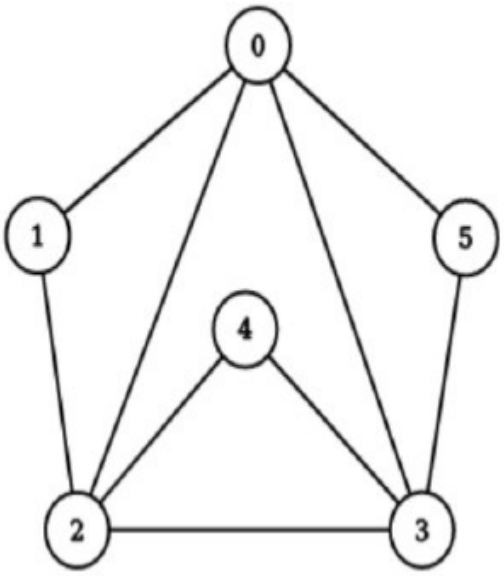
6406532326958. ✖ List of customers who purchased at least one item, which was purchased by either customer **x** or customer **y**

Question Number : 10 Question Id : 640653696611 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the following graph with six nodes. **M** is a 6 × 6 adjacency matrix corresponding to this graph. Assume that **M** has already been computed.



What will the value of **L** be after executing the following pseudocode?

```
D = {}
L = []
D[2] = -1
D, L = exploreGraph(M, D, L, 2)

Procedure exploreGraph(graph, P, S, i)
    S = S ++ [i]
    foreach j in columns(graph) {
        if(graph[i][j] == 1 and not(isKey(P, j))){
            P[j] = i
            P, S = exploreGraph(graph, P, S, j)
        }
    }
    return (P, S)
End exploreGraph
```

Options :

6406532326967. ✖ **L**= [2, 1, 0, 5, 3, 4]

6406532326968. ✖ **L**= [2, 1, 0, 4, 5, 3]

6406532326969. ✔ **L**= [2, 0, 1, 3, 4, 5]

6406532326970. ✖ **L**= [2, 0, 1, 3, 5, 4]

Question Number : 11 Question Id : 640653696615 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Shopping Bills" dataset. At the end of the execution, the dictionary **D** captures the following information: for each category **i**, **D[i][j]** stores the list of prices of item **j** across all bills. Choose the correct code fragment to complete the pseudocode.

```
D = {}
while (Pile 1 has more cards){
    Read the top card X in Pile 1
    foreach a in X.ItemList{
        if(isKey(D, a.Category)){
            if(isKey(D[a.Category], a.ItemName)){
                *** Statement I ***
            }
            else{
                D[a.Category][a.ItemName] = [a.Price]
            }
        }
        else{
            D[a.Category] = { }
            *** Statement II ***
        }
    }
    Move card X to Pile 2
}
```

Options :

6406532326979. ✖ Statement I: **D**[a.Category][a.ItemName] = [a.Price]
Statement II: **D**[a.Category][a.ItemName] = [a.Price]

6406532326980. ✖ Statement I: **D**[a.Category][a.ItemName] = [a.Price]
Statement II: **D**[a.Category][a.ItemName] = **D**[a.Category][a.ItemName] ++ [a.Price]

6406532326981. ✔ Statement I: **D**[a.Category][a.ItemName] = **D**[a.Category][a.ItemName] ++ [a.Price]
Statement II: **D**[a.Category][a.ItemName] = [a.Price]

6406532326982. ✖

Statement I: **D**[a.Category][a.ItemName] = **D**[a.Category][a.ItemName] ++ [a.Price]

Statement II: **D**[a.Category][a.ItemName] = **D**[a.Category][a.ItemName] ++ [a.Price]

Sub-Section Number :	5
Sub-Section Id :	640653103021
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 12 Question Id : 640653696604 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 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 the 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 statements given in lines 5 and 8 with the two statements given below will provide the correct result.

```
1  Line 5:     A[X.Author] = 1
2  Line 8:     A[X.Author] = A[X.Author] + 1
```

6406532326943. ✔

Replacing the statements given from lines 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
```

6406532326944. ✔

Interchanging lines5,8 and changing the line 8 statement given below will provide the correct result.

```
1 Line 8: A[X.Author] = A[X.Author] + 1
```

6406532326945. ✔

Replacing the statements given from lines 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
```

6406532326946. ✖

Sub-Section Number :	6
Sub-Section Id :	640653103022
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 13 Question Id : 640653696609 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6 Max. Selectable Options : 0

Question Label : Multiple Select Question

findSomething is a procedure that accepts a non-empty list of distinct integers **L** as input and finds the smallest integer present in the input list. Choose the correct code fragment to complete the pseudocode.

```
Procedure findSomething(L)
    if(length(L) == 1){
        return(first(L))
    }
    else{
        **********************
        *** Fill the code ***
        **********************
    }
End findSomething
```

Options :

6406532326959. ✔

```
if(first(L) < last(L)){
    return(findSomething(init(L)))
}
else{
    return(findSomething(rest(L)))
}
```

6406532326960. ✖

```
if(first(L) > last(L)){
    return(findSomething(init(L)))
}
else{
    return(findSomething(rest(L)))
}
```

6406532326961. ✔

```
if(first(L) > last(L)){
    return(findSomething(rest(L)))
}
else{
    return(findSomething(init(L)))
}
```

6406532326962. ✖

```
if(first(L) < last(L)){
    return(findSomething(rest(L)))
}
else{
    return(findSomething(init(L)))
}
```

Question Number : 14 Question Id : 640653696616 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

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 letter 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.

```
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(D[C] > A){
9          A = D[C] ++ A
10     }
11 }
12 Procedure updateDictionary(D, Y)
13     i = 1
14     while(i ≤ Y.LetterCount){
15         B = ith letter in Y.Word
16         if(isKey(D, B)){
17             D[B] = D[B] + 1
18         }
19         else{
20             D[B] = 1
21         }
22     }
23     i = i + 1
24     return(D)
25 End updateDictionary
```

Options :

6406532326983. ✖ Line 1: Incorrect initialization of **D**

6406532326984. ✖ Line 8: Incorrect conditional expression

6406532326985. ✔ Line 9: **A** updated with wrong value

6406532326986. ✖ Line 13: Incorrect initialization of **i**

6406532326987. ✖ Line 16: Incorrect expression

6406532326988. ✔ Line 23: **i** updated at wrong place

Sub-Section Number :	7
Sub-Section Id :	640653103023
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653696596 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (15 to 16)

Question Label : Comprehension

The following pseudocode is executed using the "Scores" dataset.

```
A = 0, B = 0
while(Table 1 has more rows){
    Read the first row X in Table 1
    Flag = False
    if(X.Gender == 'M' and X.Physics > 90){
        Flag = True
    }
    else{
        Flag = False
    }
    if(not Flag){
        if(X.Chemistry > 90){
            B = B + 1
        }
    }
    else{
        A = A + 1
    }
    Move X to Table 2
}
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 15 Question Id : 640653696597 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 **A** represent at the end of the execution?

Options :

6406532326919.

✖ Number of students who have scored less than 90 marks in Physics

6406532326920. ✖ Number of female students who have scored more than 90 marks in Chemistry

6406532326921. ✖ Number of female students

6406532326922. ✔ Number of male students who have scored more than 90 marks in Physics

Question Number : 16 Question Id : 640653696598 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the below numbers that **B** represent at the end of the execution?

Options :

6406532326923. ✖ Number of male students who have scored more than 90 marks in both Physics and chemistry

6406532326924. ✔ Number of male students who have scored less than 90 marks in Physics and more than 90 marks in chemistry

6406532326925. ✖ Number of female students who have scored less than 90 marks in both Physics and Chemistry

6406532326926. ✔ Number of female students who have scored more than 90 marks in Chemistry

Question Id : 640653696605 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (17 to 18)

Question Label : Comprehension

The following pseudocode is executed using the “Shopping Bills” dataset. Assume each customer has a distinct name.

```
A = 1, N = 1000, count = 0
while(Table 1 has more rows){
    Read the first row X in Table 1
    Move X to Table 2
    while(Table 1 has more rows){
        Read the first row Y in Table 1
        if(X.CustomerName == Y.CustomerName){
            A = A + 1
            Move Y to Table 2
        }
        else{
            Move Y to Table 3
        }
    }
    if(A < N){
        N = A
    }
    A = 1
    count = count + 1
    Move all rows from Table 3 to Table 1
}
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 17 Question Id : 640653696606 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 **N** represent at the end of the execution?

Options :

6406532326947. ✔ Minimum number of bills issued to a single customer

6406532326948. ✖ Minimum number of bills issued to a single customer from the same shop

6406532326949. ✖ Minimum number of customers who purchased items from the same shop

6406532326950. ✖ Maximum number of customers who purchased items from the same shop

Question Number : 18 Question Id : 640653696607 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 **count** represent at the end of the execution?

Options :

6406532326951. ✖ Total number of bills

6406532326952. ✔ Total number of customers

6406532326953. ✖ Number of customers who have the minimum number of bills

6406532326954. ✖ Number of customers who have the maximum number of bills

Sub-Section Number :	8
Sub-Section Id :	640653103024
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653696600 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (19 to 20)

Question Label : Comprehension

The following pseudocode constructs a matrix **M** from the “Shopping Bills” dataset. Two bills are said to be similar if the difference in their total bill amount is at most 100. Procedure **abs(a)** returns the absolute value of input integer **a**. For example: **abs(5)** = 5, **abs(-5)** = 5.

```
D = {}
while(Table 1 has more rows){
    Read the first row X in Table 1
    D[X.SeqNo] = [X.Name, X.Total]
    Move X to Table 2
}

n = length(keys(D))
M = createMatrix(n, n)
foreach i in keys(D){
    foreach j in keys(D){
        if(i != j and abs(last(D[i]) - last(D[j]) <= 100){
            M[i][j] = 1
            if(first(D[i]) == first(D[j]){
                M[i][j] = M[i][j] + 1
            }
        }
    }
}
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 19 Question Id : 640653696601 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let **i** and **j** be the sequence numbers of two similar bills, where **i** != **j**. Which of the following statement(s) is/are true about **M[i][j]**?

Options :

6406532326931. ✔ The maximum value of **M[i][j]** can be 2.

6406532326932. ✖ If **M[i][j]** = 1, then both the bills have the same customer name

6406532326933. ✔ If **M[i][j]** = 1, then both the bills have different customer names

6406532326934. ✖ M[i][j] can be more than 2 if both the bills have the same customer names

Question Number : 20 Question Id : 640653696602 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the correct statement(s) based on the given pseudocode.

Options :

6406532326935. ✖ For i != j, if M[i][j] = 0 then M[j][i] = 1

6406532326936. ✔ For i != j, if M[i][j] = 1 then M[j][i] = 1

6406532326937. ✖ For i != j, if M[i][j] = 1 then M[j][i] = 0

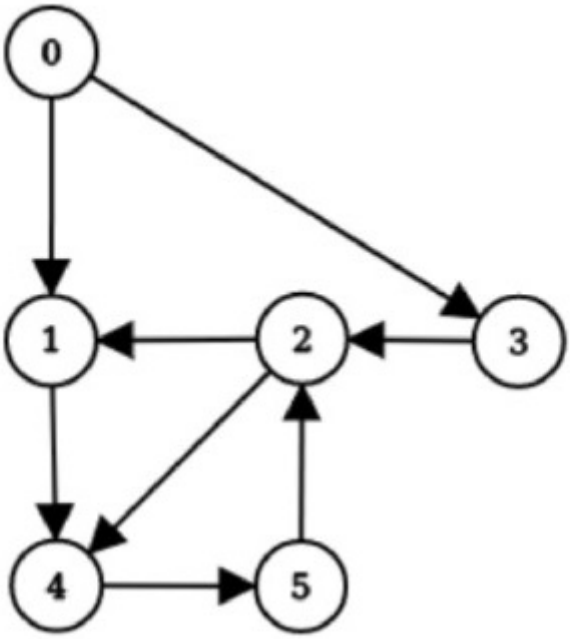
6406532326938. ✔ For i != j, if M[i][j] = 0 then M[j][i] = 0

Question Id : 640653696612 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (21 to 22)

Question Label : Comprehension

Let **M** be an adjacency matrix of a graph **G** given below.




```
Procedure updateMatrix(AM)
    tempMat = AM
    foreach i in rows(AM){
        foreach j in columns(AM){
            foreach k in columns(AM){
                if(AM[i][k] == 1 and AM[k][j]==1){
                    tempMat[i][j] = 1
                }
            }
        }
    }
    return(tempMat)
End updateMatrix
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 21 Question Id : 640653696613 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

What will the values of **a** and **b** be at the end of execution of the pseudocode given below?

```
newMatrix = updateMatrix(M)
a = newMatrix[1][3]
b = newMatrix[4][5]
```

Options :

6406532326971. ✖ a = 1, b = 1

6406532326972. ✔ a = 0, b = 1

6406532326973. ✖ a = 1, b = 0

6406532326974. ✖ a = 0, b = 0

Question Number : 22 Question Id : 640653696614 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

What will the values of **a** and **b** be at the end of execution of the pseudocode given below?

```
newMatrix1 = updateMatrix(M)
newMatrix2 = updateMatrix(newMatrix1)
a = newMatrix2[1][3]
b = newMatrix2[4][5]
```

Options :

6406532326975. ✖ a = 0, b = 0

6406532326976. ✖ a = 1, b = 0

6406532326977. ✔ a = 0, b = 1

6406532326978. ✖ a = 1, b = 1

Sem2 Intro to Python

Section Id : 64065349231