$$M_Y(\lambda) = \frac{1}{16} + \frac{1}{4}e^\lambda + \frac{3}{8}e^{2\lambda} + \frac{1}{4}e^{3\lambda} + \frac{1}{16}e^{4\lambda}$$

6406531736615. ✔

Question Number : 32 Question Id : 640653521018 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 expected value of Y.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

CT

Section Id :	64065333931
Section Number :	3
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	Yes

Clear Response :

Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065373912
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 33 Question Id : 640653521019 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 "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 :

6406531736617. ✔ YES

6406531736618. ✖ NO

Question Number : 34 Question Id : 640653521020 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
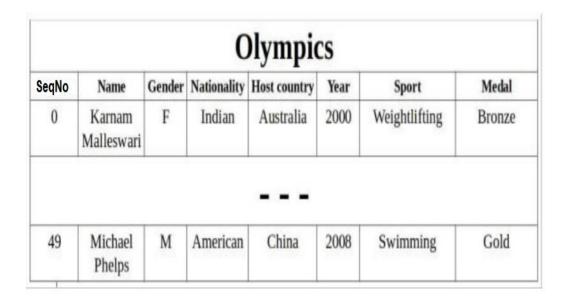
Correct Marks : 0

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

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 :

6406531736619. ✔ Useful Data has been mentioned above.

6406531736620. ✖ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 64065373913

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 35 Question Id : 640653521021 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

Let **Y** be a card in the "Shopping Bills" dataset. Consider the following procedure.

```
1   Procedure findSomething(Y)
2       D = {}
3       foreach Z in Y.ItemList{
4           if(isKey(D, Z.Category)){
5               return(Z.Category)
6           }
7           D[Z.Category] = True
8       }
9       return("None")
10  End findSomething
```

What will **findSomething(X)** return where **X** represents the card given below.

SV Stores				Akshaya 3
Item	Category	Qty	Price	Cost
Face Wash	Toiletries	1	89	89
Shampoo	Toiletries	1	140	140
Onions	Vegetables/Food	1	98	98
Bananas	Fruits/Food	4	8	32
Milk	Dairy/Food	1	24	24
Biscuits	Packed/Food	2	22	44
Maggi	Packed/Food	1	85	85
Horlicks	Packed/Food	1	270	270
Chips	Packed/Food	1	20	20
Chocolates	Packed/Food	4	10	40
Cereal	Packed/Food	1	220	220
Handwash	Toiletries	1	139	139
Air freshener	Toiletries	2	70	140
				1341

Options :

6406531736621. ✳ "None"

6406531736622. ✔ "Toiletries"

6406531736623. ✳ "Packed/Food"

Question Number : 36 Question Id : 640653521022 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

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

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

Options :

6406531736625. ✔ ['z', 'y']

6406531736626. ✳ ['y', 'x', 'z']

6406531736627. ✳ ['y']

6406531736628. ✳ ['z', 'x', 'y']

Sub-Section Number :	3
Sub-Section Id :	64065373914
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 37 Question Id : 640653521023 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 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(first(L1) != last(L2)){
 7               return(False)
 8           }
 9           L1 = rest(L1)
10           L2 = init(L2)
11       }
12       return(True)
13   End findSomething
```

findSomething(L1, L2) will return True when

Options :

6406531736629. ✔ all the elements of both lists **L1** and **L2** are same but arranged in the reverse order.

6406531736630. ✖ both lists **L1** and **L2** are same.

6406531736631. ✖ all the elements of list **L1** are present in **L2** where **length(L2) > length(L1)**.

6406531736632. ✖ all the elements of list **L2** are present in **L1** where **length(L1) > length(L2)**.

Sub-Section Number :   4

Sub-Section Id :   64065373915

Question Shuffling Allowed :   Yes

Is Section Default? :   null

Question Number : 38 Question Id : 640653521024 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 and **explode(W)** returns the list of letters in the word **W**. For example **explode**("common") will return ['c', 'o', 'm', 'm', 'o', 'n']. At the

end of the execution, **count** stores the number of words with at least two consecutive occurrences of the same letter. Choose the correct code fragment to complete the pseudocode.

```
1   count = 0, letterList = []
2   while(Table 1 has more rows){
3       Read the first row X in Table 1
4       letterList = explode(X.Word)
5       count = count + consecute(letterList)
6       Move X to Table 2
7   }
8
9   Procedure consecute(L)
10      lastLetter = first(L)
11      restList = rest(L)
12      *******************
13      ** Fill the code **
14      *******************
15  End consecute
```

Options :

```
1   foreach letter in restList{
2       if(letter == lastLetter){
3           return(1)
4       }
5       lastLetter = letter
6   }
7   return(0)
```

6406531736633. ✔

```
1   foreach letter in restList{
2       if(letter == lastLetter){
3           return(1)
4       }
5       return(0)
6       lastLetter = letter
7   }
```

6406531736634. ✖

6406531736635. ✖

```
1  foreach letter in restList{
2      if(letter != lastLetter){
3          return(0)
4      }
5      lastLetter = letter
6  }
7  return(1)
```

```
1  foreach letter in restList{
2      if(letter != lastLetter){
3          return(0)
4      }
5      return(1)
6      lastLetter = letter
7  }
```

6406531736636. ✖

Question Number : 39 Question Id : 640653521025 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 that the rows in Table 1 are arranged in increasing order of sequence number from top to bottom. What will **L** store at the end of the execution?

```
1    L = []
2    A = "None"
3    Read the first row X in Table 1
4    A = X.PartOfSpeech
5    Move X to Table 2
6    while(Table 1 has more rows){
7        Read the first row Y in Table 1
8        if(Y.PartOfSpeech == "Noun"){
9            if(A == "Adjective"){
10               L = L ++ [Y.Word]
11           }
12       }
13       A = Y.PartOfSpeech
14       Move Y to Table 2
15   }
```

Options :

6406531736637. ✔ Number of nouns that appear immediately after an adjective

6406531736638. ✖ Number of adjectives that appear immediately after a noun

6406531736639. ✖ Number of sentences in which at least one noun appears immediately after an adjective

6406531736640. ✖ Number of sentences in which at least one adjective appears immediately after a noun

Sub-Section Number :	5
Sub-Section Id :	64065373916
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 40 Question Id : 640653521026 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Selectable Option : 0

Question Label : Multiple Select Question

Let **X** be a row from the "Words" dataset. Procedure **isRich(X)** should return True if the number of distinct vowels is less than the number of distinct consonants in **X**.*Word*. 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. It is a Multiple Select Question (MSQ).

```
1   Procedure isRich(X)
2       vDict = {}, wDict = {}
3       i = 1
4       while(i <= X.LetterCount){
5           A = ith letter in X.Word
6           if(A is a vowel){
7               vDict[A] = True
8           }
9           wDict[A] = True
10          i = i + 1
11      }
12      if(length(keys(vDict)) < length(keys(wDict))){
13          return(True)
14      }
15      return(True)
16  End isRich
```

The return value of **isRich(Y)** will be True if

Options :

6406531736641. �֍ Line 2: **vDict** is initialized incorrectly

6406531736642. ✖ Line 10: **i** is updated incorrectly.

6406531736643. ✔ Line 12: Incorrect conditional statement to return True.

6406531736644. ✔ Line 15: return(True) should be replaced by return(False)

6406531736645. ✖ No error

Question Number : 41 Question Id : 640653521027 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Selectable Option : 0

Question Label : Multiple Select Question

Consider the procedure given below, where **aList** is a non-empty list of real 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 :

6406531736646. ✔ The first element of both the lists, **cumuList** and **aList**, will be same.

6406531736647. ✖ Number of elements in **cumuList** will be one lesser than that of **aList**.

6406531736648. ✖ **cumuList** is a list of numbers in increasing order.

6406531736649. ✔ Number of elements in both lists, **cumuList** and **aList**, will be same.

Sub-Section Number :	6
Sub-Section Id :	64065373917
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 42 Question Id : 640653521028 Question Type : MSQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Selectable Option : 0

Question Label : Multiple Select Question

The following pseudocode is executed using the "Olympics" dataset. At the end of the execution, **medalDict** stores a dictionary with player's name as key mapped to another dictionary. The nested dictionary stores the medal type as key mapped to a list of years in which the player won that medal. For example if player Xyz has won a silver medal in 2006, a gold medal in 2008, and another silver medal in 2011, then

medalDict = {"Xyz" : {"Silver" : [2006, 2011], "Gold" : [2008]}, ... }

Assume that every player has a distinct name. 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   medalDict = {}
2   while(Table 1 has more rows){
3       Read the first row X in Table 1
4       if(isKey(medalDict, X.Name)){
5           if(iskey(medalDict[X.Name], X.Medal)){
6               medalDict[X.Name][X.Medal] = [X.Year]
7           }
8           else{
9               medalDict[X.Name][X.Medal] = [X.Year]
10          }
11      }
12      else{
13          medalDict[X.Name][X.Medal] = [X.Year]
14      }
15      Move X to Table 2
16  }
```

Options :

6406531736650. ✷ Line 1: Incorrect initialization of **medalDict**

6406531736651. ✔ Line 6: The current statement should be replaced by

```
1   medalDict[X.Name][X.Medal] = medalDict[X.Name][X.Medal] ++ [X.Year]
```

6406531736652. ✷ Line 9: The current statement should be replaced by

```
1   medalDict[X.Name][X.Medal] = medalDict[X.Name][X.Medal] ++ [X.Year]
```

6406531736653. ✔ Line 13: The current statement should be replaced by

```
1   medalDict[X.Name] = {X.Medal : [X.Year]}
```

Sub-Section Number :	7
Sub-Section Id :	64065373918
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 43 Question Id : 640653521029 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

Consider the procedure **doSomething** given below. If **C** = [3, 4, 1, 9, 5, 3, 1, 9] and **B** = **doSomething(C)**, what would be the value of **first(B)**?

```
1  Procedure doSomething(A)
2      outList = [last(A)]
3      foreach X in A{
4          if(X != last(outList)){
5              outList = [X] ++ outList
6          }
7      }
8      return(outList)
9  End doSomething
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Sub-Section Number :	8
Sub-Section Id :	64065373919
Question Shuffling Allowed :	Yes

Is Section Default? :   null

Question Number : 44 Question Id : 640653521030 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

Consider the following pseudocode where **Y** is a row in the "Words" table. At the end of the execution, what will be the value of **length(keys(alphaDict))** if **Y**.*Word* is "think"?

```
1   alphaDict = {'t':2, 'e':1}
2   alphaDict = updateDict(Y, alphaDict)
3
4   Procedure updateDict(Z, Dict)
5       i = 1
6       while(i <= Z.LetterCount){
7           x = ith letter of Z.Word
8           if(not isKey(Dict, x)){
9               Dict[x] = 1
10          }
11          else{
12              Dict[x] = Dict[x] + 1
13          }
14          i = i + 1
15      }
16      return(Dict)
17  End updateDict
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Sub-Section Number :   9

Sub-Section Id :   64065373920

Question Shuffling Allowed :   No

Question Id : 640653521031 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 : (45 to 46)

Question Label : Comprehension

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

```
1  count = 0, flag = True
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  }
```

Answer the given subquestions.

Sub questions

Question Number : 45 Question Id : 640653521032 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

What will **count** represent at the end of the execution if the missing code is filled by

```
1  if(X.Word ends with full stop){
2      if(X.Word == "Noun"){
3          count = count + 1
4      }
5  }
```

Options :

6406531736657. ✳ Total number of nouns in the dataset

6406531736658. ✳ Number of sentences which start with a noun

6406531736659. ✳ Number of sentences having at least one noun

6406531736660. ✔ Number of sentences which end with a noun

Question Number : 46 Question Id : 640653521033 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

What will **count** represent at the end of the execution if the missing code is filled by

```
1   if(flag and X.PartOfSpeech == "Noun"){
2       count = count + 1
3   }
4   flag = False
5   if(X.Word ends with full stop){
6       flag = True
7   }
```

Options :

6406531736661. ✳ Total number of nouns in the dataset

6406531736662. ✔ Number of sentences which start with a noun

6406531736663. ✳ Number of sentences having at least one noun

6406531736664. ✳ Number of sentences which end with a noun

Sub-Section Number :	10
Sub-Section Id :	64065373921
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653521034 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 : (47 to 48)

Question Label : Comprehension

The following pseudocode is executed using the "Shopping Bills" dataset.

```
1   D = { }
2   while(Pile 1 has more cards){
3       Read the top card X in Pile 1
4       foreach Y in X.ItemList{
5           if(isKey(D, Y.Category)){
6               if(isKey(D[Y.Category], Y.ItemName)){
7                   D[Y.Category][Y.ItemName] = D[Y.Category][Y.ItemName] ++
    [Y.Price]
8               }
9               else{
10                  D[Y.Category][Y.ItemName] = [Y.Price]
11              }
12          }
13          else{
14              D[Y.Category] = {Y.ItemName : [Y.Price]}
15          }
16      }
17      Move card X to Pile 2
18  }
```

Answer the given subquestions.

Sub questions

**Question Number : 47 Question Id : 640653521035 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 each value **D[j][k]** represent at the end of the execution?

Options :

6406531736665. ✱ Price of item **j** of category **k** across all bills

6406531736666. ✱ Price of item **k** of category **j** across all bills

6406531736667. ✱ List of prices of item **j** of category **k** across all bills

6406531736668. ✔ List of prices of item **k** of category **j** across all bills

Question Number : 48 Question Id : 640653521036 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

Consider the dictionary **D** created in the previous question, what will the value of **L** represent at the end of the execution of the following pseudocode?

```
1   A = 0, L = []
2   foreach i in keys(D){
3       foreach j in keys(D[i]){
4           B = findRange(D[i][j])
5           if(B == A){
6               L = L ++ [j]
7           }
8           if(B > A){
9               A = B
10              L = [j]
11          }
12      }
13  }
14
15  Procedure findRange(Y)
16      p = first(Y), q = first(Y)
17      foreach k in Y{
18          if(k > p){
19              p = k
20          }
21          if(k < q){
22              q = k
23          }
24      }
25      return(p - q)
26  End findRange
```

Options :

6406531736669. ✳ List of items for which the difference between the highest and lowest price is the same

6406531736670. ✔ List of items for which the difference between the highest and lowest price is

maximum

6406531736671. ✳ List of items for which the difference between the highest and lowest price is minimum

6406531736672. ✳ List of items with same price in all shops

DBMS

Section Id :	64065333932
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	16
Number of Questions to be attempted :	16
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 :	64065373922
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 49 Question Id : 640653521037 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 "DIPLOMA LEVEL : DATABASE MANAGEMENT