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 QUALIFIER EXAM QPA1 10 July 2022

Subject Name: 2022 July: IIT M QUALIFIER EXAM QPA1

Creation Date : 2022-07-06 19:15:33

Duration: 240

Total Marks: 200

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

Change Background Color: No

Change Theme: No **Help Button:** No **Show Reports:** No **Show Progress Bar:** No **Group I Group Number: Group Id:** 6406538796 **Group Maximum Duration:** 0 **Group Minimum Duration:** 90 **Show Attended Group?:** No **Edit Attended Group?:** No Break time: 0 **Group Marks:** 200 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

Maths 1

Section Id: 64065322047

Section Number: 1

Section type: Online

Mandatory or Optional: Mandatory

Number of Questions: 12

Number of Questions to be attempted: 12

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: 64065349807

Question Shuffling Allowed: No

Question Number: 1 Question Id: 640653349194 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 "QUALIFIER: MATHEMATICS FOR DATA SCIENCE 1"

MANDATORILY YOU HAVE TO ATTEND ALL THE SECTIONS.

Options:

6406531159869. Ves

6406531159870. * No

Question Number: 2 Question Id: 640653349195 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:
 - R= Set of real numbers
 - Q= Set of rational numbers
 - Z= Set of integers
 - N= Set of natural numbers
- The set of natural numbers includes 0.

Options:

6406531159871. ✓ Useful Data has been mentioned above.

6406531159872. * This data attachment is just for a reference & not for an evaluation.

Sub-Section Number: 2

Sub-Section Id: 64065349808

Question Shuffling Allowed: Yes

Question Number: 3 Question Id: 640653349205 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 value of a quadratic function f(x) increases over the interval $(-\infty, -5)$ and decreases over the interval $(-5, \infty)$. Also, f(0) = f(-10) = 20. Which of the following statements about f(x) can be true?

Options:

6406531159893. * f(x) is an injective function.

6406531159894. \checkmark $D \ge 0$, where D is the discriminant of f(x).

6406531159895. $\checkmark f(x)$ can be -0.1(x+20)(x-10).

6406531159896. * f(x) can be -0.1(x-20)(x+10).

Sub-Section Number: 3

Sub-Section Id: 64065349809

Question Shuffling Allowed: Yes

Question Number: 4 Question Id: 640653349196 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 a relation R defined on the set $A = \{10, 12, 14, 16, 18\}$ as $R = \{(x, y) : y = x + 2\}$. Which among the following is(are) correct.

Options:

6406531159873. ✓ R is neither reflexive, nor symmetric and nor transitive

6406531159874. ✓ *R* is an anti-symmetric relation.

6406531159875. * *R* is an identity relation.

6406531159876. **¾** *R* is an equivalence relation.

Question Number: 5 Question Id: 640653349197 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

A sniper shoots at a target in such a way that the bullet moves along the straight path y = x - 15. The bullet passes through the mid point of a line segment AB, where the coordinates of A and B are (50, y_1) and (x_2 , 50) respectively. If the distance of the points A and B from the given line are equal and whose value is $\frac{15}{\sqrt{2}}$, then choose the possible coordinates of A and B from the given options.

Options:

6406531159877. ✓ Coordinates of *A* and *B* are (50, 50) and (80, 50) respectively.

6406531159878. Coordinates of *A* and *B* are (50, 25) and (100, 50) respectively.

6406531159879. * Coordinates of A and B are (40, 65) and (100, 115) respectively.

6406531159880. ✓ Coordinates of *A* and *B* are (50, 20) and (50, 50) respectively.

Question Number: 6 Question Id: 640653349201 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

Sandhya launches her new company in the year 2010, which makes yearly profit in lakhs as the polynomial function $p(x) = 0.1x^2(x-1)(x-2)(x-3)^2(x-4)(x-9)$ for the first 12 years since the launch, where x is the number of years since 2010 (i.e., x=0 denotes the year 2010, x=1 denotes the year 2011, and so on). Let the loss be represented as -ve of profit. Which of the following options are correct?

Options:

Including the year in which the company was launched, it neither made profit 6406531159887.

✓ nor loss six times in 12 years.

6406531159888. * The company made profit in years $x \in \{7, 8, 10, 11\}$.

6406531159889. \checkmark The company made loss (-ve profit) in years $x \in \{5, 6, 7, 8\}$.

6406531159890. \checkmark In the year 2022 (i.e., x = 12) the company made profit.

Sub-Section Number: 4

Sub-Section Id: 64065349810

Question Shuffling Allowed : Yes

Question Number: 7 Question Id: 640653349199 Question Type: MSQ Is Question

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

Time: 0

Correct Marks: 6

Question Label: Multiple Select Question

Which of the following functions is (are) onto (surjective)?

Options:

$$f: \mathbb{N} \longrightarrow \mathbb{N}$$

$$f(n) = \begin{cases} \frac{n}{2} & \text{if } n \text{ is even} \\ n-1 & \text{otherwise} \end{cases}$$

$$f: \mathbb{N} \longrightarrow \mathbb{N}$$

$$f(n) = \begin{cases} \frac{n+1}{2} & \text{if } n \text{ is odd} \\ \frac{n}{2} & \text{otherwise} \end{cases}$$
6406531159883.

$$f:\mathbb{R}\longrightarrow\mathbb{N}$$

$$f(n)=\begin{cases} 0 & \text{if } n\in\mathbb{Q}\\ 1 & \text{otherwise} \end{cases}$$

Sub-Section Number: 5

Sub-Section Id: 64065349811

Question Shuffling Allowed: Yes

Question Number: 8 Question Id: 640653349200 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 two quadratic polynomials p(x) and q(x) whose roots are shown in the Figure 2. The leading coefficient of p(x) and q(x) is +1 and the y-coordinate of the vertex point of p(x) is equal to the y-coordinate of the vertex point of q(x). Find the value of d (See Figure 2)

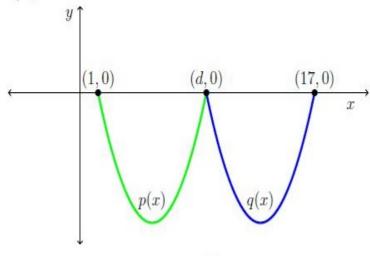


Figure 2

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:

9

Question Number: 9 Question Id: 640653349206 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

A company wants to manufacture iron rods. Before they start production, they estimated the total cost(C) for producing x number of iron rods is C(x) = 0.2x + 1000 and the total revenue(R) for selling x number of iron rods is R(x) = 2.4x. They are also sure that every iron rod produced will be sold. Find the minimum number of iron rods the company should manufacture to get a profit.

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:

455

Question Number: 10 Question Id: 640653349207 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

Two highways perpendicular to each other are considered as the coordinate axes. Arpita's house is at the point (-3, a) and her friend Puja's house is at the point (-3, 10). The distance between their houses is 6 km. Sofi's house is at (b, 10). The distance between Puja's and Sofi's houses is 8 km. If a and b are real numbers, then what is the distance between Arpita's and Sofi's house? (Consider the unit length to be 1 km on both the axes)

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:

10

Sub-Section Number: 6

Sub-Section Id: 64065349812

Question Shuffling Allowed : Yes

Question Number: 11 Question Id: 640653349198 Question Type: SA Calculator: None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0
Correct Marks : 6

Consider the following sets,

Question Label: Short Answer Question

- $A = \{x \in \mathbb{N} \mid x \mod 3 = 0 \text{ and } 1 \le x \le 25\}$
- $B = \{x \in \mathbb{N} \mid x \mod 6 = 0 \text{ and } 1 \le x \le 25\}$
- $C = \{x \in \mathbb{N} \mid x \mod 7 = 0 \text{ and } 1 \le x \le 25\}$

What is the cardinality of $((A \setminus (B \cup C)) \cup (B \setminus (A \cup C)) \cup (C \setminus (B \cup A))$?

NOTE: Enter your answer to the nearest integer.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Equal

Text Areas: PlainText

Possible Answers:

5

Sub-Section Number: 7

Sub-Section Id: 64065349813

Question Shuffling Allowed: No

Question Id: 640653349202 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 : (12 to 13)

Question Label: Comprehension

Rizwan wants to cross the river represented by r(x) = 0.05(x-1)(x-5)(x-10) + k, where k is an integer constant (Refer Figure 2). He chooses to cross the river r(x) using the bridge. In order to cross the river he has to identify the coordinates of the point A. He realises that the coordinates of the point A can be identified in such a way that the curve r(x) can be best fitted according to the data given in the table (refer Table 1). Consider the river and the bridge to be of negligible thickness. Based on these information answer the given subquestions

\boldsymbol{x}	-10	-5	1	10	15
y	-150	-30	15	15	50

Table 1

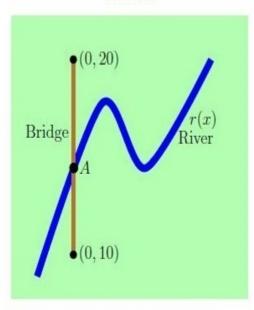


Figure 2: River and bridge

Sub questions

Question Number: 12 Question Id: 640653349203 Question Type: SA Calculator: None

 $\label{lem:ness} \textbf{Response Time: N.A Think Time: N.A Minimum Instruction Time: 0}$

Correct Marks: 4

Question Label: Short Answer Question

Using the given information, find the value of *k*.

NOTE: Enter your answer to the nearest integer.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Equal
Text Areas : PlainText
Possible Answers :

15

Question Number: 13 Question Id: 640653349204 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

Using the given information, what will be the y-coordinate of the point A?

NOTE: Enter your answer in one decimal place.

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Equal

Text Areas: PlainText

Possible Answers:

12.5

English 1

Section Id: 64065322048

Section Number: 2

Section type: Online

Mandatory or Optional: Mandatory

Number of Questions: 25

Number of Questions to be attempted: 25

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 :	64065349814
Question Shuffling Allowed :	No
Question Number : 14 Question Id : 640653349208	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 "QUALIFIER: EN	NGLISH 1"
MANDATORILY YOU HAVE TO ATTEND ALL THE SECTIONS.	
Options :	
6406531159899. ✓ Yes	
6406531159900. * No	
Sub-Section Number :	2
Sub-Section Id :	64065349815
Question Shuffling Allowed :	No
Question Id : 640653349209 Question Type : COMPF	REHENSION 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 19)

Question Label : Comprehension

Read the following passage and answer the given subquestions:

At five-thirty in the morning the doctors examined the Swami. They wrote and signed a bulletin saying: "Swami's condition grave. Declines glucose and saline. Should break the fast immediately. Advise procedure." They sent a man running to send off this telegram to their headquarters.

It was a top-priority government telegram, and it fetched a reply within an

hour: "Imperative that Swami should be saved. Persuade best to cooperate. Should not risk life.

Try give glucose and saline. Persuade Swami resume fast later."

They sat beside the Swami and read the message to him. He smiled at it. He beckoned Velan to

come nearer.

The doctors appealed, "Tell him he should save himself. Please, do your best. He is very weak."

Velan bent close to the Swami and said, "The doctors say—"

In answer Raju asked the man to bend nearer, and whispered, "Help me to my feet," and clung to

his arm and lifted himself. He got up to his feet. He had to be held by Velan and another on each

side. In the profoundest silence the crowd followed him down. Everyone followed at a solemn,

silent pace. The eastern sky was red. Many in the camp were still sleeping. Raju could not walk, but

he insisted upon pulling himself along all the same. He panted with the effort. He went down the

steps of the river, halting for breath on each step, and finally reached his basin of water. He

stepped into it, shut his eyes, and turned toward the mountain, his lips muttering the prayer.

Velan and another held him each by an arm. The morning sun was out by now; a great shaft of

light illuminated the surroundings. It was difficult to hold Raju on his feet, as he had a tendency to

flop down. They held him as if he were a baby. Raju opened his eyes, looked about, and said,

"Velan, it's raining in the hills. I can feel it coming up under my feet, up my legs—" He sagged

down.

- The Guide, R K Narayan

Sub questions

Question Number: 15 Question Id: 640653349210 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 eastern sky was red. What time does this sentence signify?

Options:

6406531159901. V Dawn

6406531159902. ** Dusk

6406531159903. * Evening

6406531159904. * Noon

Question Number: 16 Question Id: 640653349211 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 an appropriate word to replace *flop*.

Options:

6406531159905. V Fall

6406531159906. * Fly

6406531159907. ***** Uneasy

6406531159908. * Struggle

Question Number: 17 Question Id: 640653349212 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 an appropriate word to replace *shaft*.

Options:

6406531159909. * Lever

6406531159910. ** Pipe

6406531159911. V Beam

6406531159912. ** Bean

Question Number: 18 Question Id: 640653349213 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

In the profoundest silence the crowd followed him down. The degree of adjective used here is _____.

Options:

6406531159913. * Positive

6406531159914. * Comparative

6406531159915. **Superlative**

6406531159916. * There is no adjective

Question Number: 19 Question Id: 640653349214 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 an appropriate word to replace sag.

Options:

6406531159917. V Sink

6406531159918. * Scold

6406531159919. * Breakdown

6406531159920. * Fixate

Question Id: 640653349215 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: (20 to 24)

Question Label: Comprehension

Listen to the audio and answer the given subquestions:

Sub questions

Question Number: 20 Question Id: 640653349216 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 Malala, which among the following are the ways by which people describe her?

Options:

6406531159921. * The girl who was shot by the Taliban

6406531159922. * The girl who fought for her rights

6406531159923. * A Nobel Prize laureate

6406531159924. All of these

Question Number: 21 Question Id: 640653349217 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 in the audio that means 'lacking a specified benefit that is considered important.'

Options:

6406531159925. * Honoured

6406531159926. * Achieved

6406531159927. V Deprived

6406531159928. * Forgotten

Question Number: 22 Question Id: 640653349218 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

In order to _____ some happiness to it, my grandfather would always call me Malala, the happiest girl in the world.

Options:

6406531159929. * Land

6406531159930. * Lent

6406531159931. ✓ Lend

6406531159932. * Lank

Question Number: 23 Question Id: 640653349219 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

In the speech, Malala refers to Kailash Satyarthi, a Nobel Prize laureate who works for ______

Options:

6406531159933. **✓** Rights of children

6406531159934. * Racial equality

6406531159935. ***** Environmental issues

6406531159936. * All of these

Question Number: 24 Question Id: 640653349220 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 did Malala stand up for?

Options:

6406531159937. * Cultural and artistic production

6406531159938. Resolving the border conflict

6406531159939. Achieving peace and international cooperation 6406531159940. **✓** Girls' right to education **Sub-Section Number:** 3 **Sub-Section Id:** 64065349816 **Question Shuffling Allowed:** Nο Question Id: 640653349221 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: (25 to 29) Question Label: Comprehension Read the following telephone conversation and answer the given subquestions: Oliver: Good evening, Dr. Gregs! Professor: Good evening! (i) . Oliver: I am Oliver Thompson. I study at the department of Electrical Engineering. I have been in your class on 'Operations Research' offered this semester. Professor: Good! (ii) _____. Oliver: I lack clarity in concepts discussed in the last lecture. Could I (iii) ______. Professor: Yes. You may meet on Tuesday at 11:00 a.m. Does that sound good? Oliver: Yes Ma'am. Thank you! Professor: (iv) ______. **Sub questions** Question Number: 25 Question Id: 640653349222 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 (i) with an appropriate response. **Options:**

6406531159941. * Hello! Is that?

6406531159942. * What's up?

6406531159943. Who's calling, please?

Question Number: 26 Question Id: 640653349223 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 (ii) with an appropriate response.

Options:

6406531159944. * There is none of that name here.

6406531159945. **✓** How may I help you?

6406531159946. * Please, hang up.

Question Number: 27 Question Id: 640653349224 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 (iii) with an appropriate response.

Options:

6406531159947. **X** Talk with you?

6406531159948. Make an appointment with you sometime this week?

6406531159949. * Discuss this with you?

6406531159950. ✓ All of these

Question Number: 28 Question Id: 640653349225 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 (iv) with an appropriate response?

Options:

6406531159951. Sorry! I think you have got the wrong number.

6406531159952. * I can't get through.

6406531159953. **V** Take care. Goodbye!

6406531159954. * Who am I speaking to, please?

Question Number: 29 Question Id: 640653349226 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 conversation between the professor and the student is _____.

Options:

6406531159955. V Formal

6406531159956. * Informal

Question Id: 640653349242 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 : (30 to 34)

Question Label: Comprehension

Match Column A with the most suitable option given in Column B. (Hint: Word Collocation)

A	В
1. Eccentric	i. Change
2. Scenic	ii. Consequences
3. Welcome	iii. Behavior
4. Far-reaching	iv. View
5. Closing	v. Date

Sub questions

Question Number: 30 Question Id: 640653349243 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

Eccentric

Options:

```
6406531159994. * i
6406531159995. * ii
6406531159996. ✓ iii
6406531159997. * iv
6406531159998. * v
```

Question Number: 31 Question Id: 640653349244 Question Type: MCQ Is Question

 ${\bf Mandatory: No\ Calculator: None\ Response\ Time: N.A\ Think\ Time: N.A\ Minimum\ Instruction}$

Time: 0

Correct Marks: 1

Question Label: Multiple Choice Question

Scenic

Options:

```
6406531159999. * i
6406531160000. * ii
6406531160001. * iii
6406531160002. ✓ iv
6406531160003. * v
```

Question Number: 32 Question Id: 640653349245 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 Welcome **Options:** 6406531160004. **✓** i 6406531160005. ** ii 6406531160006. ***** iii 6406531160007. ** iv 6406531160008. ** v Question Number: 33 Question Id: 640653349246 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 Far-reaching **Options:** 6406531160009. ** i 6406531160010. **✓** ii 6406531160011. ** iii 6406531160012. ** iv 6406531160013. ** v Question Number: 34 Question Id: 640653349247 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

Closing

Options:

6406531160014. ** i

6406531160015. ** ii

6406531160016. ** iii

6406531160017. ** iv

6406531160018. V

Sub-Section Number: 4

Sub-Section Id: 64065349817

Question Shuffling Allowed : Yes

Question Number: 35 Question Id: 640653349227 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 do you pronounce the word 'sprain'?

Options:

6406531159957. With a short vowel

6406531159958. **✓** With a long vowel

Question Number: 36 Question Id: 640653349228 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 does NOT carry the sound 'sh'?

Options:

6406531159959. * Precious

6406531159960. V Measure

6406531159961. * Moustache

6406531159962. ** None of these

Question Number: 37 Question Id: 640653349229 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 does NOT carry the sound /p/?

Options:

6406531159963. * Pneumonia

6406531159964. * Psychology

6406531159965. * Photon

6406531159966. All of these

Question Number: 38 Question Id: 640653349230 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 watched _____ interesting film yesterday.

Options:

6406531159967. V An

6406531159968. * A

Question Number: 39 Question Id: 640653349231 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 gown was stitched in ____ unique design.

Options:

6406531159969. * An

6406531159970. ✓ A

Question Number: 40 Question Id: 640653349232 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 like people who can question the officers without any inhibitions.

In this sentence, the word 'question' is used as a verb. Choose the sentence below where 'question' functions as a noun.

Options:

6406531159971. [★] We do not question the people in authority.

6406531159972. * I have decided to question this behavior.

6406531159973. ✓ This is a very disturbing question.

Question Number: 41 Question Id: 640653349233 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 the correct stress-pattern?

Options:

6406531159974. * proliFIC

6406531159975. * PROlific

6406531159976. V proLIfic

Question Number: 42 Question Id: 640653349234 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 the correct stress-pattern?

Options:

6406531159977. VINstantly

6406531159978. * instantLY

6406531159979. * inSTANTly

Question Number: 43 Question Id: 640653349235 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

State true or false:

The plural marker for the words 'methods', 'practicals', and 'experiments' end in /s/, /z/, and /s/ sound respectively.

Options:

6406531159980. * TRUE

6406531159981. ✓ FALSE

Question Number: 44 Question Id: 640653349236 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 word 'split' is monosyllabic.

Options:

6406531159983. * FALSE

Question Number: 45 Question Id: 640653349237 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 phrase, 'to the school', 'to' is (a/an) _____.

Options:

6406531159984. **Preposition**

6406531159985. * Adverb

Question Number: 46 Question Id: 640653349238 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 sentence, 'I can hear you on and off', the phrase 'on and off' means _____.

Options:

6406531159986. * The voice is clear and audible

6406531159987. ✓ The voice is unclear and gets cut off from time to time

Question Number: 47 Question Id: 640653349239 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

'He was a good player.' This sentence is an indicator of ____ tense.

Options:

6406531159988. * Present

6406531159989. V Past

Question Number: 48 Question Id: 640653349240 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 synonym (that suits best) for the following word.

Unconvincing

Options:

6406531159990. ***** Emphatic

6406531159991. V Dubious

Question Number: 49 Question Id: 640653349241 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 synonym (that suits best) for the following word.

Vindicate

Options:

6406531159992. Acquit

6406531159993. * Arrest

Question Number: 50 Question Id: 640653349248 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

While speaking, one must pause after ______.

Options:

6406531160019. * Phrases

6406531160020. * Clauses

6406531160021. * Sentences

6406531160022. All of these

Question Number: 51 Question Id: 640653349249 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

Rectify has ____vowel sounds and ___syllables.

Options:

6406531160023. * 2, 2

6406531160024. * 3, 2

6406531160025.

3, 3

6406531160026. * 2, 3

Question Number: 52 Question Id: 640653349250 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

To be effective in formal presentations, it is necessary to be well-groomed.

Options:

6406531160027. ✓ TRUE

6406531160028. * FALSE

Question Number: 53 Question Id: 640653349251 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

'Mr. Brown your cab is here' Choose the option with the correct pauses in speech.

Options:

6406531160029. * Mr./ Brown/ your cab/is here//

6406531160030. * Mr. Brown your/ cab /is here//

6406531160031. * Mr./ Brown your cab is here//

6406531160032. **W** Mr. Brown/ your cab is here//

Question Number: 54 Question Id: 640653349252 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

A good speaker will always stick to the time limit given and not extend it greatly.

Options:

6406531160033. V TRUE

6406531160034. * FALSE

CT

Section Id: 64065322049

Section Number: 3

Section type: Online

Mandatory or Optional: Mandatory

Number of Questions: 15

Number of Questions to be attempted: 15

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: 64065349818

Question Shuffling Allowed: No

Question Number: 55 Question Id: 640653349253 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 "QUALIFIER: COMPUTATIONAL THINKING"

MANDATORILY YOU HAVE TO ATTEND ALL THE SECTIONS.

Options:

6406531160035. V Yes

6406531160036. * No

Question Number: 56 Question Id: 640653349254 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

			S	core	es			
SeqNo	Name	Gender	DateOfBirth	CityTown	Mathematics	Physics	Chemistry	Total
0	Bhuvanesh	M	7 Nov	Erode	68	64	78	210
					•			
29	Naveen		13 Oct					

Words						
Nord	PartOfSpeech	LetterCount				
It	Pronoun	2				
	Vord	Nord PartOfSpeech				

Name	Author	Genre	Language	Pages	Publisher	Year
Igniting Minds	Kalam	Nonfiction	English	178	Penguin	2002

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

Three sample cards out of 30 for Shopping Bills dataset







Options:

6406531160038. * This data attachment is just for a reference & not for an evaluation.

Sub-Section Number: 2

Sub-Section Id: 64065349819

Question Shuffling Allowed : Yes

Question Number: 57 Question Id: 640653349255 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 following pseudocode is executed using the "Words" dataset. What will **A** represent at the end of the execution?

```
A = 0
 1
 2
    while(Table 1 has more rows){
 3
        Read the first row X in Table 1
        i = 1, B = True
 4
 5
        while(i <= X.LetterCount){
            if(ith letter of x.Word is a vowel){
 6
 7
                B = False
 8
            }
            i = i + 1
 9
10
        }
11
        if(B){
12
            A = A + 1
13
14
        Move X to Table 2
15
    }
```

Options:

6406531160039. Number of words with at most one vowel

6406531160040. Number of words with exactly one vowel

6406531160041. Number of words with only vowels

6406531160042. ✓ Number of words without vowels

Question Number: 58 Question Id: 640653349256 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 following pseudocode is executed using the "Words" dataset. At the end of the execution, A is set to True if there exist a pair of words with same part of speech and same letter count. Choose the correct code fragment to complete the pseudocode.

```
A = False
1
   while(Table 1 has more rows){
2
       Read the first row X in Table 1
3
       Move X to Table 2
4
       while(Table 1 has more rows){
5
           Read the first row Y in Table 1
6
           ****
7
           * Fill the code *
8
           ****
9
10
           Move Y to Table 3
       7
11
       Move all rows from Table 3 to Table 1
12
13
   }
```

Options:

```
if(X.PartOfSpeech == Y.PartOfSpeech and X.LetterCount == Y.LetterCount){
                     2
                            A = True
                     3
                         }
6406531160043.
```

```
if(X.PartOfSpeech == Y.PartOfSpeech or X.LetterCount == Y.LetterCount){
2
       A = True
3
   }
```

6406531160044.

```
if(X.PartOfSpeech == Y.PartOfSpeech and X.LetterCount == Y.LetterCount){
                      2
                             A = False
                      3
                         }
6406531160045. **
```

```
1 if(X.Partofspeech == Y.Partofspeech or X.LetterCount == Y.LetterCount){
2     A = False
3 }
```

6406531160046. **

Question Number: 59 Question Id: 640653349257 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 following pseudocode is executed using the "Library" dataset. What will **count** represent at the end of the execution?

```
A = 0, count = 0
    while(Table 1 has more rows){
 2
 3
        Read the first row X in Table 1
 4
        if(x.Year > A){
            A = X.Year
 6
        }
 7
        Move X to Table 2
 8
9
    while(Table 2 has more rows){
        Read the first row Y in Table 2
10
11
        if(Y.Year != A){
12
            count = count + 1
        }
13
14
        Move Y to Table 1
15
   }
```

Options:

6406531160047. Number of authors who have not published a book in the most recent year 6406531160048. Number of authors who have not published maximum number of books 6406531160049. Number of books which are not published in the most recent year 6406531160050. Number of authors who have published a book in the most recent year

Sub-Section Number: 3

Sub-Section Id: 64065349820

Question Shuffling Allowed: Yes

Question Number: 60 Question Id: 640653349259 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 **A** be an author who has written a book in the "Library" dataset and **B** be a positive integer.

What does the procedure **DoSomething** compute?

```
1
    Procedure DoSomething(A, B)
 2
        C = 0, D = 2023
 3
        while(Table 1 has more rows){
             Read the first row X in Table 1
 4
 5
             if(X.Author == A){
 6
                 if(x.Year > C){
 7
                     C = X.Year
                 }
 8
                 if(X.Year < D){
 9
                     D = X.Year
10
                 }
11
12
            Move X to Table 2
13
14
        }
        if(C - D >= B){
15
             return(True)
16
17
        }
        else{
18
             return(False)
19
20
        7
    End DoSomething
21
```

Options:

6406531160055. ** Outputs *True* if the second book of author **A** was published at least **B** years after his/her first book

6406531160056. ✓ Outputs *True* if the last book of author **A** was published at least **B** years after his/her first book

6406531160057. ♣ Outputs *True* if the last book of author **A** was published at least **B** years after his/her second last book

6406531160058. * None of these

Question Number: 61 Question Id: 640653349261 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
   while(Table 1 has more rows){
3
        Read the first row X from Table 1
        count = count + checkSomething(X)
4
 5
        Move X to Table 2
6
7
   Procedure checkSomething(Z)
8
       i = Z.LetterCount
       while(i > 0){
9
           if(ith letter of Z.Word is vowel){
10
11
                return(0)
12
           }
           i = i - 1
13
15
       return(1)
   End checkSomething
16
```

Options:

6406531160066. * Number of vowels

6406531160067. Number of words that have only vowels

6406531160068. ✓ Number of words that have only consonants

6406531160069. Number of words that have both vowels and consonants

6406531160070. ** None of these

Sub-Section Number: 4

Sub-Section Id: 64065349821

Question Shuffling Allowed : Yes

Question Number: 62 Question Id: 640653349258 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

miniSum accepts three distinct numbers as parameters and returns the sum of two smallest numbers. Choose the correct code fragment to complete the procedure.

```
Procedure miniSum(A, B, C)
2
      Sum = 0
3
      if(A > C \text{ and } A > B)
          Sum = B + C
4
5
      ****
6
7
      * Fill the code
      ****
8
9
      return(Sum)
   End miniSum
10
```

Options:

```
1 else {
2    if(C > B and B > A) {
3        Sum = A + C
4    }
5    else {
6        Sum = A + B
7    }
8 }
```

6406531160051. **

```
1 if(B > C and B > A){
2    Sum = A + C
3 }
4 else{
5    Sum = A + B
6 }
```

6406531160052. **

6406531160053. **

```
1 else{
2    Sum = A + B
3 }
4 else{
5    if(B > C and A > B){
6     Sum = A + C
7    }
8 }
```

```
1 else{
2    Sum = A + B
3  }
4 if(B > C and B > A){
5    Sum = A + C
6 }
```

Question Number: 63 Question Id: 640653349264 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 "Library" dataset. What will **count** represent at the end of the execution?

```
count = 0
 1
 2
    while(Table 1 has more rows){
 3
        Read the first row X from Table 1
        Move X to Table 2
4
 5
        Flag = True
 6
        if(X.Genre != "Fiction"){
 7
            Flag = False
 8
        }
        if(Flag){
 9
            while(Table 1 has more rows){
10
                 Read the first row Y from Table 1
11
                 if(X.Author == Y.Author){
12
                     Move Y to Table 2
13
                     if(Y.Genre != "Fiction"){
14
                         Flag = False
15
16
                     7
17
                 }
                 else{
18
19
                     Move Y to Table 3
20
                 }
21
            Move all rows from Table 3 to Table 1
22
23
        }
24
        if(Flag){
            count = count + 1
25
26
        }
    }
27
```

Options:

6406531160084. Number of authors who have written exactly one book under genre "Fiction"

6406531160085. Number of pairs of authors who have not written any book under genre "Fiction"

6406531160086. ✓ Number of authors who have written books only under genre "Fiction"

6406531160087. Number of pairs of authors who have written books only under genre "Fiction"

Sub-Section Number: 5

Sub-Section Id: 64065349822

Question Shuffling Allowed : Yes

Question Number: 64 Question Id: 640653349260 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 following pseudocode is executed using the "Words" dataset. At the end of the execution, **C** captures the number of nouns with letter count at least four and at most eight. 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).

```
C = 0
 1
 2
    while(Table 1 has more rows){
 3
        Read the first row X from Table 1
        if(CheckSomething(X, 4, 8)){
 4
            C = C + 1
 5
 6
        }
 7
        Move X to Table 2
    }
 8
9
    Procedure CheckSomething(Y, C1, C2)
10
        if(Y.PartOfSpeech == "Noun"){
            if(C1 <= Y.LetterCount and Y.LetterCount <= C2){
11
                 return(True)
12
13
            }
            else{
14
15
                 return(False)
            }
16
        }
17
18
        else{
19
             return(False)
        }
20
    End CheckSomething
21
```

Options:

Sub-Section Number:

Sub-Section Id:

```
6406531160069. ** Error in Line 1
6406531160060. ** Error in Line 4
6406531160061. ** Error in Line 5
6406531160062. ** Error in Line 10
6406531160063. ** Error in Line 11
6406531160064. ** Multiple return(False) in procedure CheckSomething
6406531160065. ✓ No error
```

6

64065349823

Question Number: 65 Question Id: 640653349269 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 "Words" dataset. What will **count**. represent at the end of the execution?

```
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){
            Read the first row Y from Table 1
6
7
            count = count + isSimilar(X, Y)
            Move Y to Table 3
8
        }
9
10
        Move all rows from Table 3 to Table 1
11
    }
12
    Procedure isSimilar(A, B)
13
        if(A.LetterCount != B.LetterCount){
            return (0)
14
15
        }
        i = 1
16
17
        while(i <= A.LetterCount){
            if(ith letter of A.Word is vowel and ith letter of B.Word is vowel){
18
19
                return(0)
            }
20
21
            if(ith letter of A.Word is consonant and ith letter of B.Word is
    consonant){
22
                return(0)
23
            }
            i = i + 1
24
25
        return(1)
26
   End isSimilar
```

Options:

6406531160100. Number of pairs of words with different letter count and the position of vowels and consonants in both words are same

6406531160101. Number of pairs of words with same letter count and the position of vowels and consonants in both words are same

6406531160102. Number of pairs of words with same letter count + Number of pairs of words where the position of vowels and consonants in both words are interchanged

6406531160103. ✓ Number of pairs of words with same letter count and the position of vowels and consonants in both words are interchanged

Sub-Section Number: 7

Sub-Section Id: 64065349824

Question Shuffling Allowed : Yes

Question Number: 66 Question Id: 640653349262 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

The following pseudocode is executed using the "Words" dataset. At the end of the execution, **A** captures the number of sentences with at least two nouns that have at most 2 vowels. 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, C = 0
 2
    while(Table 1 has more rows){
 3
        Read the first row X from Table 1
        if(X.PartOfSpeech == "Noun" and CountVowels(X) <= 2){}
 4
            C = C + 1
 5
        }
 6
        if(X.Word ends with a full stop){
 7
             if (c >= 2){
 8
 9
                 A = A + 1
10
                 C = 0
11
             }
        }
12
        Move X to Table 2
13
14
    Procedure CountVowels(Y)
15
        i = 1, B = 0
16
17
        while(i <= Y.LetterCount){</pre>
             if(ith letter of Y.Word is a vowel){
18
                 B = B + 1
19
                 i = i + 1
20
21
             }
22
        }
23
        return(B)
24
    End CountVowels
```

Options:

```
6406531160071. ★ Line 5: Error in updating C
6406531160072. ★ Line 9: A is updated at a wrong place
6406531160073. ✓ Line 10: C is updated at a wrong place
6406531160074. ★ Line 19: B is updated at a wrong place
6406531160075. ✓ Line 20: i is updated at a wrong place
6406531160076. ★ Line 23: Return value is incorrect
```

Question Number: 67 Question Id: 640653349263 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

The following pseudocode is executed using the "Library" dataset. At the end of the execution, A

captures the number of pairs of books that are released in the same year and under the same genre but in different languages. 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
 2
    while(Table 1 has more rows){
 3
        Read the first row X from Table 1
 4
        Move X to Table 2
        while(Table 1 has more rows){
 5
            Read the first row Y from Table 1
 6
            B = False, C = False, D = True
 7
 8
            if(X.Genre == Y.Genre){
                 B = True
 9
10
            if(X.Year == Y.Year){
11
                 C = False
12
13
14
            if(X.Language == Y.Language){
15
                 D = False
16
            if(B or C or D){
17
18
                 A = A + 1
19
            Move Y to Table 3
20
21
22
        Move all rows from Table 3 to Table 1
23
    }
```

Options:

```
6406531160078. ★ Line 1: A is initialized with wrong value 6406531160079. ★ Line 9: B is updated with wrong value 6406531160080. ✓ Line 12: C is updated with wrong value 6406531160081. ★ Line 15: D is updated with wrong value 6406531160082. ✓ Line 17: Error in if-condition 6406531160083. ★ No error
```

Question Number : 68 Question Id : 640653349268 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

The following pseudocode is executed using the "Scores" dataset. At the end of the execution, **C** captures the number of pairs of students who have same date of birth, or the same City/Town but different gender. Choose the correct code fragment(s) to complete the pseudocode. It is a Multiple Select Question

```
1
   C = 0
2
   while(Table 1 has more rows){
3
       Read the first row X in Table 1
       Move X to Table 2
4
       while(Table 1 has more rows){
5
           Read the first row Y in Table 1
6
           *****
7
8
              Fill the code
           ******
9
10
           Move Y to Table 3
       1
11
       Move all rows from Table 3 to Table 1
12
13
   }
```

Options:

```
if(x.DateOfBirth == Y.DateOfBirth){
    C = C + 1
}

if(x.CityTown == Y.CityTown and x.Gender != Y.Gender){
    C = C + 1
}
```

6406531160096.

```
1  if(X.DateofBirth == Y.DateofBirth){
2     C = C + 1
3  }
4  else{
5     if(X.CityTown == Y.CityTown and X.Gender != Y.Gender){
6          C = C + 1
7     }
8  }
```

6406531160097.

```
if(x.DateOfBirth == Y.DateOfBirth){
   if(x.CityTown == Y.CityTown and X.Gender != Y.Gender){
        C = C + 1
   }
}
```

```
if((X.DateOfBirth == Y.DateOfBirth) or (X.CityTown == Y.CityTown and X.Gender
!= Y.Gender)){
        C = C + 1
        }
}
```

Sub-Section Number :

8

Sub-Section Id:

64065349825

Question Shuffling Allowed:

No

Question Id: 640653349265 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: (69 to 70)

Question Label: Comprehension

The following pseudocode is executed using the "Library" dataset. Assume that every author has published at least two books, and only one in a year.

```
1
    Count = 0, c = 0, Diff = 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
        while(Table 1 has more rows){
             Read the first row Y from Table 1
 6
             if(X.Author == Y.Author){
 7
                 Move the row Y to Table 2
 8
 9
            }
             else{
10
11
                 Move the row Y to Table 3
12
             7
13
        }
        Diff = doSomething(Table 2)
14
        if(Diff == c){
15
            Count = Count + 1
16
        }
17
        if(Diff > c){
18
19
             c = Diff
             Count = 1
20
        }
21
        Delete all the rows from Table 2
22
        Move all the rows from Table 3 to Table 1
23
24
    }
    Procedure doSomething(Table 2)
25
        A = 0, B = 0
26
        while(Table 2 has more rows){
27
             Read the first row Z from Table 2
28
             if(Z.Year > A){
29
30
                 B = A
                 A = Z.Year
31
32
            }
33
             if(Z.Year < A and Z.Year > B){
34
                 B = Z.Year
35
36
             Move the row Z to Table 4
37
        }
        return(A - B)
38
39
    End doSomething
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 69 Question Id : 640653349266 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 procedure doSomething return?

Options:

same author

6406531160088. Difference between year of publication of first and second book of the same author

6406531160089. **☼** Difference between year of publication of first and second book of authors 6406531160090. **৵** Difference between year of publication of latest and second latest book of the

6406531160091. * Difference between year of publication of first and latest book of authors

Question Number: 70 Question Id: 640653349267 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?

Options:

6406531160092. Number of authors with maximum gap between year of publication of their first and second book

6406531160093. Number of authors with minimum gap between year of publication of their first and second book

6406531160094. ✓ Number of authors with maximum gap between year of publication of their latest and second latest book

6406531160095. Number of authors with minimum gap between year of publication of their latest and second latest book

Stats-1

Section Id: 64065322050

Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	12
Number of Questions to be attempted :	12
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 :	64065349826
Question Shuffling Allowed :	No
Question Number : 71 Question Id : 640653349270	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 "QUALIFIER: STATIST MANDATORILY YOU HAVE TO ATTEND ALL THE SECTIONS.	TICS FOR DATA SCIENCE 1"
Options :	
6406531160104. ✓ Yes	

6406531160105. * No

Sub-Section Number: 2

Sub-Section Id: 64065349827

Question Shuffling Allowed : Yes

Question Number: 72 Question Id: 640653349271 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

A news analyst collected the data on magnitude of earthquakes in Delhi for a year and concluded that the mean magnitude of earthquake in Delhi since 1900 BC is 3.7 on the Richter scale. Based on the given information, choose the correct option(s):

Options:

6406531160106. ✓ It is a time-series data.

6406531160107. ***** It is a cross-sectional data.

6406531160108. * The nature of study is descriptive.

6406531160109. ✓ The nature of study is inferential.

Question Number: 73 Question Id: 640653349272 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

If the 75^{th} percentile of dataset 88, 70, x, 75, 76 is x, then what can be the possible value(s) of x?

Options:

6406531160110. ***** 76

6406531160111. * 75

6406531160112. 🗸 80

6406531160113. None of these

Sub-Section Number: 3

Sub-Section Id: 64065349828

Question Shuffling Allowed : Yes

Question Number: 74 Question Id: 640653349273 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 options is/are correct?

Options:

6406531160114. ✓ Language ability (i.e., Beginner, Intermediate, Proficient) has an ordinal scale of measurement.

6406531160115. Ranking of teams at the end of a cricket tournament has an interval scale of measurement.

6406531160116. ✓ City of birth has a nominal scale of measurement.

6406531160117. * Temperature in Fahrenheit has a ratio scale of measurement.

Question Number: 75 Question Id: 640653349274 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 about correlation coefficient?

Options:

6406531160118. * The correlation coefficient is sensitive to outliers.

6406531160119. ✓ The correlation coefficient between two variables is always less than the covariance between them.

6406531160120. * If the variables *X* and *Y* are independent, then the value of the correlation coefficient is zero.

6406531160121. * The range of correlation coefficient is same as the range of point bi-serial correlation coefficient.

Sub-Section Number: 4

Sub-Section Id: 64065349829

Question Shuffling Allowed: No

Question Id: 640653349275 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: (76 to 77)

Question Label: Comprehension

Figure Q.1 shows the number of candidates participated in different events in a college fest. Based on this information, answer the given subquestions.

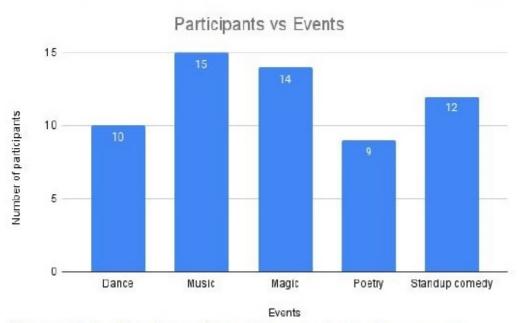


Figure Q.1: Number of participants in various events

Sub questions

 ${\bf Question\ Number: 76\ Question\ Id: 640653349276\ Question\ Type: SA\ Calculator: None}$

 $\label{lem:ness} \textbf{Response Time: N.A Think Time: N.A Minimum Instruction Time: 0}$

Correct Marks: 2

Question Label: Short Answer Question

What is the relative frequency corresponding to the event Standup comedy? (Enter the answer correct to 2 decimal places)

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Text Areas : PlainText

Possible Answers:

0.17 to 0.23

Question Number: 77 Question Id: 640653349277 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

If the count of candidates participated in each event is increased by 1, then choose the correct option/s?

Options:

6406531160123. ✓ Mode of the data set will remain same.

6406531160124. Median of the data set will remain same.

6406531160125. Mode of the data set will change.

6406531160126. Mean of the data set will change.

Question Id: 640653349283 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: (78 to 79)

Question Label: Comprehension

The data of second-hand cars is collected and shown in Table 1.3.Q. The car seller used this data to predict the price of his car in the market. Based on the given information, answer the given subquestions.

Brand	Model Name	Fuel Type	Number of Cylinders	Mileage	Price (in USD)
Audi	A6 45 TFSI	Petrol	4	17.2	17000
Audi	A7 3.0 TFSI	Petrol	3	13.8	23210
Honda	Amaze VX CVT	Gas	4	19	16550
Hyundai	i10 Sportz	Gas	2	27.1	18000
Hyundai	i20 Magna	Diesel	4	15	18550
Honda	Jazz 1.5 i-MMD	Diesel	4	22	12000

Table 1.3.Q

Sub questions

Question Number: 78 Question Id: 640653349284 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 true?

Options:

6406531160137. ✓ Jazz 1.5 i-MMD is a case and Brand is a variable

6406531160138. * Mileage is a case

6406531160139. * Gas is a variable

6406531160140. * Honda is a case

6406531160141. ✓ Number of Cylinders is a variable

6406531160142. Price is a variable

Question Number: 79 Question Id: 640653349285 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 true?

Options:

6406531160143. Number of Cylinders is a quantitative and continuous variable.

6406531160144. ✓ Mileage is a quantitative and continuous variable.

6406531160145. ✓ Fuel Type is a qualitative variable.

6406531160146. Model Name is a quantitative variable.

Sub-Section Number: 5

Sub-Section Id: 64065349830

Question Shuffling Allowed : Yes

Question Number: 80 Question Id: 640653349278 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 mean height of 6 members of group-A is 6 feet ar	nd the mean height of n members of group-B
is 4 feet. If the sum of the heights of all members of b	oth groups is same, then find the value of n
Response Type: Numeric	
Evaluation Required For SA: Yes	
Show Word Count: Yes	
Answers Type: Equal	
Text Areas: PlainText	
Possible Answers :	
9	
Question Number: 81 Question Id: 640653349286	Question Type : SA Calculator : None
Response Time: N.A Think Time: N.A Minimum Ins	struction Time : 0
Correct Marks : 4	
Question Label : Short Answer Question	
If the population standard deviation of a dataset is 14	and the sample standard deviation of the
same dataset is 15, find the number of observations in	n the dataset. (Enter the value as next
highest integer)	
Response Type: Numeric	
Evaluation Required For SA : Yes	
Show Word Count: Yes	
Answers Type: Equal	
Text Areas: PlainText	
Possible Answers :	
8	
Sub-Section Number :	6
Sub-Section Id :	64065349831
Question Shuffling Allowed :	Yes

Question Number: 82 Question Id: 640653349279 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

An analyst wants to know if the grades of a student is affected by the mode of delivery of education. He collects the data of students for the analysis and tabulated it in Table 1.1.Q.

Mode of delivery of education		Grades		
P	Α	В	С	
Online	21	11	18	
Offline	15	25	10	

Table 1.1.Q

Choose the correct option/s?

Options:

6406531160128. 36% of the students got grade B in online mode.

6406531160129. ✓ 50% of the students got either grade A or grade C in offline mode.

6406531160130. * There is no association between the mode of delivery of education and grades of the student.

6406531160131. ✓ There is an association between the mode of delivery of education and grades of the student.

Sub-Section Number: 7

Sub-Section Id: 64065349832

Question Shuffling Allowed: No

Question Id: 640653349280 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 : (83 to 84)

Question Label: Comprehension

Six employees are randomly selected from an office to check if their average working hours per

week are affected by smoking. Their smoking behaviour and average working hours per week are recorded in Table 1.2.Q. Based on the given information, answer the given subquestions.

Employee	Smoker	Average working hours per week
Employee 1	Yes	38
Employee 2	No	45
Employee 3	No	32
Employee 4	Yes	42
Employee 5	No	22
Employee 6	Yes	13

Table 1.2.Q

Sub questions

Question Number: 83 Question Id: 640653349281 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

Calculate the absolute value of Point Bi-serial correlation coefficient between smoking behaviour and average working hours per week. (Enter the answer correct to 2 decimal places)

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Range

Text Areas: PlainText

Possible Answers:

0.04 to 0.14

Question Number: 84 Question Id: 640653349282 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

Are the average working hours per week of the employees strongly influenced by their smoking

behaviour?

Options:

6406531160133. *Yes, because the absolute value of Point Bi-serial coefficient is close to 1.

6406531160134. No, because the absolute value of Point Bi-serial coefficient is close to 1.

6406531160135. *Yes, because the absolute value of Point Bi-serial coefficient is close to 0.

6406531160136. ✓ No, because the absolute value of Point Bi-serial coefficient is close to 0.

Sub-Section Number: 8

Sub-Section Id: 64065349833

Question Shuffling Allowed: No

Question Id: 640653349287 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: (85 to 86)

Question Label: Comprehension

Table 1.4.Q. represents the stock of four different items in an electronic shop. If the distribution of TV is 25% and DVD players is 15%, of all the items, then based on the given information, answer the given subquestions.

Items	Number of items
TV	500
DVD players	x
MP3 players	300
Pen drives	y

Table 1.4.Q

Sub questions

Question Number: 85 Question Id: 640653349288 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

What is the number of DVD players in the shop?

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Equal

Text Areas: PlainText

Possible Answers:

300

Question Number: 86 Question Id: 640653349289 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 number of Pen drives in the shop?

Response Type: Numeric

Evaluation Required For SA: Yes

Show Word Count: Yes

Answers Type: Equal

Text Areas : PlainText

Possible Answers:

900