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 IBA
Subject Name :	2022 July: IIT M QUALIFIER EXAM QPA1
Creation Date :	2022-07-06 19:04:34
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 :	1
Group Id :	6406538792
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 :	64065322025
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 Clear Response : Yes

Maximum Instruction Time : 0

Sub-Section Number : 1

Sub-Section Id : 64065349661

Question Shuffling Allowed : No

Question Number : 1 Question Id : 640653348618 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 :

6406531158362. ✔ Yes

6406531158363. ✖ No

Question Number : 2 Question Id : 640653348619 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

Instructions:

- There are some questions which have functions with discrete valued domains (such as day, month, year etc). For simplicity, we treat them as continuous functions.

- For NAT type question, enter only one right answer even if you get multiple answers for that particular question.

- Notations:
  - $\mathbb{R}$= Set of real numbers
  - $\mathbb{Q}$= Set of rational numbers
  - $\mathbb{Z}$= Set of integers
  - $\mathbb{N}$= Set of natural numbers

- The set of natural numbers includes 0.

Options :

6406531158364. ✔ Useful Data has been mentioned above.

6406531158365. ✖ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 64065349662

Question Shuffling Allowed : Yes

Question Number : 3 Question Id : 640653348629 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 :

6406531158386. ✖ $f(x)$ is an injective function.

6406531158387. ✔ $D \geq 0$, where D is the discriminant of $f(x)$.

6406531158388. ✔ $f(x)$ can be $-0.1\,(x + 20)\,(x - 10)$.

6406531158389. ✖ $f(x)$ can be $-0.1\,(x-20)\,(x+10)$.

Sub-Section Number :   3

Sub-Section Id :   64065349663

Question Shuffling Allowed :   Yes

Question Number : 4 Question Id : 640653348620 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 :

6406531158366. ✔ *R* is neither reflexive, nor symmetric and nor transitive

6406531158367. ✔ *R* is an anti-symmetric relation.

6406531158368. ✖ *R* is an identity relation.

6406531158369. ✖ *R* is an equivalence relation.

Question Number : 5 Question Id : 640653348621 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 :

6406531158370. ✔ Coordinates of *A* and *B* are (50, 50) and (80, 50) respectively.

6406531158371. ✳ Coordinates of *A* and *B* are (50, 25) and (100, 50) respectively.

6406531158372. ✳ Coordinates of *A* and *B* are (40, 65) and (100, 115) respectively.

6406531158373. ✔ Coordinates of *A* and *B* are (50, 20) and (50, 50) respectively.

Question Number : 6 Question Id : 640653348625 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 :

6406531158380. ✔ Including the year in which the company was launched, it neither made profit nor loss six times in 12 years.

6406531158381. ✳ The company made profit in years $x \in \{7, 8, 10, 11\}$.

6406531158382. ✔ The company made loss $(-ve$ profit) in years $x \in \{5, 6, 7, 8\}$.

6406531158383. ✔ In the year 2022 (i.e., $x = 12$) the company made profit.

Sub-Section Number :	4
Sub-Section Id :	64065349664
Question Shuffling Allowed :	Yes

Question Number : 7 Question Id : 640653348623 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 :

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

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

6406531158375. ✔

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

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

6406531158376. ✔

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

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

6406531158377. ✖

$$f : \mathbb{R} \longrightarrow \mathbb{R}$$
$$f(n) = n - 2$$

6406531158378. ✔

Sub-Section Number :	5
Sub-Section Id :	64065349665
Question Shuffling Allowed :	Yes

Question Number : 8 Question Id : 640653348624 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)
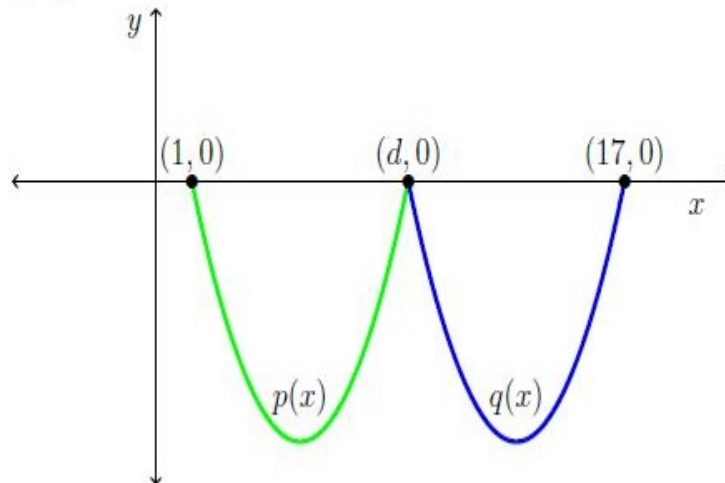

Figure 2

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 : 640653348630 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 : 640653348631 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 :	64065349666
Question Shuffling Allowed :	Yes

Question Number : 11 Question Id : 640653348622 Question Type : SA Calculator : None

Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Short Answer Question

Consider the following sets,

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

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 :	64065349667
Question Shuffling Allowed :	No

Question Id : 640653348626 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

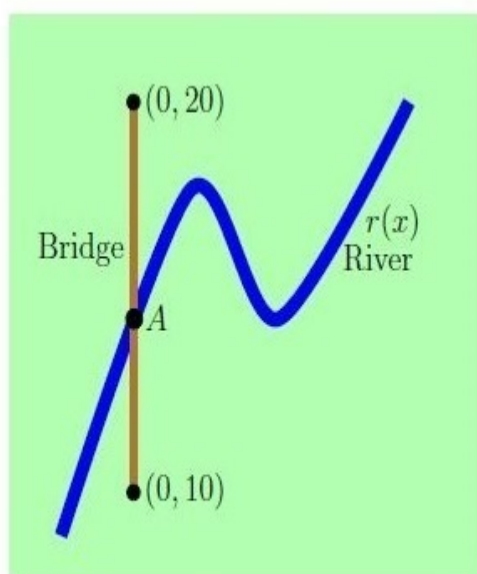| x	-10	-5	1	10	15
y	-150	-30	15	15	50

Table 1

Figure 2: River and bridge

Sub questions

Question Number : 12 Question Id : 640653348627 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

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 : 640653348628 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 :	64065322026
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 :	64065349668
Question Shuffling Allowed :	No

Question Number : 14 Question Id : 640653348632 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: ENGLISH 1"

MANDATORILY YOU HAVE TO ATTEND ALL THE SECTIONS.

Options :

6406531158392. ✔ Yes

6406531158393. ✖ No

Sub-Section Number :	2
Sub-Section Id :	64065349669
Question Shuffling Allowed :	No

Question Id : 640653348633 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (15 to 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 : 640653348634 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 :

6406531158394. ✔ Dawn

6406531158395. ✖ Dusk

6406531158396. ✖ Evening

6406531158397. ✖ Noon

Question Number : 16 Question Id : 640653348635 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 :

6406531158398. ✔ Fall

6406531158399. ✖ Fly

6406531158400. ✖ Uneasy

6406531158401. ✖ Struggle

Question Number : 17 Question Id : 640653348636 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 :

6406531158402. ✖ Lever

6406531158403. ✖ Pipe

6406531158404. ✔ Beam

6406531158405. ✖ Bean

Question Number : 18 Question Id : 640653348637 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 :

6406531158406. ✱ Positive

6406531158407. ✱ Comparative

6406531158408. ✔ Superlative

6406531158409. ✱ There is no adjective

Question Number : 19 Question Id : 640653348638 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 :

6406531158410. ✔ Sink

6406531158411. ✱ Scold
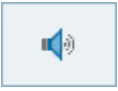
6406531158412. ✱ Breakdown

6406531158413. ✱ Fixate

Question Id : 640653348639 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:

885_640653_0_1984128_hs1001qfq2e1s1q6mq.mp3

Sub questions

Question Number : 20 Question Id : 640653348640 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 :

6406531158414. ✻ The girl who was shot by the Taliban

6406531158415. ✻ The girl who fought for her rights

6406531158416. ✻ A Nobel Prize laureate

6406531158417. ✔ All of these

Question Number : 21 Question Id : 640653348641 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 :

6406531158418. ✻ Honoured

6406531158419. ✻ Achieved

6406531158420. ✔ Deprived

6406531158421. ✻ Forgotten

Question Number : 22 Question Id : 640653348642 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 :

6406531158422. ✳ Land

6406531158423. ✳ Lent

6406531158424. ✔ Lend

6406531158425. ✳ Lank

Question Number : 23 Question Id : 640653348643 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 :

6406531158426. ✔ Rights of children

6406531158427. ✳ Racial equality

6406531158428. ✳ Environmental issues

6406531158429. ✳ All of these

Question Number : 24 Question Id : 640653348644 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 :

6406531158430. ✳ Cultural and artistic production

6406531158431. ✳ Resolving the border conflict

6406531158432. ✖ Achieving peace and international cooperation

6406531158433. ✔ Girls' right to education

Sub-Section Number :   3

Sub-Section Id :   64065349670

Question Shuffling Allowed :   No

Question Id : 640653348645 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 : 640653348646 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 :

6406531158434. ✖ Hello! Is that?

6406531158435. ✱ What's up?

6406531158436. ✔ Who's calling, please?

Question Number : 26 Question Id : 640653348647 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 :

6406531158437. ✱ There is none of that name here.

6406531158438. ✔ How may I help you?

6406531158439. ✱ Please, hang up.

Question Number : 27 Question Id : 640653348648 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 :

6406531158440. ✱ Talk with you?

6406531158441. ✱ Make an appointment with you sometime this week?

6406531158442. ✱ Discuss this with you?

6406531158443. ✔ All of these

Question Number : 28 Question Id : 640653348649 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 :

6406531158444. ✳ Sorry! I think you have got the wrong number.

6406531158445. ✳ I can't get through.

6406531158446. ✔ Take care. Goodbye!

6406531158447. ✳ Who am I speaking to, please?

Question Number : 29 Question Id : 640653348650 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 :

6406531158448. ✔ Formal

6406531158449. ✳ Informal

Question Id : 640653348666 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	B
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 : 640653348667 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 :

6406531158487. ✱ i

6406531158488. ✱ ii

6406531158489. ✔ iii

6406531158490. ✱ iv

6406531158491. ✱ v

Question Number : 31 Question Id : 640653348668 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

Scenic

Options :

6406531158492. ✱ i

6406531158493. ✱ ii

6406531158494. ✱ iii

6406531158495. ✔ iv

6406531158496. ✱ v

Question Number : 32 Question Id : 640653348669 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 :

6406531158497. ✔ i

6406531158498. ✖ ii

6406531158499. ✖ iii

6406531158500. ✖ iv

6406531158501. ✖ v

Question Number : 33 Question Id : 640653348670 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 :

6406531158502. ✖ i

6406531158503. ✔ ii

6406531158504. ✖ iii

6406531158505. ✖ iv

6406531158506. ✖ v

Question Number : 34 Question Id : 640653348671 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 :

6406531158507. ✖ i

6406531158508. ✱ ii

6406531158509. ✱ iii

6406531158510. ✱ iv

6406531158511. ✔ v

Sub-Section Number : 4

Sub-Section Id : 64065349671

Question Shuffling Allowed : Yes

Question Number : 35 Question Id : 640653348651 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 :

6406531158450. ✱ With a short vowel

6406531158451. ✔ With a long vowel

Question Number : 36 Question Id : 640653348652 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 :

6406531158452. ✱ Precious

6406531158453. ✔ Measure

6406531158454. ✱ Moustache

6406531158455. ✱ None of these

Question Number : 37 Question Id : 640653348653 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 :

6406531158456. ✻ Pneumonia

6406531158457. ✻ Psychology

6406531158458. ✻ Photon

6406531158459. ✔ All of these

Question Number : 38 Question Id : 640653348654 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 :

6406531158460. ✔ An

6406531158461. ✻ A

Question Number : 39 Question Id : 640653348655 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 :

6406531158462. ✻ An

6406531158463. ✔ A

Question Number : 40 Question Id : 640653348656 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 :

6406531158464. ✺ We do not question the people in authority.

6406531158465. ✺ I have decided to question this behavior.

6406531158466. ✔ This is a very disturbing question.

Question Number : 41 Question Id : 640653348657 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 :

6406531158467. ✺ proliFIC

6406531158468. ✺ PROlific

6406531158469. ✔ proLIfic

Question Number : 42 Question Id : 640653348658 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 :

6406531158470. ✔ INstantly

6406531158471. ✖ instantLY

6406531158472. ✖ inSTANTly

Question Number : 43 Question Id : 640653348659 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 :

6406531158473. ✖ TRUE

6406531158474. ✔ FALSE

Question Number : 44 Question Id : 640653348660 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 :

6406531158475. ✔ TRUE

6406531158476. ✖ FALSE

Question Number : 45 Question Id : 640653348661 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 :

6406531158477. ✔ Preposition

6406531158478. ✖ Adverb

Question Number : 46 Question Id : 640653348662 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 :

6406531158479. ✖ The voice is clear and audible

6406531158480. ✔ The voice is unclear and gets cut off from time to time

Question Number : 47 Question Id : 640653348663 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 :

6406531158481. ✳ Present

6406531158482. ✔ Past

Question Number : 48 Question Id : 640653348664 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 :

6406531158483. ✳ Emphatic

6406531158484. ✔ Dubious

Question Number : 49 Question Id : 640653348665 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 :

6406531158485. ✔ Acquit

6406531158486. ✳ Arrest

Question Number : 50 Question Id : 640653348672 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 :

6406531158512. ✸ Phrases

6406531158513. ✸ Clauses

6406531158514. ✸ Sentences

6406531158515. ✔ All of these

Question Number : 51 Question Id : 640653348673 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 :

6406531158516. ✸ 2, 2

6406531158517. ✸ 3, 2

6406531158518. ✔ 3, 3

6406531158519. ✸ 2, 3

Question Number : 52 Question Id : 640653348674 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 :

6406531158520. ✔ TRUE

6406531158521. ✸ FALSE

Question Number : 53 Question Id : 640653348675 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 :

6406531158522. ✳ Mr./ Brown/ your cab/is here//

6406531158523. ✳ Mr. Brown your/ cab /is here//

6406531158524. ✳ Mr./ Brown your cab is here//

6406531158525. ✔ Mr. Brown/ your cab is here//

Question Number : 54 Question Id : 640653348676 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 :

6406531158526. ✔ TRUE

6406531158527. ✳ FALSE

CT

Section Id :	64065322027
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
                                                        Yes
Clear Response :

Maximum Instruction Time :   0

Sub-Section Number :   1

Sub-Section Id :   64065349672

Question Shuffling Allowed :   No

Question Number : 55 Question Id : 640653348677 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 :

6406531158528. ✔ Yes

6406531158529. ✖ No

Question Number : 56 Question Id : 640653348678 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	CityTown	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 :

6406531158530. ✔ Useful Data has been mentioned above.

Sub-Section Number :   2

Sub-Section Id :   64065349673

Question Shuffling Allowed :   Yes

Question Number : 57 Question Id : 640653348679 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?

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

Options :

6406531158532. ✱ Number of words with at most one vowel

6406531158533. ✱ Number of words with exactly one vowel

6406531158534. ✱ Number of words with only vowels

6406531158535. ✔ Number of words without vowels

Question Number : 58 Question Id : 640653348680 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.

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

Options :

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

6406531158536. ✔

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

6406531158537. ✖

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

6406531158538. ✖

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

6406531158539. ✖

Question Number : 59 Question Id : 640653348681 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?

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

Options :

6406531158540. ✖ Number of authors who have not published a book in the most recent year

6406531158541. ✖ Number of authors who have not published maximum number of books

6406531158542. ✔ Number of books which are not published in the most recent year

6406531158543. ✖ Number of authors who have published a book in the most recent year

Sub-Section Number :   3

Sub-Section Id :   64065349674

Question Shuffling Allowed :   Yes

Question Number : 60 Question Id : 640653348683 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){
4           Read the first row X in Table 1
5           if(X.Author == A){
6               if(X.Year > C){
7                   C = X.Year
8               }
9               if(X.Year < D){
10                  D = X.Year
11              }
12          }
13          Move X to Table 2
14      }
15      if(C - D >= B){
16          return(True)
17      }
18      else{
19          return(False)
20      }
21  End DoSomething
```

Options :

6406531158548. ✷ Outputs *True* if the second book of author **A** was published at least **B** years after his/her first book

6406531158549. ✔ Outputs *True* if the last book of author **A** was published at least **B** years after his/her first book

6406531158550. ✷ Outputs *True* if the last book of author **A** was published at least **B** years after his/her second last book

6406531158551. ✷ None of these

Question Number : 61 Question Id : 640653348685 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
 2   while(Table 1 has more rows){
 3       Read the first row X from Table 1
 4       count = count + checkSomething(X)
 5       Move X to Table 2
 6   }
 7   Procedure checkSomething(Z)
 8       i = Z.LetterCount
 9       while(i > 0){
10           if(ith letter of Z.Word is vowel){
11               return(0)
12           }
13           i = i - 1
14       }
15       return(1)
16   End checkSomething
```

Options :

6406531158559. ✖ Number of vowels

6406531158560. ✖ Number of words that have only vowels

6406531158561. ✔ Number of words that have only consonants

6406531158562. ✖ Number of words that have both vowels and consonants

6406531158563. ✖ None of these

Sub-Section Number : 4

Sub-Section Id : 64065349675

Question Shuffling Allowed : Yes

Question Number : 62 Question Id : 640653348682 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.

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

Options :

```
1   else {
2        if(C > B and B > A){
3            Sum = A + C
4        }
5        else{
6            Sum = A + B
7        }
8   }
```
6406531158544. ✖

```
1   if(B > C and B > A){
2        Sum = A + C
3   }
4   else{
5        Sum = A + B
6   }
```
6406531158545. ✖

6406531158546. ✖

```
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  }
```

6406531158547. ✔

Question Number : 63 Question Id : 640653348688 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?

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

Options :

6406531158577. ✱ Number of authors who have written exactly one book under genre "Fiction"

6406531158578. ✱ Number of pairs of authors who have not written any book under genre "Fiction"

6406531158579. ✔ Number of authors who have written books only under genre "Fiction"

6406531158580. ✱ Number of pairs of authors who have written books only under genre "Fiction"

Sub-Section Number :   5

Sub-Section Id :   64065349676

Question Shuffling Allowed :   Yes

Question Number : 64 Question Id : 640653348684 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).

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

Options :

6406531158552. ✱ Error in Line 1

6406531158553. ✱ Error in Line 4

6406531158554. ✱ Error in Line 5

6406531158555. ✱ Error in Line 10

6406531158556. ✱ Error in Line 11

6406531158557. ✱ Multiple *return(False)* in procedure **CheckSomething**

6406531158558. ✔ No error

Sub-Section Number :　　　　　　　　　　　6

Sub-Section Id :　　　　　　　　　　　64065349677

Question Shuffling Allowed : Yes

Question Number : 65 Question Id : 640653348693 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?

```
1   count = 0
2   while(Table 1 has more rows){
3       Read the first row X in Table 1
4       Move X to Table 2
5       while(Table 1 has more rows){
6           Read the first row Y from Table 1
7           count = count + isSimilar(X, Y)
8           Move Y to Table 3
9       }
10      Move all rows from Table 3 to Table 1
11  }
12  Procedure isSimilar(A, B)
13      if(A.LetterCount != B.LetterCount){
14          return (0)
15      }
16      i = 1
17      while(i <= A.LetterCount){
18          if(ith letter of A.Word is vowel and ith letter of B.Word is vowel){
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          }
24          i = i + 1
25      }
26      return(1)
27  End isSimilar
```

Options :

6406531158593. ✖ Number of pairs of words with different letter count and the position of vowels and consonants in both words are same

Sub-Section Number :	7
Sub-Section Id :	64065349678
Question Shuffling Allowed :	Yes

Question Number : 66 Question Id : 640653348686 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
4       if(X.PartOfSpeech == "Noun" and CountVowels(X) <= 2){
5           C = C + 1
6       }
7       if(X.Word ends with a full stop){
8           if (C >= 2){
9               A = A + 1
10              C = 0
11          }
12      }
13      Move X to Table 2
14  }
15  Procedure CountVowels(Y)
16      i = 1, B = 0
17      while(i <= Y.LetterCount){
18          if(ith letter of Y.Word is a vowel){
19              B = B + 1
20              i = i + 1
21          }
22      }
23      return(B)
24  End CountVowels
```

Options :

6406531158564. ✳ Line 5: Error in updating **C**

6406531158565. ✳ Line 9: **A** is updated at a wrong place

6406531158566. ✔ Line 10: **C** is updated at a wrong place

6406531158567. ✳ Line 19: **B** is updated at a wrong place

6406531158568. ✔ Line 20: **i** is updated at a wrong place

6406531158569. ✳ Line 23: Return value is incorrect

6406531158570. ✳ No error

Question Number : 67 Question Id : 640653348687 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   A = 0
2   while(Table 1 has more rows){
3        Read the first row X from Table 1
4        Move X to Table 2
5        while(Table 1 has more rows){
6             Read the first row Y from Table 1
7             B = False, C = False, D = True
8             if(X.Genre == Y.Genre){
9                  B = True
10            }
11            if(X.Year == Y.Year){
12                 C = False
13            }
14            if(X.Language == Y.Language){
15                 D = False
16            }
17            if(B or C or D){
18                 A = A + 1
19            }
20            Move Y to Table 3
21       }
22       Move all rows from Table 3 to Table 1
23  }
```

Options :

6406531158571. ✱ Line 1: **A** is initialized with wrong value

6406531158572. ✱ Line 9: **B** is updated with wrong value

6406531158573. ✔ Line 12: **C** is updated with wrong value

6406531158574. ✱ Line 15: **D** is updated with wrong value

6406531158575. ✔ Line 17: Error in if-condition

6406531158576. ✱ No error

Question Number : 68 Question Id : 640653348692 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
4       Move X to Table 2
5       while(Table 1 has more rows){
6           Read the first row Y in Table 1
7           ***********************
8           *   Fill the code   *
9           ***********************
10          Move Y to Table 3
11      }
12      Move all rows from Table 3 to Table 1
13  }
```

Options :

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

6406531158589. ✖

```
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   }
```

6406531158590. ✔

6406531158591. ✖

```
1  if(X.DateOfBirth == Y.DateOfBirth){
2      if(X.CityTown == Y.CityTown and X.Gender != Y.Gender){
3          C = C + 1
4      }
5  }
```

```
1  if((X.DateOfBirth == Y.DateOfBirth) or (X.CityTown == Y.CityTown and X.Gender
   != Y.Gender)){
2      C = C + 1
3  }
```

6406531158592. ✔

Sub-Section Number :	8
Sub-Section Id :	64065349679
Question Shuffling Allowed :	No

Question Id : 640653348689 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
 5      while(Table 1 has more rows){
 6          Read the first row Y from Table 1
 7          if(X.Author == Y.Author){
 8              Move the row Y to Table 2
 9          }
10          else{
11              Move the row Y to Table 3
12          }
13      }
14      Diff = doSomething(Table 2)
15      if(Diff == c){
16          Count = Count + 1
17      }
18      if(Diff > c){
19          c = Diff
20          Count = 1
21      }
22      Delete all the rows from Table 2
23      Move all the rows from Table 3 to Table 1
24  }
25  Procedure doSomething(Table 2)
26      A = 0, B = 0
27      while(Table 2 has more rows){
28          Read the first row Z from Table 2
29          if(Z.Year > A){
30              B = A
31              A = Z.Year
32          }
33          if(Z.Year < A and Z.Year > B){
34              B = Z.Year
35          }
36          Move the row Z to Table 4
37      }
38      return(A - B)
39  End doSomething
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 69 Question Id : 640653348690 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 :

6406531158581. ✻ Difference between year of publication of first and second book of the same author

6406531158582. ✻ Difference between year of publication of first and second book of authors

6406531158583. ✔ Difference between year of publication of latest and second latest book of the same author

6406531158584. ✻ Difference between year of publication of first and latest book of authors

Question Number : 70 Question Id : 640653348691 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 :

6406531158585. ✻ Number of authors with maximum gap between year of publication of their first and second book

6406531158586. ✻ Number of authors with minimum gap between year of publication of their first and second book

6406531158587. ✔ Number of authors with maximum gap between year of publication of their latest and second latest book

6406531158588. ✻ Number of authors with minimum gap between year of publication of their latest and second latest book

Stats-1

Section Id : 64065322028

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 :	64065349680
Question Shuffling Allowed :	No

Question Number : 71 Question Id : 640653348694 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: STATISTICS FOR DATA SCIENCE 1"

MANDATORILY YOU HAVE TO ATTEND ALL THE SECTIONS.

Options :

6406531158597. ✔ Yes

6406531158598. ✖ No

Sub-Section Number :	2
Sub-Section Id :	64065349681
Question Shuffling Allowed :	Yes

Question Number : 72 Question Id : 640653348695 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 :

6406531158599. ✔ It is a time-series data.

6406531158600. ✖ It is a cross-sectional data.

6406531158601. ✖ The nature of study is descriptive.

6406531158602. ✔ The nature of study is inferential.

Question Number : 73 Question Id : 640653348696 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 75th percentile of dataset 88, 70, x, 75, 76 is x, then what can be the possible value(s) of x?

Options :

6406531158603. ✔ 76

6406531158604. ✖ 75

6406531158605. ✔ 80

6406531158606. ✖ None of these

Sub-Section Number :	3
Sub-Section Id :	64065349682
Question Shuffling Allowed :	Yes

Question Number : 74 Question Id : 640653348697 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 :

6406531158607. ✔ Language ability (i.e., Beginner, Intermediate, Proficient) has an ordinal scale of measurement.

6406531158608. ✖ Ranking of teams at the end of a cricket tournament has an interval scale of measurement.

6406531158609. ✔ City of birth has a nominal scale of measurement.

6406531158610. ✖ Temperature in Fahrenheit has a ratio scale of measurement.

Question Number : 75 Question Id : 640653348698 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 :

6406531158611. ✖ The correlation coefficient is sensitive to outliers.

6406531158612. ✔ The correlation coefficient between two variables is always less than the covariance between them.

6406531158613. ✖ If the variables X and Y are independent, then the value of the correlation coefficient is zero.

6406531158614. ✖ The range of correlation coefficient is same as the range of point bi-serial correlation coefficient.

Sub-Section Number :	4
Sub-Section Id :	64065349683
Question Shuffling Allowed :	No

Question Id : 640653348699 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

Question Number : 76 Question Id : 640653348700 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 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 : 640653348701 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 :

6406531158616. ✔ Mode of the data set will remain same.

6406531158617. ✖ Median of the data set will remain same.

6406531158618. ✖ Mode of the data set will change.

6406531158619. ✖ Mean of the data set will change.

Question Id : 640653348707 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 : 640653348708 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 :

6406531158630. ✔ Jazz 1.5 i-MMD is a case and Brand is a variable

6406531158631. ✖ Mileage is a case

6406531158632. ✖ Gas is a variable

6406531158633. ✖ Honda is a case

6406531158634. ✔ Number of Cylinders is a variable

6406531158635. ✔ Price is a variable

Question Number : 79 Question Id : 640653348709 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 :

6406531158636. ✖ Number of Cylinders is a quantitative and continuous variable.

6406531158637. ✔ Mileage is a quantitative and continuous variable.

6406531158638. ✔ Fuel Type is a qualitative variable.

6406531158639. ✖ Model Name is a quantitative variable.

Sub-Section Number :	5
Sub-Section Id :	64065349684
Question Shuffling Allowed :	Yes

Question Number : 80 Question Id : 640653348702 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 and the mean height of n members of group-B is 4 feet. If the sum of the heights of all members of both 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 : 640653348710 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

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 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 :	64065349685
Question Shuffling Allowed :	Yes

Question Number : 82 Question Id : 640653348703 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		
	A	B	C
Online	21	11	18
Offline	15	25	10

Table 1.1.Q

Choose the correct option/s?

Options :

6406531158621. ✶ 36% of the students got grade B in online mode.

6406531158622. ✔ 50% of the students got either grade A or grade C in offline mode.

6406531158623. ✶ There is no association between the mode of delivery of education and grades of the student.

6406531158624. ✔ There is an association between the mode of delivery of education and grades of the student.

Sub-Section Number :	7
Sub-Section Id :	64065349686
Question Shuffling Allowed :	No

Question Id : 640653348704 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 : 640653348705 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 : 640653348706 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 :

6406531158626. ✻ Yes, because the absolute value of Point Bi-serial coefficient is close to 1.

6406531158627. ✻ No, because the absolute value of Point Bi-serial coefficient is close to 1.

6406531158628. ✻ Yes, because the absolute value of Point Bi-serial coefficient is close to 0.

6406531158629. ✔ No, because the absolute value of Point Bi-serial coefficient is close to 0.

Sub-Section Number :	8
Sub-Section Id :	64065349687
Question Shuffling Allowed :	No

Question Id : 640653348711 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 : 640653348712 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 : 640653348713 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