

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 FOUNDATION ET1 EXAM QPF1 S2 30
Apr 2023

Subject Name :

2023 Apr30: IIT M FOUNDATION ET1 EXAM
QPF1

Creation Date :

2023-04-21 18:12:00

Duration :

90

Total Marks :

580

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 :	64065313518
Group Maximum Duration :	0
Group Minimum Duration :	90
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	580
Is this Group for Examiner? :	No
Examiner permission :	Cant View
Show Progress Bar? :	No
Revisit allowed for group Instructions? :	Yes
Maximum Instruction Time :	0
Minimum Instruction Time :	0
Group Time In :	Minutes
Navigate To Group Summary From Last Question? :	No
Disable Submit Button During Assessment? :	No
Section Selection Time? :	0
No of Optional sections to be attempted :	0

Section Id :	64065338382
Section Number :	1
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 :	64065380764
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 640653565351 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "[FOUNDATION LEVEL : SEMESTER 1: MATHEMATICS FOR DATA SCIENCE 1 \(COMPUTER BASED EXAM\)](#)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE [TOP](#) FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531889810. ✓ YES

6406531889811. ✗ NO

Sub-Section Number : 2

Sub-Section Id : 64065380765

Question Shuffling Allowed : Yes

Is Section Default? : null

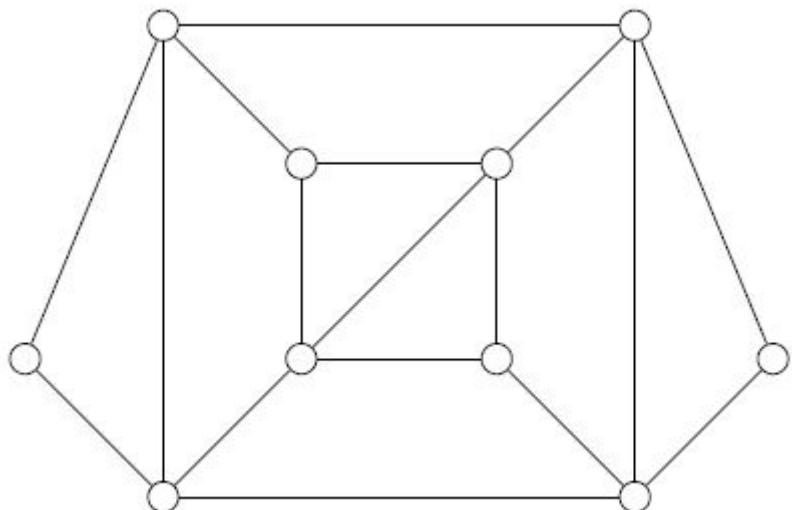
Question Number : 2 Question Id : 640653565352 Question Type : SA Calculator : None

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

Correct Marks : 3

Question Label : Short Answer Question

What is the minimum number of colours required to colour the graph given below?



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

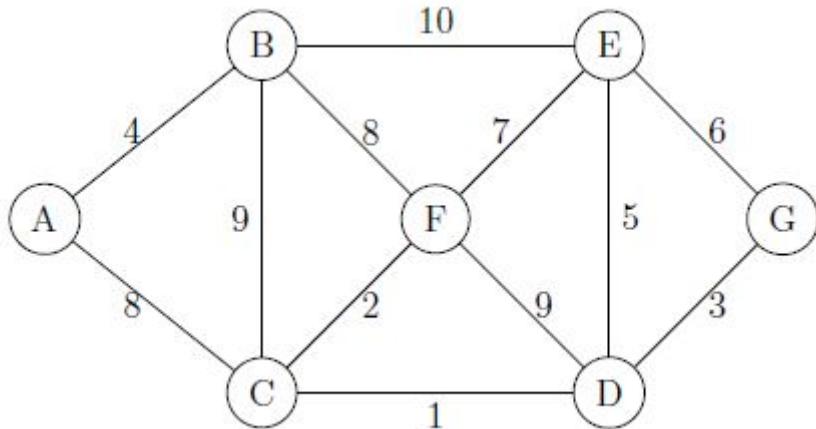
Question Number : 3 Question Id : 640653565355 Question Type : SA Calculator : None

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

Correct Marks : 3

Question Label : Short Answer Question

What is the weight of a minimum cost spanning tree of the given graph ?



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

23

Sub-Section Number : 3

Sub-Section Id : 64065380766

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 4 Question Id : 640653565353 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

How many edges are there in a graph with 10 vertices each of degree 6?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

30

Sub-Section Number : 4

Sub-Section Id : 64065380767

Question Shuffling Allowed : Yes

Is Section Default? : null

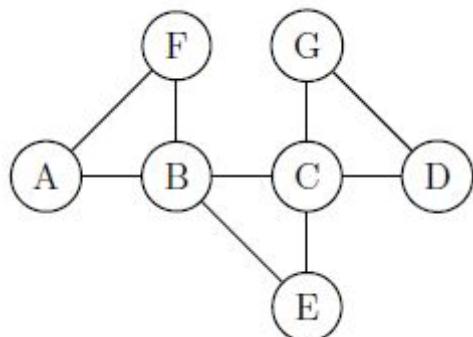
Question Number : 5 **Question Id :** 640653565354 **Question Type :** MCQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 4

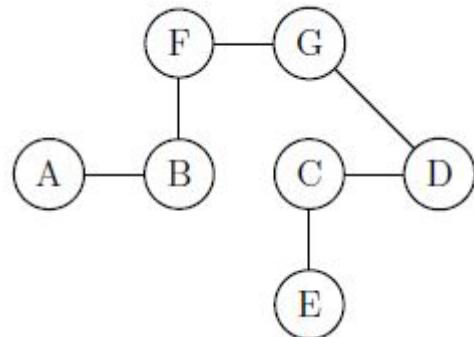
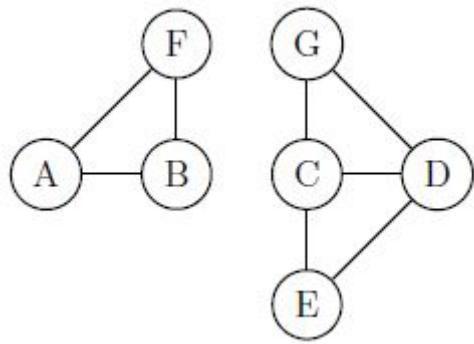
Question Label : Multiple Choice Question

Suppose we perform BFS so that when we visit a vertex, we explore its unvisited neighbors in a random order. Which of the following graphs could represent the edges explored by BFS starting at vertex 'E'?

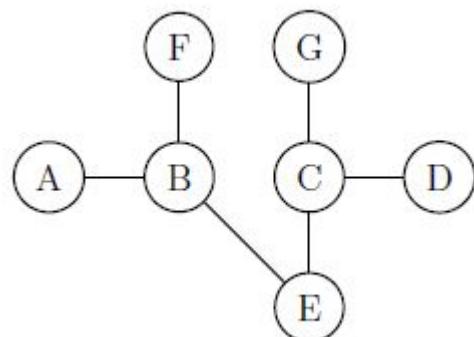


Options :

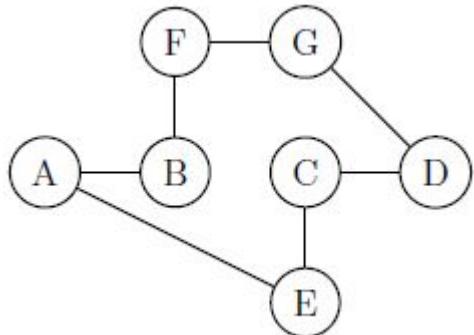
6406531889814. *



6406531889815. ✘



6406531889816. ✓



6406531889817. ✘

Sub-Section Number :

5

Sub-Section Id :

64065380768

Question Shuffling Allowed :

Yes

Is Section Default? :

null

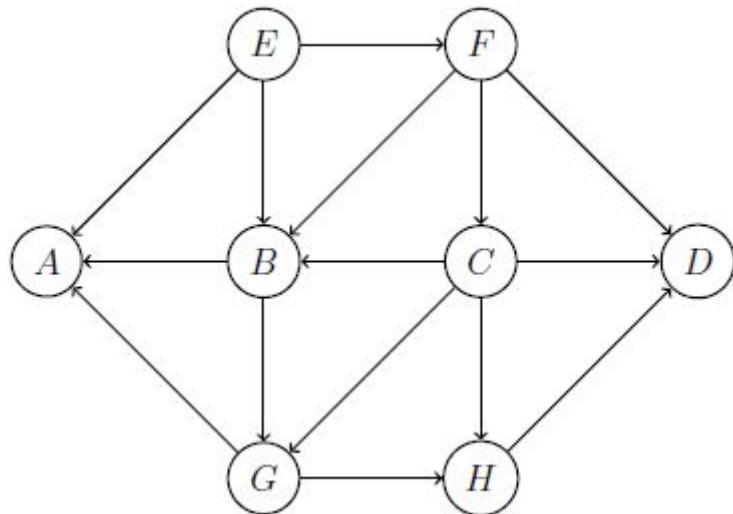
Question Number : 6 Question Id : 640653565356 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Selectable Option : 0

Question Label : Multiple Select Question

Which of the following are valid topological orderings of the given DAG ?



Options :

6406531889819. ✘ *E, F, C, B, A, G, H, D*

6406531889820. ✘ *E, F, B, C, G, A, H, D*

6406531889821. ✓ *E, F, C, B, G, A, H, D*

6406531889822. ✓ *E, F, C, B, G, H, D, A*

Sub-Section Number :

6

Sub-Section Id :

64065380769

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Id : 640653565357 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (7 to 8)

Question Label : Comprehension

Determine whether the given statements are true or false.

Sub questions

Question Number : 7 Question Id : 640653565358 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

There exists a sequence $\{x_n\}$ which is not increasing but $\{x_n\}$ has an increasing subsequence.

Options :

6406531889823. ✓ True.

6406531889824. ✗ False.

Question Number : 8 Question Id : 640653565359 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 sequence $(1, 2, 3, 4, 5, 6, \dots)$, that is, $a_n = n$ has a convergent subsequence.

Options :

6406531889825. ✗ True.

6406531889826. ✓ False.

Sub-Section Id : 64065380770

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 9 Question Id : 640653565363 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

The function $f(x) = x^3 - 12x$ has a

Options :

6406531889829. ✓ local maximum at $x = -2$.

6406531889830. ✗ local minimum at $x = -2$.

6406531889831. ✗ local maximum at $x = 2$.

6406531889832. ✓ local minimum at $x = 2$.

Sub-Section Number : 8

Sub-Section Id : 64065380771

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565364 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (10 to 11)

Question Label : Comprehension

Answer the given subquestions

Sub questions

Question Number : 10 Question Id : 640653565365 Question Type : SA Calculator : None

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

Correct Marks : 3

Question Label : Short Answer Question

Consider a function defined as,

$$f(x) = \begin{cases} x^3 + 5x + 1 & x \leq 0 \\ m \sin(x) + n \cos(x) & x > 0. \end{cases}$$

If f is differentiable at $x = 0$,

then the value of $m + n$ is

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Question Number : 11 Question Id : 640653565366 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

Let f be a differentiable function at $x = 2$. The tangent line to the curve represented by the function f at the point $(2, 6)$ passes through the point $(6, -18)$. What will be the value of $f'(2)$?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

-6

Question Id : 640653565376 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (12 to 13)

Question Label : Comprehension

Answer the given subquestions

Sub questions

Question Number : 12 Question Id : 640653565377 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

Find the number of solutions of the equation $\log_4 x + \log_4(x - 3) = 1$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 13 Question Id : 640653565378 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

If $(a, b) \subset \mathbb{R}$ denotes the largest interval which can be a domain for the function $f(x) = \log_2 (1 - \log_2(x^2 - 5x + 8))$, then find the value of $a + b$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

5

Sub-Section Number : 9

Sub-Section Id : 64065380772

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 14 **Question Id :** 640653565367 **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 equation of a line passing through the intersection of lines $x - y + 2 = 0$ and $3x + y - 10 = 0$, and perpendicular to the line $3x + 4y - 7 = 0$ is

Options :

6406531889835. ✘ $4x - 3y + 7 = 0$

6406531889836. ✘ $3x - y - 2 = 0$

6406531889837. ✓ $4x - 3y + 4 = 0$

6406531889838. ✘ $3x - y + 2 = 0$

Sub-Section Number :

10

Sub-Section Id :	64065380773
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653565360 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (15 to 16)

Question Label : Comprehension

Answer the given subquestions

Sub questions

Question Number : 15 Question Id : 640653565361 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Evaluate $\lim_{x \rightarrow \frac{\pi}{2}^-} \tan(x) - \sec(x)$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Number : 16 Question Id : 640653565362 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

$$\text{Evaluate } \pi - \int_0^{\frac{\pi^2}{4}} \cos(\sqrt{x}) dx.$$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Question Id : 640653565368 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (17 to 18)

Question Label : Comprehension

Answer the given subquestions

Sub questions

Question Number : 17 Question Id : 640653565369 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

If $x + a$ is one of the factors of

$$p(x) = 2x^2 + 2ax + 5x + 10,$$

then find the value of a .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Question Number : 18 Question Id : 640653565370 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

Consider a polynomial $p(x) = 4x^3 + 9x^2 + 3x + 2$.

If $p(x) = (x + 2)(ax^2 + bx + c)$, then find the value of $a + b + c$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Question Id : 640653565372 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (19 to 21)

Question Label : Comprehension

Answer the given subquestions

Sub questions

Question Number : 19 Question Id : 640653565373 Question Type : SA Calculator : None

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

Correct Marks : 1

Question Label : Short Answer Question

If $A = \{3, 5, 7, 9, 10\}$, $B = \{7, 9, 10, 13\}$,
and $C = \{10, 13, 15\}$ then find the
cardinality of $(A \cap B) \cap (B \cup C)$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Question Number : 20 **Question Id :** 640653565374 **Question Type :** MCQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider a function $f : \mathbb{R} \rightarrow \mathbb{R}$ defined as

$$f(x) = \begin{cases} x & \text{if } x \in \mathbb{Q} \\ 0 & \text{if } x \in \mathbb{R} \setminus \mathbb{Q}. \end{cases}$$

Then the range of the function f is

Options :

6406531889843. ✘ {0}

6406531889844. ✘ $(\mathbb{R} \setminus \mathbb{Q}) \cup \{0\}$

6406531889845. ✘ $\mathbb{R} \setminus \mathbb{Q}$

6406531889846. ✓ \mathbb{Q}

Question Number : 21 Question Id : 640653565375 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 function $f : \mathbb{R} \rightarrow \mathbb{R}$ given by $f(x) = \sin x$ is

Options :

6406531889847. ✘ one-one.

6406531889848. ✘ onto.

6406531889849. ✘ onto but not one-one.

6406531889850. ✓ none of these

Sub-Section Number : 11

Sub-Section Id : 64065380774

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 22 Question Id : 640653565371 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 a quadratic function $f(x) := ax^2 + bx + c$ which is symmetric about the line $x = -3$. The maximum value of f is 12 and it passes through the point $(0, 0)$. What is the value of $3a + b + c$?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Sem2 Statistics2

Section Id :	64065338383
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	12
Number of Questions to be attempted :	12
Section Marks :	40
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 :	64065380775
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 23 Question Id : 640653565379 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER 2: STATISTICS FOR DATA SCIENCE 2 (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531889853. ✓ YES

6406531889854. ✗ NO

Question Number : 24 Question Id : 640653565380 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

1. **Markov's inequality:** Let X be a discrete random variable taking non-negative values with a finite mean μ . Then,

$$P(X \geq c) \leq \frac{\mu}{c}$$

2. **Chebyshev's inequality:** Let X be a discrete random variable with a finite mean μ and a finite variance σ^2 . Then,

$$P(|X - \mu| \geq k\sigma) \leq \frac{1}{k^2}$$

3. **Weak Law of Large numbers:** Let $X_1, X_2, \dots, X_n \sim \text{iid } X$ with $E[X] = \mu$, $\text{Var}(X) = \sigma^2$.

Define sample mean $\bar{X} = \frac{X_1 + X_2 + \dots + X_n}{n}$. Then,

$$P(|\bar{X} - \mu| > \delta) \leq \frac{\sigma^2}{n\delta^2}$$

4. **Using CLT to approximate probability:** Let $X_1, X_2, \dots, X_n \sim \text{iid } X$ with $E[X] = \mu$, $\text{Var}(X) = \sigma^2$.

Define $Y = X_1 + X_2 + \dots + X_n$. Then,

$$\frac{Y - n\mu}{\sqrt{n}\sigma} \approx \text{Normal}(0, 1).$$

5. **Bias of an estimator:** $\text{Bias}(\hat{\theta}, \theta) = E[\hat{\theta}] - \theta$.

6. **Method of moments:** Sample moments, $M_k(X_1, X_2, \dots, X_n) = \frac{1}{n} \sum_{i=1}^n X_i^k$

Procedure: For one parameter θ

- Sample moment: m_1
- Distribution moment: $E(X) = f(\theta)$
- Solve for θ from $f(\theta) = m_1$ in terms of m_1 .
- $\hat{\theta}$: replace m_1 by M_1 in the above solution.

7. **Likelihood of i.i.d. samples:** Likelihood of a sampling x_1, x_2, \dots, x_n , denoted

$$L(x_1, \dots, x_n) = \prod_{i=1}^n f_X(x_i; \theta_1, \theta_2, \dots)$$

8. **Maximum likelihood (ML) estimation:**

$$\theta_1^*, \theta_2^*, \dots = \arg \max_{\theta_1^*, \theta_2^*, \dots} \prod_{i=1}^n f_X(x_i; \theta_1, \theta_2, \dots)$$

9. Bayesian estimation: Let $X_1, \dots, X_n \sim$ i.i.d. X , parameter Θ .

Prior distribution of Θ : $\Theta \sim f_\Theta(\theta)$.

Samples, $S : (X_1 = x_1, \dots, X_n = x_n)$

Posterior: $\Theta | (X_1 = x_1, \dots, X_n = x_n)$

Bayes' rule: Posterior \propto Prior \times Likelihood

Posterior density $\propto f_\Theta(\theta) \times P(X_1 = x_1, \dots, X_n = x_n | \Theta = \theta)$

10. Normal samples with unknown mean and known variance:

$X_1, \dots, X_n \sim$ i.i.d. Normal(M, σ^2).

Prior $M \sim$ Normal(μ_0, σ_0^2).

$$\text{Posterior mean: } \hat{\mu} = \bar{X} \left(\frac{n\sigma_0^2}{n\sigma_0^2 + \sigma^2} \right) + \mu_0 \left(\frac{\sigma^2}{n\sigma_0^2 + \sigma^2} \right)$$

11. Hypothesis Testing

- Test for mean

Case (1): When population variance σ^2 is known (z -test)

Test	H_0	H_A	Test statistic	Rejection region
right-tailed	$\mu = \mu_0$	$\mu > \mu_0$	$T = \bar{X}$ $Z = \frac{\bar{X} - \mu_0}{\sigma/\sqrt{n}}$	$\bar{X} > c$
left-tailed	$\mu = \mu_0$	$\mu < \mu_0$	$T = \bar{X}$ $Z = \frac{\bar{X} - \mu_0}{\sigma/\sqrt{n}}$	$\bar{X} < c$
two-tailed	$\mu = \mu_0$	$\mu \neq \mu_0$	$T = \bar{X}$ $Z = \frac{\bar{X} - \mu_0}{\sigma/\sqrt{n}}$	$ \bar{X} - \mu_0 > c$

Case (2): When population variance σ^2 is unknown (t -test)

Test	H_0	H_A	Test statistic	Rejection region
right-tailed	$\mu = \mu_0$	$\mu > \mu_0$	$T = \bar{X}$ $t_{n-1} = \frac{\bar{X} - \mu_0}{S/\sqrt{n}}$	$\bar{X} > c$
left-tailed	$\mu = \mu_0$	$\mu < \mu_0$	$T = \bar{X}$ $t_{n-1} = \frac{\bar{X} - \mu_0}{S/\sqrt{n}}$	$\bar{X} < c$
two-tailed	$\mu = \mu_0$	$\mu \neq \mu_0$	$T = \bar{X}$ $t_{n-1} = \frac{\bar{X} - \mu_0}{S/\sqrt{n}}$	$ \bar{X} - \mu_0 > c$

- χ^2 -test for variance:

Test	H_0	H_A	Test statistic	Rejection region
right-tailed	$\sigma = \sigma_0$	$\sigma > \sigma_0$	$T = \frac{(n-1)S^2}{\sigma_0^2} \sim \chi_{n-1}^2$	$S^2 > c^2$
left-tailed	$\sigma = \sigma_0$	$\sigma < \sigma_0$	$T = \frac{(n-1)S^2}{\sigma_0^2} \sim \chi_{n-1}^2$	$S^2 < c^2$
two-tailed	$\sigma = \sigma_0$	$\sigma \neq \sigma_0$	$T = \frac{(n-1)S^2}{\sigma_0^2} \sim \chi_{n-1}^2$	$S^2 > c^2$ where $\frac{\alpha}{2} = P(S^2 > c^2)$ or $S^2 < c^2$ where $\frac{\alpha}{2} = P(S^2 < c^2)$

- Two samples z -test for means:

Test	H_0	H_A	Test statistic	Rejection region
right-tailed	$\mu_1 = \mu_2$	$\mu_1 > \mu_2$	$T = \bar{X} - \bar{Y}$ $\bar{X} - \bar{Y} \sim \text{Normal}\left(0, \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}\right)$ if H_0 is true	$\bar{X} - \bar{Y} > c$
left-tailed	$\mu_1 = \mu_2$	$\mu_1 < \mu_2$	$T = \bar{Y} - \bar{X}$ $\bar{Y} - \bar{X} \sim \text{Normal}\left(0, \frac{\sigma_2^2}{n_2} + \frac{\sigma_1^2}{n_1}\right)$ if H_0 is true	$\bar{Y} - \bar{X} > c$
two-tailed	$\mu_1 = \mu_2$	$\mu_1 \neq \mu_2$	$T = \bar{X} - \bar{Y}$ $\bar{X} - \bar{Y} \sim \text{Normal}\left(0, \frac{\sigma_1^2}{n_1} + \frac{\sigma_2^2}{n_2}\right)$ if H_0 is true	$ \bar{X} - \bar{Y} > c$

- Two samples F -test for variances

Test	H_0	H_A	Test statistic	Rejection region
one-tailed	$\sigma_1 = \sigma_2$	$\sigma_1 > \sigma_2$	$T = \frac{S_1^2}{S_2^2} \sim F_{(n_1-1, n_2-1)}$	$\frac{S_1^2}{S_2^2} > 1 + c$
one-tailed	$\sigma_1 = \sigma_2$	$\sigma_1 < \sigma_2$	$T = \frac{S_1^2}{S_2^2} \sim F_{(n_1-1, n_2-1)}$	$\frac{S_1^2}{S_2^2} < 1 - c$
two-tailed	$\sigma_1 = \sigma_2$	$\sigma_1 \neq \sigma_2$	$T = \frac{S_1^2}{S_2^2} \sim F_{(n_1-1, n_2-1)}$	$\frac{S_1^2}{S_2^2} > 1 + c_R$ where $\frac{\alpha}{2} = P(T > 1 + c_R)$ or $\frac{S_1^2}{S_2^2} < 1 - c_L$ where $\frac{\alpha}{2} = P(T < 1 - c_L)$

Use the following values if required:

$$F_{t_{15}}(2) = 0.968, F_{t_{15}}\left(\frac{3}{2}\right) = 0.923, F_Z(1.83) = 0.9664$$

Options :

6406531889855. ✓ Useful Data has been mentioned above.

6406531889856. ❗ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 64065380776

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 25 Question Id : 640653565381 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

Sushant first throws a fair die, then throws as many fair coins as the number that showed on the die. If the die showed 5, then find the conditional probability that 3 heads are obtained. Enter the answer correct to three decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.310 to 0.316

Question Number : 26 **Question Id :** 640653565383 **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

Suppose $X \sim \text{Uniform}[0, \theta]$, where θ is an unknown constant. Consider a sample (4, 7, 8, 11, 5). Let $\hat{\theta}_{MME}$ and $\hat{\theta}_{ML}$ be the method of moments estimator and the maximum likelihood estimator of θ , respectively. Find $|\hat{\theta}_{MME} - \hat{\theta}_{ML}|$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Sub-Section Number : 3

Sub-Section Id : 64065380777

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 27 **Question Id :** 640653565384 **Question Type :** MSQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

Which of the following statement(s) is/are correct?

Options :

If the P-value of a test is 0.025, then the corresponding test will reject the null hypothesis at the significance level of 0.03.

6406531889863. ✓

$\alpha + \beta = 1$ for all statistical tests, where α is the significance level and β is the probability of correctly rejecting the null hypothesis.

6406531889864. ✗

The probability of accepting the null hypothesis when it is false is equal to the power of the test.

6406531889865. ✗

The probability of rejecting the Null hypothesis when it is true is called the level of significance.

6406531889866. ✓

Sub-Section Number : 4

Sub-Section Id : 64065380778

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 28 Question Id : 640653565382 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

Suppose X_1, X_2, X_3 are i.i.d. samples from a distribution X with an unknown mean μ and variance σ^2 . Let $\hat{\mu}_1 = X_1 + X_2 - X_3$, $\hat{\mu}_2 = 3X_1 + 2X_2 - 4X_3$ and $\hat{\mu}_3 = \frac{X_1}{2} + X_2 - \frac{X_3}{2}$ be three unbiased estimators of μ . Which of the following is true?

Options :

6406531889858. ✗ $Var(\hat{\mu}_1) < Var(\hat{\mu}_3) < Var(\hat{\mu}_2)$

6406531889859. ✗ $Var(\hat{\mu}_2) > Var(\hat{\mu}_3) > Var(\hat{\mu}_1)$

6406531889860. ✓ $Var(\hat{\mu}_3) < Var(\hat{\mu}_1) < Var(\hat{\mu}_2)$

6406531889861. ✗ $Var(\hat{\mu}_3) > Var(\hat{\mu}_2) > Var(\hat{\mu}_1)$.

Question Number : 29 Question Id : 640653565385 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider two independent samples $X_1, X_2, \dots, X_{50} \sim \text{i.i.d. Normal}(\mu_1, 25)$ and $Y_1, Y_2, \dots, Y_{20} \sim \text{i.i.d. Normal}(\mu_2, 70)$. Let the null and alternative hypothesis be

$$H_0 : \mu_1 = \mu_2$$

$$H_A : \mu_1 \neq \mu_2$$

Suppose $T = \bar{Y} - \bar{X}$, where $\bar{Y} = \frac{Y_1 + Y_2 + \dots + Y_{20}}{20}$ and $\bar{X} = \frac{X_1 + X_2 + \dots + X_{50}}{50}$.

Consider a test that rejects H_0 if $|T| > c$ for some constant c . What is the size of the test in terms of ' c '?

Options :

6406531889867. ✗ $1 - F_Z\left(\frac{-c}{2}\right)$

6406531889868. ✓ $2F_Z\left(\frac{-c}{2}\right)$

6406531889869. ✗ $1 - 2F_Z\left(\frac{c}{2}\right)$

6406531889870. ✗ $F_Z\left(\frac{c}{2}\right)$

Sub-Section Number :	5
Sub-Section Id :	64065380779
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653565386 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (30 to 31)

Question Label : Comprehension

Suppose $X \sim \text{Binomial}(6, p)$, then

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 30 Question Id : 640653565387 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

Find the value of p for
which $9P(X = 4) = P(X = 2)$.

Options :

6406531889871. ✓ $\frac{1}{4}$

6406531889872. ✗ $\frac{1}{2}$

6406531889873. ✗

6406531889874. * 0

Question Number : 31 Question Id : 640653565388 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

Find $E[X^2]$. Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

3.35 to 3.41

Question Id : 640653565389 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (32 to 33)

Question Label : Comprehension

Let X and Y be two random variables having joint density function:

$$f_{XY}(x, y) = \begin{cases} kx^2y, & \text{if } 0 < x < 1, 0 < y < 1, \\ 0, & \text{otherwise.} \end{cases}$$

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 32 Question Id : 640653565390 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

Find the value of k .

Options :

6406531889876. ✘ $\frac{1}{6}$

6406531889877. ✘ $\frac{1}{3}$

6406531889878. ✓ 6

6406531889879. ✘ 3

Question Number : 33 Question Id : 640653565391 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

Find the value of $P(X + Y < 1)$. Enter the answer correct to one decimal place.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Question Id : 640653565392 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (34 to 35)

Question Label : Comprehension

The density function of a continuous random variable X is given by

$$f_X(x) = \begin{cases} \frac{1 + \theta x}{2}, & -1 < x < 1, \\ 0, & \text{otherwise,} \end{cases}$$

where $-1 < \theta < 1$.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 34 Question Id : 640653565393 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

Consider a random sample $(-0.2, 0.3, 0.7, -0.6, 0.1)$. Find the method of moments estimate of θ for the given sample. Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.16 to 0.20

Question Number : 35 Question Id : 640653565394 Question Type : SA Calculator : None

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

Correct Marks : 3

Question Label : Short Answer Question

Consider a random sample

$(\frac{-1}{2}, 0, \frac{1}{3}, 0, \frac{1}{3})$. Find the

maximum likelihood estimate
of θ for the given sample.

Enter the answer correct
to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.30 to 0.36

Question Id : 640653565395 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (36 to 37)

Question Label : Comprehension

We wish to estimate the probability p of getting the number one on a biased die using a Bayesian estimator. Consider 8 independent throws and suppose one appears two times.

Assume the prior distribution of p to be Uniform[0, 1].

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 36 Question Id : 640653565396 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

Find the posterior distribution of p .

Options :

6406531889883. ✘ Uniform[0, 1]

6406531889884. ✘ Beta(2, 6)

6406531889885. ✓ Beta(3, 7)

6406531889886. ✘ $\frac{1}{4}$ with probability 1

Question Number : 37 Question Id : 640653565397 Question Type : SA Calculator : None

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

Correct Marks : 2

Question Label : Short Answer Question

Find the posterior mean. Enter the answer correct to one decimal place.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0.3

Question Id : 640653565398 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (38 to 39)

Question Label : Comprehension

A company has provided insurance policies to several people whose age is normal with variance 36. An insurance agent of the company has claimed that the average age of policyholders who are insured through her is 30 years. We suspect that this is too low. To test the agent's claim, we have selected a random sample of 100 policyholders who purchased their policies through her. If the average age of the selected 100 policyholders is greater than 31.1 years, we reject the claim; otherwise, we accept it.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 38 Question Id : 640653565399 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

Define null hypothesis and alternative hypothesis.

Options :

6406531889888. ✓ $H_0 : \mu = 30, H_A : \mu > 30$

6406531889889. ✗ $H_0 : \mu = 30, H_A : \mu \neq 30$

6406531889890. ✗ $H_0 : \mu = 30, H_A : \mu < 30$

6406531889891. ✗ $H_0 : \mu \neq 30, H_A : \mu = 30$

Question Number : 39 Question Id : 640653565400 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

Find the significance level of the test. Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.02 to 0.04

Sem2 Maths2

Section Id : 64065338384

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 : 64065380780

Question Shuffling Allowed : No

Is Section Default? :

null

Question Number : 40 Question Id : 640653565401 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

**THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER 2:
MATHEMATICS FOR DATA SCIENCE 2 (COMPUTER BASED EXAM)"**

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT ,PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531889893. ✓ YES

6406531889894. ✗ NO

Sub-Section Number : 2

Sub-Section Id : 64065380781

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 41 Question Id : 640653565402 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

If $A = \begin{pmatrix} a+b+c & b+c-d \\ b-c+1 & d \end{pmatrix} = \begin{pmatrix} a+1 & 2c-3d+3 \\ 2 & c+a \end{pmatrix}$, then what is the value of $tr(A)$, where $tr(A)$ denotes the trace of A (sum of diagonal entries of A)?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Sub-Section Number : 3

Sub-Section Id : 64065380782

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565403 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (42 to 44)

Question Label : Comprehension

Let D denote the set of all 2×2 diagonal matrices.

Consider an ordered basis $\beta = \left\{ \begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}, \begin{pmatrix} 0 & 0 \\ 0 & 2 \end{pmatrix} \right\}$.

Let $T : U \rightarrow \mathbb{R}^2$ be a linear transformation defined as

$T \begin{pmatrix} a & 0 \\ 0 & b \end{pmatrix} = (a + b, 4a - 5b)$. Let matrix A be the

matrix representation of T with respect to the ordered basis β for D and the standard ordered

basis for the co-domain \mathbb{R}^2 .

Answer the given subquestions.

Sub questions

Question Number : 42 Question Id : 640653565404 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

Which of the following matrix is A ?

Options :

6406531889896. ✘ $\begin{pmatrix} 1 & 4 \\ 2 & -10 \end{pmatrix}$

6406531889897. ✘ $\begin{pmatrix} 1 & 4 \\ 1 & -5 \end{pmatrix}$

6406531889898. ✓ $\begin{pmatrix} 1 & 2 \\ 4 & -10 \end{pmatrix}$

6406531889899. ✘ $\begin{pmatrix} 1 & 1 \\ 4 & -5 \end{pmatrix}$

Question Number : 43 Question Id : 640653565405 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

Which of the following is/are true about T ?

Options :

6406531889900. ✓ Rank of T is 2.

6406531889901. ✘ There exists an isomorphism from $R(T)$ (range of T) to \mathbb{R} .

6406531889902. ✘ Nullity of T is 1.

6406531889903. ✓ T is one-one.

Question Number : 44 Question Id : 640653565406 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1 Selectable Option : 0

Question Label : Multiple Select Question

Let B be the matrix representation of T with respect to the ordered basis β for the domain and the ordered basis $\{(1, -1), (1, 1)\}$ for the co-domain \mathbb{R}^2 . Which of the following is/are true?

Options :

6406531889904. ✓ A is similar to B .

6406531889905. ✗ Rank of B is 1.

6406531889906. ✓ Nullity of B is 0.

6406531889907. ✗ A is not similar to B .

Question Id : 640653565407 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (45 to 46)

Question Label : Comprehension

Consider the subspace $W = \{(x, y, z) \mid x - y + z = 0, x, y, z \in \mathbb{R}\}$ of \mathbb{R}^3 . Answer the given subquestions based on the given information.

Sub questions

Question Number : 45 Question Id : 640653565408 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

Which of the following is a basis β for W ?

Options :

6406531889908. ✓ $\beta = \{(1, 1, 0), (-1, 0, 1)\}$

6406531889909. ✗ $\beta = \{(1, 1, 0), (0, 1, -1)\}$

6406531889910. ✗ $\beta = \{(0, 1, 1), (1, 1, 0), (-1, 0, 1)\}$

6406531889911. ✗ $\beta = \{(0, 1, 1), (0, 1, -1)\}$

Question Number : 46 Question Id : 640653565409 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 γ is the orthonormal basis of W obtained from β (from the previous question) by using the Gram Schmidt process with respect to the usual inner product, and (a, b, c) is the projection of $(1, 0, 1)$ onto W , then what is $6(a + b + c)$?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

8

Question Id : 640653565414 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (47 to 50)

Question Label : Comprehension

Let $f(x, y) = x^4 + y^4 + 4x^3 + 4x^2 - 8y^2 - 5$.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 47 Question Id : 640653565415 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

The number of critical points of $f(x, y)$ is

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

9

Question Number : 48 **Question Id :** 640653565416 **Question Type :** SA **Calculator :** None

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

Correct Marks : 1

Question Label : Short Answer Question

The number of saddle points of $f(x, y)$ is

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

4

Question Number : 49 **Question Id :** 640653565417 **Question Type :** SA **Calculator :** None

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

Correct Marks : 1

Question Label : Short Answer Question

The number of local maxima of $f(x, y)$ is

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 50 Question Id : 640653565418 Question Type : SA Calculator : None

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

Correct Marks : 1

Question Label : Short Answer Question

The number of local minima of $f(x, y)$ is

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

4

Question Id : 640653565420 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (51 to 54)

Question Label : Comprehension

From the list of given terms find out the best possible options for each of the given subquestions:

- 1) Rank 2
- 2) Zero nullity
- 3) Non-zero determinant
- 4) Closure with respect to addition and scalar multiplication
- 5) Existence of zero element
- 6) Existence of additive inverse
- 7) Commutativity of addition
- 8) Elements
- 9) Associativity of addition
- 10) Global maxima
- 11) Saddle point
- 12) Global Minima
- 13) Gradient exists
- 14) Directional derivative exists in any direction
- 15) Orthonormal columns
- 16) First order partial derivatives exist
- 17) Function is differentiable
- 18) Affine subspace.
- 19) Limit exists

Sub questions

Question Number : 51 Question Id : 640653565421 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

A critical point can be _____. (Enter 3 best possible options. Enter only the serial numbers of those options in increasing order without adding any comma or space in between them.)

[Suppose your answer is 7, 14 and 17, then you should enter 71417]

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

101112

Question Number : 52 Question Id : 640653565422 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

An invertible matrix of order 3 has _____. (Enter 2 best possible options. Enter only the serial numbers of those options in increasing order without adding any comma or space in between them.) [Suppose your answer is 7 and 17, then you should enter 717]

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

23

Question Number : 53 Question Id : 640653565423 Question Type : SA Calculator : None

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

Correct Marks : 1

Question Label : Short Answer Question

If the tangent plane exists for a function at a point then at that point _____. (Enter 5 best possible options. Enter only the serial numbers of those options in increasing order without adding any comma or space in between them.) [Suppose your answer is 1, 2, 3,4 and 5, then you should enter 12345]

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1314161719

Question Number : 54 Question Id : 640653565424 Question Type : SA Calculator : None

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

Correct Marks : 1

Question Label : Short Answer Question

Some of the conditions that need to be checked to identify a vector space V are: _____
(Enter 5 best possible options. Enter only the serial numbers of those options in increasing order without adding any comma or space in between them.) [Suppose your answer is 7, 14, 11, 15 and 17, then you should enter 714111517]

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

45679

Sub-Section Number : 4

Sub-Section Id : 64065380783

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 55 Question Id : 640653565410 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 minimum sum of three non-negative numbers whose product is 27?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

9

Question Number : 56 Question Id : 640653565413 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

Let V_1, V_2 and V_3 represent the subspaces $\{(x, y, z) : 2x + 3y + 4z = 0\}$, $\{(x, y, z) : x + 2y + z = 0\}$ and $\{(x, y, z) : x + y + 2z = 0\}$, respectively of \mathbb{R}^3 . Let $A_i, i = 1, 2, 3$ be the affine spaces corresponding to $V_i, i = 1, 2, 3$. Suppose A_1 contains $(1, 1, -2)$, A_2 contains $(-2, 1, 1)$ and A_3 contains $(1, -2, 1)$. If (x_1, x_2, x_3) is the point of intersection of A_1, A_2 and A_3 , find $x_1 + 2x_2 + x_3$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Sub-Section Number : 5

Sub-Section Id : 64065380784

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 57 Question Id : 640653565411 Question Type : SA Calculator : None

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

Correct Marks : 1

Question Label : Short Answer Question

Find the number of values of a so that the system of linear equations $x + y - z = 0, 2x + (a + 2)y + z = 0, ax + y + z = 0$ has infinitely many solutions.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Sub-Section Number : 6

Sub-Section Id : 64065380785

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 58 **Question Id :** 640653565412 **Question Type :** MSQ **Is Question**

Mandatory : No **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Correct Marks : 1 **Selectable Option :** 0

Question Label : Multiple Select Question

Let A be a 3×3 orthogonal matrix with positive determinant. Which of the following option(s) is/are true?

Options :

6406531889915. ✓ The determinant of $2A$ is 8.

6406531889916. ✗ The determinant of $3A$ is 3.

6406531889917. ✓ A is equivalent to the identity matrix of order 3.

6406531889918. ✗ None of these

Sub-Section Number : 7

Sub-Section Id : 64065380786

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 59 Question Id : 640653565419 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the function $f(x, y) = x^2 + xy$. Which of the following line represents the tangent line at the point $(1, 1)$ in the direction of the vector $(1, 1)$?

Options :

6406531889924. ✓ $\{(x, y, z) \in \mathbb{R}^3 \mid \frac{x-1}{\frac{1}{\sqrt{2}}} = \frac{y-1}{\frac{1}{\sqrt{2}}} = \frac{z-2}{2\sqrt{2}}\}$

6406531889925. ✗ $\{(x, y, z) \in \mathbb{R}^3 \mid \frac{x-1}{\frac{1}{\sqrt{2}}} = \frac{y-1}{\frac{1}{\sqrt{2}}} = \frac{z-1}{\frac{1}{\sqrt{2}}}\}$

6406531889926. ✗ $\{(x, y, z) \in \mathbb{R}^3 \mid \frac{x-1}{\frac{1}{\sqrt{2}}} = \frac{y-1}{\frac{1}{\sqrt{2}}} = \frac{z-2}{\frac{3}{\sqrt{2}}}\}$

6406531889927. ✗ $\{(x, y, z) \in \mathbb{R}^3 \mid \frac{x}{\frac{1}{\sqrt{2}}} = \frac{y}{\frac{1}{\sqrt{2}}} = \frac{z}{2\sqrt{2}}\}$

Sub-Section Number : 8

Sub-Section Id : 64065380787

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 60 Question Id : 640653565425 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

Choose the correct statements for the function

$$f(x, y) = \begin{cases} \frac{x^2 y^2}{x^4 + y^4} & (x, y) \neq (0, 0) \\ 0 & (x, y) = (0, 0) \end{cases}$$

Options :

6406531889932. ✓ $\lim_{(x,y) \rightarrow (0,0)} f(x, y) = \frac{4}{17}$ along the path $y = 2x$

6406531889933. ✗ $f_x(0, 0) = 1$

6406531889934. ✗ The directional derivative of f at $(0, 0)$ in the direction of $(1, -1)$ exists.

6406531889935. ✓ f is not continuous at $(0, 0)$.

Sub-Section Number : 9

Sub-Section Id : 64065380788

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 61 Question Id : 640653565426 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

Match the equation of the surface in Column A with the tangent plane at the point $(1, 1, 2)$ in column B and the vector subspace corresponding to the affine subspace (of \mathbb{R}^3) formed by the tangent plane, in Column C.

	Equation of the surface (Column A)		Equation of the tangent plane at $(1, 1, 2)$ (Column B)		Vector subspace corresponding to the affine subspace formed by tangent plane (Column C)
i)	$z = x^2y + xy^2$	a)	$3x + 3y - z = 4$	1)	$\{(x, y, z) \mid 6x = 2y + z, x, y, z \in \mathbb{R}\}$
ii)	$z = 3x^2 - y^2$	b)	$z = -2x - 2y + 6$	2)	$\{(x, y, z) \mid x + y = \frac{1}{3}z, x, y, z \in \mathbb{R}\}$
iii)	$xyz = 2$	c)	$6x - 2y = z + 2$	3)	$\{(x, y, z) \mid z = -2(x + y), x, y, z \in \mathbb{R}\}$

Table: M2ES1

Choose the correct option from the following:

Options :

6406531889936. ✘ i) \rightarrow b \rightarrow 1, ii) \rightarrow a \rightarrow 2, iii) \rightarrow c \rightarrow 3

6406531889937. ✓ i) \rightarrow a \rightarrow 2, ii) \rightarrow c \rightarrow 1, iii) \rightarrow b \rightarrow 3

6406531889938. ✘ i) \rightarrow b \rightarrow 1, ii) \rightarrow c \rightarrow 3, iii) \rightarrow a \rightarrow 2

6406531889939. ✘ i) \rightarrow b \rightarrow 1, ii) \rightarrow c \rightarrow 2, iii) \rightarrow a \rightarrow 3

Sub-Section Number : 10

Sub-Section Id : 64065380789

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565427 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (62 to 63)

Question Label : Comprehension

Consider the system of linear equations formed by the equations in column B of Table M2ES2 and let A be its coefficient matrix. Answer the given related subquestions.

	Equation of the surface (Column A)		Equation of the tangent plane at (1, 1, 2) (Column B)		Vector subspace corresponding to the affine subspace formed by tangent plane (Column C)
i)	$z = x^2y + xy^2$	a)	$3x + 3y - z = 4$	1)	$\{(x, y, z) \mid 6x = 2y + z, x, y, z \in \mathbb{R}\}$
ii)	$z = 3x^2 - y^2$	b)	$z = -2x - 2y + 6$	2)	$\{(x, y, z) \mid x + y = \frac{1}{3}z, x, y, z \in \mathbb{R}\}$
iii)	$xyz = 2$	c)	$6x - 2y = z + 2$	3)	$\{(x, y, z) \mid z = -2(x + y), x, y, z \in \mathbb{R}\}$

Table: M2ES2

Sub questions

Question Number : 62 Question Id : 640653565428 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

Which of the following denotes the solution space of this system of linear equations?

Options :

6406531889940. ✘ $\{(x, y, 2) \mid x + y = 2, x, y \in \mathbb{R}\}$

6406531889941. ✖ $\{(x, y, 2) \mid x, y \in \mathbb{R}\}$

6406531889942. ✖ $\{(x, x, 2) \mid x \in \mathbb{R}\}$

6406531889943. ✓ $\{(1, 1, 2)\}$

Question Number : 63 Question Id : 640653565429 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

Which of the following sets denotes $nullspace(A)$?

Options :

6406531889944. ✖ $\{(x, y, 0) \mid x, y \in \mathbb{R}\}$

6406531889945. ✖ $\{(x, -x, 0) \mid x \in \mathbb{R}\}$

6406531889946. ✖ $\{(x, x, 0) \mid x \in \mathbb{R}\}$

6406531889947. ✓ $\{(0, 0, 0)\}$

Sub-Section Number : 11

Sub-Section Id : 64065380790

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565430 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (64 to 65)

Question Label : Comprehension

Consider the system of linear equations formed by the equations in column B of Table M2ES3 and let A be its coefficient matrix. Answer the given related questions.

	Equation of the surface (Column A)		Equation of the tangent plane at (1, 1, 2) (Column B)		Vector subspace corresponding to the affine subspace formed by tangent plane (Column C)
i)	$z = x^2y + xy^2$	a)	$3x + 3y - z = 4$	1)	$\{(x, y, z) \mid 6x = 2y + z, x, y, z \in \mathbb{R}\}$
ii)	$z = 3x^2 - y^2$	b)	$z = -2x - 2y + 6$	2)	$\{(x, y, z) \mid x + y = \frac{1}{3}z, x, y, z \in \mathbb{R}\}$
iii)	$xyz = 2$	c)	$6x - 2y = z + 2$	3)	$\{(x, y, z) \mid z = -2(x + y), x, y, z \in \mathbb{R}\}$

Table: M2ES3

Sub questions

Question Number : 64 Question Id : 640653565431 Question Type : SA Calculator : None

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

Correct Marks : 2

Question Label : Short Answer Question

Find $\text{Rank}(A)$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Question Number : 65 Question Id : 640653565432 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2 Selectable Option : 0

Question Label : Multiple Select Question

Which of the following denotes the column space of A ? (More than one option may be correct)

Options :

6406531889949. ✓ \mathbb{R}^3

6406531889950. ✘ $\text{Span}\{(-1, -1, 1)\}$

6406531889951. ✘ $\text{Span}\{(3, 6, 2), (3, -2, 2)\}$

6406531889952. ✓ $\text{Span}\{(3, 6, 2), (3, -2, 2), (-1, -1, 1)\}$

Sem2 Intro to Python

Section Id : 64065338385

Section Number : 4

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 26

Number of Questions to be attempted : 26

Section Marks : 100

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 :

64065380791

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Number : 66 Question Id : 640653565433 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

**THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER 2:
INTRODUCTION TO PYTHON (COMPUTER BASED EXAM)"**

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531889953. ✓ YES

6406531889954. ✗ NO

Sub-Section Number :

2

Sub-Section Id :

64065380792

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 67 Question Id : 640653565434 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 is the output of the following snippet of code?

```
1 | def welcome(age):  
2 |     if 0 < age < 18:  
3 |         print('welcome boys and girls')  
4 |     else:  
5 |         print('welcome ladies and gentlemen')  
6 |  
7 | print(welcome(50))
```

Options :

6406531889955. ✘ 1 | welcome boys and girls

6406531889956. ✘ 1 | Welcome ladies and gentlemen

6406531889957. ✘ 1 | welcome boys and girls
2 | None

6406531889958. ✓ 1 | welcome ladies and gentlemen
2 | None

Question Number : 68 Question Id : 640653565435 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

Which of the following code blocks prints the product of the digits for the given number?

Options :

```
1 n = int(input())
2 total = 1
3 while(n > 0):
4     total = total * (n % 10)
5     n = n // 10
6 print(total)
```

6406531889959. ✓

```
1 n = int(input())
2 total = 1
3 while(n > 0):
4     total = total + (n % 10)
5     n = n // 10
6 print(total)
```

6406531889960. ✘

```
1 n = int(input())
2 total = 1
3 while(n > 0):
4     total = total * (n // 10)
5     n = n % 10
6 print(total)
```

6406531889961. ✘

```
1 n = int(input())
2 total = 1
3 while(n > 0):
4     total = total + (n // 10)
5     n = n % 10
6 print(total)
```

6406531889962. ✘

Question Number : 69 Question Id : 640653565436 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 be the output of the following Python code?

```
1 string1 = 'programming'
2 string2 = 'python'
3 L = []
4 for i in range(0, len(string1)):
5     for j in range(0, len(string2)):
6         if (string1[i] == string2[j]):
7             L.append(string1[i])
8             break
9         else:
10            continue
11 print(L)
```

Options :

1 | ['p', 'o', 'n', 'p', 'o', 'n']

6406531889963. ❌

1 | ['p', 'p', 'o', 'o', 'n', 'n']

6406531889964. ❌

1 | ['p', 'o', 'n']

6406531889965. ✓

6406531889966. ❌ None of these

Question Number : 70 Question Id : 640653565437 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the following snippet of code.

```
1 def func(L):
2     if L == []:
3         return 0
4     if L[-1] % 2 == 1:
5         return L[-1] + func(L[:-1])
6     else:
7         return func(L[:-1])
```

If `L` is a non-empty list of positive integers, which of the following statements is correct about the recursive function `func(L)`?

Options :

6406531889967. ✘ It returns total number of odd elements in the list `L`

6406531889968. ✘ It returns total number of even elements in the list `L`

6406531889969. ✘ It returns sum of the even elements in the list `L`

6406531889970. ✓ It returns sum of the odd elements in the list `L`

Question Number : 71 Question Id : 640653565438 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 be the output of the following Python code?

```
1 A = [[2, 2, 3], [3, 4, 5], [1, 0, 7]]
2 B = [[1, 1, 4], [4, 5, 2], [1, 4, 1]]
3 n = len(A)
4 C = [[0, 0, 0], [0, 0, 0], [0, 0, 0]]
5 for i in range(n):
6     for j in range(n):
7         C[i][j] = B[i][j] - A[i][j]
8         if j != n - 1:
9             print(C[i][j], end = ',')
10        else:
11            print(C[i][j])
```

Options :

1	3,3,-7
2	-7,-9,7
3	2,-4,8

6406531889971. ✘

1	3,3,7
2	7,9,7
3	2,4,8

6406531889972. ✘

1	1,1,1
2	1,1,3
3	0,4,6

6406531889973. ✘

1	-1,-1,1
2	1,1,-3
3	0,4,-6

6406531889974. ✓

Question Number : 72 Question Id : 640653565441 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

Select the correct implementation of a program that creates a text file named `pattern.txt` with the following contents:

```
1 az
2 by
3 cx
4 dw
5 ev
6 fu
7 gt
8 hs
9 ir
10 jq
11 kp
12 lo
13 mn
```

Options :

```
1 f = open('pattern.txt', 'r')
2 letters = 'abcdefghijklmnopqrstuvwxyz'
3 n = len(letters) // 2
4 for i in range(n):
5     line = letters[i] + letters[-1 - i]
6     if i != n - 1:
7         line = line + '\n'
8     f.write(line)
9 f.close()
```

6406531889984. ❌

```
1 f = open('pattern.txt', 'w')
2 letters = 'abcdefghijklmnopqrstuvwxyz'
3 n = len(letters) // 2
4 for i in range(n):
5     line = letters[i] + letters[-1 - i]
6     f.write(line)
7 f.close()
```

6406531889985. ❌

6406531889986. ✓

```
1 f = open('pattern.txt', 'w')
2 letters = 'abcdefghijklmnopqrstuvwxyz'
3 n = len(letters) // 2
4 for i in range(n):
5     line = letters[i] + letters[-1 - i]
6     if i != n - 1:
7         line = line + '\n'
8     f.write(line)
9 f.close()
```

```
1 f = open('pattern.txt', 'w')
2 letters = 'abcdefghijklmnopqrstuvwxyz'
3 n = len(letters)
4 for i in range(n):
5     line = letters[i] + letters[-1 - i]
6     if i != n - 1:
7         line = line + '\n'
8     f.write(line)
9 f.close()
```

6406531889987. *

Sub-Section Number : 3

Sub-Section Id : 64065380793

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 73 Question Id : 640653565439 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

Consider the following functions:

```
1 def f(n):
2     if n < 10:
3         return 1
4     return 1 + f(n // 10)
5
6 def g(n):
7     if n < 10:
8         return n
9     return n % 10 + g(n // 10)
10
11 def h(n):
12     if n <= 1:
13         return n
14     return n * h(n - 1)
```

Which of the following function calls returns the number of digits in $100!$, where, $n!$ is the product of the first n positive integers?

Options :

6406531889975. ✘ `f(g(100))`

6406531889976. ✓ `f(h(100))`

6406531889977. ✘ `g(h(100))`

6406531889978. ✘ `h(g(100))`

6406531889979. ✘ `h(f(100))`

Question Number : 74 Question Id : 640653565440 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 be the output of the following Python code?

```
1 def new_fun(a):
2     s_L = []
3     while a != []:
4         x = a[0]
5         for i in a:
6             if i < x:
7                 x = i
8         a.remove(x)
9         s_L.append(x)
10    return s_L
11
12 L = [6, 2, 9, 8]
13 print(new_fun(L))
```

Options :

1 | [2, 6, 8, 9]

6406531889980. ✓

1 | [9, 8, 6, 2]

6406531889981. ✗

1 | [2, 6, 9, 8]

6406531889982. ✗

1 | [9, 8, 2, 6]

6406531889983. ✗

Question Number : 75 Question Id : 640653565442 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 is the output of the following snippet of code?

```
1 L = [1, 3, -1, 4, -2, 5, 3]
2 try:
3     n = 10
4     for i in range(n):
5         if L[i] < 0:
6             L[i] = 0
7 except IndexError:
8     for i in range(n - len(L)):
9         L.append(0)
10 finally:
11     print(L)
```

Options :

6406531889988. ❌

1 | [1, 3, -1, 4, -2, 5, 3]

6406531889989. ❌

1 | [1, 3, 0, 4, 0, 5, 3]

6406531889990. ✓

1 | [1, 3, 0, 4, 0, 5, 3, 0, 0, 0]

6406531889991. ❌ This code doesn't print anything to the console

Question Number : 76 Question Id : 640653565443 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

Consider the following snippet of code:

```
1 | M = [[0 for j in range(3)] for i in range(3)]
```

Select the snippet of code that is equivalent to this.

Options :

```
1 | M = []
2 | for i in range(3):
3 |     M.append([])
4 |     for j in range(3):
5 |         M[-1].append(0)
```

6406531889992. ✓

```
1 | M = []
2 | for i in range(3):
3 |     M.append([])
4 |     for j in range(3):
5 |         M[j].append(0)
```

6406531889993. ✗

```
1 | M = []
2 | for i in range(3):
3 |     M.append([])
4 |     for j in range(3):
5 |         M[0].append(0)
```

6406531889994. ✗

```
1 | M = []
2 | for i in range(3):
3 |     for j in range(3):
4 |         M[i][j].append(0)
```

6406531889995. ✗

Question Number : 77 Question Id : 640653565445 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

People from four different cities have come for an interview: Amethi, Trichy, Goa and Cochin. They are all seated on a long row of chairs waiting for their turn. A seating plan is termed `good` if no person finds himself sandwiched between two persons from the same city that is different from his.

For example, `['C', 'A', 'T', 'G', 'T']` is a `bad` seating plan as the person from Goa finds two persons from Trichy seated on either side. `['A', 'T', 'T', 'T', 'G', 'A', 'T']` is a `good` plan. Even though the person from Trichy is sitting between two persons from Trichy, they are still from his city.

This seating plan is represented by a list `L`. Write a function named `plan_type` that accepts `L` as argument. It should return the string `'good'` if it is a good seating plan, and `'bad'` otherwise. You can assume that `len(L) >= 3`. Sample input-output behavior is given below.

<code>L</code>	<code>plan_type(L)</code>
<code>['A', 'T', 'G', 'T', 'C', 'A']</code>	<code>'bad'</code>
<code>['A', 'T', 'T', 'T', 'G', 'A', 'T']</code>	<code>'good'</code>
<code>['A', 'C', 'G', 'T', 'A', 'C', 'T', 'G', 'C']</code>	<code>'good'</code>
<code>['A', 'T', 'A', 'C']</code>	<code>'bad'</code>
<code>['A', 'A', 'A', 'A', 'T', 'G', 'C']</code>	<code>'good'</code>

Select the correct implementations of this function.

Options :

```
1 def plan_type(L):
2     for i in range(1, len(L) - 1):
3         if (L[i - 1] == L[i + 1]) and (L[i] != L[i - 1]):
4             return 'bad'
5     return 'good'
```

6406531890000. ✓

```
1 def plan_type(L):
2     for i in range(1, len(L) - 1):
3         if (L[i - 1] == L[i + 1]) or (L[i] != L[i - 1]):
4             return 'bad'
5     return 'good'
```

6406531890001. ✘

```
1 def plan_type(L):
2     for i in range(1, len(L) - 1):
3         if (L[i - 1] == L[i + 1]) and (L[i] != L[i - 1]):
4             return 'good'
5     return 'bad'
```

6406531890002. *

```
1 def plan_type(L):
2     for i in range(1, len(L) - 1):
3         if (L[i - 1] == L[i + 1]):
4             return 'bad'
5     return 'good'
```

6406531890003. *

```
1 def plan_type(L):
2     for i in range(1, len(L) - 1):
3         if (L[i - 1] == L[i] == L[i + 1]):
4             return 'bad'
5     return 'good'
```

6406531890004. *

Sub-Section Number : 4

Sub-Section Id : 64065380794

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 78 Question Id : 640653565444 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 variable `number` represents a positive integer. Which of the following options are equivalent to the below code block?

```
1 temp = number
2 total = 0
3 times = len(str(number))
4 while temp > 0:
5     remainder = temp % 10
6     total = total + (remainder ** times)
7     temp = temp // 10
8 if number == total:
9     print(True)
10 else:
11     print(False)
```

Options :

```
1 L1 = list(map(int,str(number)))
2 L2 = list(map(lambda x: x ** len(str(number)), number))
3 if sum(L2) == number:
4     print(True)
5 else:
6     print(False)
```

6406531889996. ❌

```
1 L1 = list(map(int, str(number)))
2 L2 = list(map(lambda x: x ** len(str(number)), L1))
3 print(sum(L2) == number)
```

6406531889997. ✓

```
1 L1 = list(map(int, number))
2 L2 = list(map(lambda x: x ** len(str(number)), L1))
3 print(sum(L2) == number)
```

6406531889998. ❌

```
1 L1 = list(map(int, str(number)))
2 L2 = list(map(lambda x: x ** len(number), L1))
3 if sum(L2) == number:
4     print(True)
5 else:
6     print(False)
```

6406531889999. ❌

Sub-Section Number : 5
Sub-Section Id : 64065380795
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 79 Question Id : 640653565448 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

The variable `s` is a set in which of the following options?

Options :

6406531890015. ✓

1 | `s = set()`

6406531890016. ✗

1 | `s = []`

6406531890017. ✓

1 | `s = {1, 2, 3}`

6406531890018. ✓

1 | `s = set([1, 2, 3, 4, 3, 2, 1])`

Question Number : 80 Question Id : 640653565453 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

Select the correct code block(s) that perform the following task:

1. Accept two strings as input
2. Print `Ascending` if the first string comes before the second in alphabetical order
3. `Descending` otherwise

For example, if the input is as follows:

```
1 | java  
2 | python
```

then the expected output is `Ascending` because `python` comes after `java`. Assume that all the strings consist of only one word and will be entered in lowercase during the time of input.

Options :

```
1 | str1 = input()  
2 | str2 = input()  
3 | if(str1 < str2):  
4 |     print("Ascending")  
5 | else:  
6 |     print("Descending")
```

6406531890036. ✓

```
1 | str1 = input()  
2 | str2 = input()  
3 | if(str1 > str2):  
4 |     print("Ascending")  
5 | else:  
6 |     print("Descending")
```

6406531890037. ✗

```
1 | if(input() < input()):  
2 |     print("Ascending")  
3 | else:  
4 |     print("Descending")
```

6406531890038. ✓

```
1 | if(input() > input()):  
2 |     print("Ascending")  
3 | else:  
4 |     print("Descending")
```

6406531890039. ✗

6406531890040. ✓

```
1 str1 = input()
2 str2 = input()
3 result = str1 < str2
4 if(result == True):
5     print("Ascending")
6 else:
7     print("Descending")
```

```
1 str1 = input()
2 str2 = input()
3 result = str1 > str2
4 if(result == True):
5     print("Ascending")
6 else:
7     print("Descending")
```

6406531890041. *

Sub-Section Number : 6

Sub-Section Id : 64065380796

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 81 Question Id : 640653565446 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Selectable Option : 0

Question Label : Multiple Select Question

Select all correct implementations of a function named `unique` that accepts a non-empty list `L` of integers as an argument. The function should remove all duplicate elements from the list `L`. Specifically, It should return a list `L_uniq` that retains the first occurrence (from the left) of each distinct element in the input list `L`. For example,

<code>L</code>	<code>unique(L)</code>
<code>[1, 1, 2, 3, 5, 5]</code>	<code>[1, 2, 3, 5]</code>
<code>[1, 2, 3, 4, 5, 7, 7]</code>	<code>[1, 2, 3, 4, 5, 7]</code>

Options :

```
1 def unique(L):
2     L_uniq = []
3     for elem in L:
4         if elem not in L_uniq:
5             L_uniq.append(elem)
6     return L_uniq
```

6406531890005. ✓

```
1 def unique(L):
2     L_uniq = []
3     for elem in L:
4         if elem in L_uniq:
5             L_uniq.append(elem)
6     return L_uniq
```

6406531890006. ✘

```
1 def unique(L):
2     L_uniq = [L[0]]
3     for i in range(1, len(L)):
4         if not(L[i] in L[:i]):
5             L_uniq.append(L[i])
6     return L_uniq
```

6406531890007. ✓

```
1 def unique(L):
2     L_uniq = []
3     for i in range(1, len(L)):
4         if not(L[i] in L[:i]):
5             L_uniq.append(L[i])
6     return L_uniq
```

6406531890008. ✘

```
1 def unique(L):
2     L_uniq = []
3     for i in range(0, len(L)):
4         if not(L[i] in L[i + 1: ]):
5             L_uniq.append(L[i])
6     return L_uniq
```

6406531890009. ✘

Question Number : 82 Question Id : 640653565449 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 4 Selectable Option : 0

Question Label : Multiple Select Question

Write a function named `length_analysis` that accepts a list of distinct words `L` as argument. It should return a dictionary `D` that has the following structure:

- **keys:** words in the list
- **values:** length of the word (key)

Select all correct implementations of this function.

Options :

```
1 def length_analysis(L):
2     D = dict()
3     for word in L:
4         D[word] = len(word)
5     return D
```

6406531890019. ✓

```
1 def length_analysis(L):
2     D = {}
3     for word in L:
4         D[word] = len(word)
5     return D
```

6406531890020. ✓

```
1 def length_analysis(L):
2     D = dict()
3     for word in L:
4         D[word] = D[word] + len(word)
5     return D
```

6406531890021. ✘

```
1 def length_analysis(L):
2     D = {}
3     for word in L:
4         D[word] = D[word] + len(word)
5     return D
```

6406531890022. ✘

Question Number : 83 Question Id : 640653565450 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 4 Selectable Option : 0

Question Label : Multiple Select Question

Select the correct code snippet(s) which can be used to reverse the given integer `num`. For example, if the input is 3456 then the output should be 6543.

Options :

```
1 | reversed_num = 0
2 | while num != 0:
3 |     digit = num % 10
4 |     reversed_num = reversed_num * 10 + digit
5 |     num //= 10
6 | print(reversed_num)
```

6406531890023. ✓

```
1 | print(str(num)[::-1])
```

```
1 | reversed_num = 0
2 | while num != 0:
3 |     digit = num % 10
4 |     num /= 10
5 |     reversed_num = reversed_num * 10 + digit
6 | print(reversed_num)
```

6406531890025. ✘

```
1 | print(str(num)[-1::-1])
```

Sub-Section Number :

7

Sub-Section Id :

64065380797

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 84 Question Id : 640653565447 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 5 Selectable Option : 0

Question Label : Multiple Select Question

Consider the following snippet of code:

```
1 def f(word, n):
2     P = dict()
3     for c in word:
4         if c not in P:
5             P[c] = 0
6             P[c] += 1
7     for c in P:
8         if P[c] == n:
9             return True
10    return False
11
12 if some_word.isalpha():
13     print(True)
14 print(f(some_word, 5))
```

`some_word` is a string variable that has already been defined. The above code runs without any errors.

The output when the code given above is executed is as follows:

```
1 True
2 True
```

Which of the following statements are True? Note that your answer should hold for any value of the string `some_word` that results in the above output.

Options :

6406531890010. ✓ `some_word` is only made up of alphabets

6406531890011. ✗ `some_word` could also contain numbers

6406531890012. ✓ `len(some_word)` is at least 5

6406531890013. ✓ At least one letter in the English alphabet occurs exactly five times in `some_word`

6406531890014. ✗ Exactly one letter in the English alphabet occurs at least five times in `some_word`

Question Number : 85 Question Id : 640653565451 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Selectable Option : 0

Question Label : Multiple Select Question

We are not sure if the file `file.txt` exists in the current directory. Select all error-free implementations of a program that reads this file and prints one line of the file at a time. If the file doesn't exist, the code should terminate gracefully.

Options :

```
1 | try:
2 |     f = open('file.txt', 'r')
3 |     for line in f:
4 |         print(line.strip())
5 | except FileNotFoundError:
6 |     print('This file does not exist')
```

6406531890027. ✓

```
1 | try:
2 |     f = open('file.txt', 'r')
3 |     for line in f:
4 |         print(line.strip())
5 | except:
6 |     print('This file does not exist')
```

6406531890028. ✓

```
1 | try:
2 |     f = open('file.txt', 'r')
3 |     for line in f:
4 |         print(line.strip())
5 | except ValueError:
6 |     print('This file does not exist')
```

6406531890029. ✗

```
1 | try:
2 |     f = open('file.txt', 'r')
3 |     for line in f:
4 |         print(line.strip())
5 | except FileNotFoundError:
6 |     print('This file does not exist')
7 | except:
8 |     print('This is for all other errors that might come up')
```

6406531890030. ✓

Question Number : 86 Question Id : 640653565452 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Selectable Option : 0

Question Label : Multiple Select Question

Let `L` be a $m \times m$ matrix of numbers that has already been defined and populated. We wish to find the sum of the elements in each row and store all such row-sums in a list called `rowsum`. Rows are indexed from 0 to $m - 1$. For the j^{th} row, `rowsum[j]` should be the sum of all elements in that row. Select all correct code snippets that achieve this.

Options :

```
1 | rowsum = []
2 | m = len(L)
3 | row, col = 0, 0
4 | while col < m:
5 |     rowsum.append(0)
6 |     while row < m:
7 |         rowsum[col] += L[row][col]
8 |         row += 1
```

6406531890031. ✘

6406531890032. ✘

```
1 rowsum = []
2 m = len(L)
3 row, col = 0, 0
4 while col < m:
5     rowsum.append(0)
6     while row < m:
7         rowsum[col] += L[col][row]
8         row += 1
9     col += 1
```

```
1 rowsum = []
2 m = len(L)
3 row, col = 0, 0
4 while col < m:
5     row = 0
6     rowsum.append(0)
7     while row < m:
8         rowsum[col] += L[col][row]
9         row += 1
10    col += 1
```

6406531890033. ✓

```
1 rowsum = []
2 m = len(L)
3 for j in range(m):
4     val = 0
5     for i in range(m):
6         val = val + L[i][j]
7     rowsum.append(val)
```

6406531890034. ✘

```
1 rowsum = []
2 m = len(L)
3 for j in range(m):
4     val = 0
5     for i in range(m):
6         val = val + L[j][i]
7     rowsum.append(val)
```

6406531890035. ✓

Sub-Section Number :

8

Sub-Section Id :

64065380798

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 87 Question Id : 640653565454 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

`words.txt` is a text file with the following contents:

```
1 no
2 on
3 one
4 two
5 a
6 an
7 the
8 six
9 fin
10 out
```

What is the output of the following snippet of code?

```
1 def do_something(filename):
2     f = open(filename, 'r')
3     maxword = f.readline().strip()
4     count = 1
5     for line in f:
6         word = line.strip()
7         if len(word) > len(maxword):
8             maxword = word
9             count = 1
10        elif len(word) == len(maxword):
11            count += 1
12    f.close()
13    return count
14
15 print(do_something('words.txt'))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Question Number : 88 Question Id : 640653565455 Question Type : SA Calculator : None

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

Correct Marks : 4

Question Label : Short Answer Question

Consider the following snippet of code:

```
1 | L = [1, 2, 3, 4, 5]
2 | S = []
3 | T = 0
4 | i = 0
5 | while i < len(L):
6 |     S += L[:i] + L[i:]
7 |     for j in S:
8 |         T += j
9 |     i += 1
```

What will be the value of `T` at the end of execution of the above code?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

225

Sub-Section Number : 9

Sub-Section Id : 64065380799

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 89 Question Id : 640653565456 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 output of the following snippet of code?

```
1 def some_fun(x):
2     if x < 3:
3         return 0
4     return 1 + some_fun(x // 3)
5
6 print(some_fun(59049))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Sub-Section Number : 10

Sub-Section Id : 64065380800

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565457 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Question Pattern Type :** NonMatrix **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Question Numbers : (90 to 93)

Question Label : Comprehension

Assume the values of Boolean variables `A` and `B` are `True` and `False` respectively.

What will be output of the given code snippets?

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 90 Question Id : 640653565458 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

```
1 | print(not (A and B), not(A) and B)
```

Options :

6406531890045. ✘ 1 | False False

6406531890046. ✓ 1 | True False

6406531890047. ✘ 1 | False True

6406531890048. ✘ 1 | True True

Question Number : 91 Question Id : 640653565459 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

```
1 | print(A or B and A or not(B))
```

Options :

6406531890049. ✘ 1 | False

6406531890050. ✘ 1 | True False

6406531890051.

* 1 | False True

6406531890052. ✓ 1 | True

Question Number : 92 Question Id : 640653565460 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

1 | print(not(A or B), not(A) or B)

Options :

6406531890053. ✓ 1 | False False

6406531890054. ✗ 1 | True False

6406531890055. ✗ 1 | False True

6406531890056. ✗ 1 | True True

Question Number : 93 Question Id : 640653565461 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

1 | print(not A and B or A and B)

Options :

6406531890057. ✓ 1 | False

6406531890058. ✘ 1 | True False

6406531890059. ✘ 1 | False True

6406531890060. ✘ 1 | True

Sub-Section Number : 11

Sub-Section Id : 64065380801

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565462 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (94 to 95)

Question Label : Comprehension

`Rational` is a class that represents positive rational numbers. Recall that a rational number x is of the form $\frac{p}{q}$, where the greatest common divisor of (p, q) is equal to 1, with $q \neq 0$. In this case, we will be modeling only positive rationals as a class.

```
1  class Rational:
2      def __init__(self, num, den):
3          self.num = num
4          self.den = den
5          self.reduce()
6
7      def print_info(self):
8          if self.den == 1:
9              print(f'{self.num}')
10         else:
11             print(f'{self.num}/{self.den}')
12
13     def reduce(self):
14         for i in range(min(self.num, self.den), 1, -1):
15             if self.num % i == 0 and self.den % i == 0:
16                 self.num = self.num // i
17                 self.den = self.den // i
18                 break
19
20     def divide(self, k):
21         self.den = self.den * k
22         self.reduce()
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 94 Question Id : 640653565463 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 is the output of the following snippet of code?

```
1  x = Rational(15, 24)
2  x.divide(5)
3  x.print_info()
```

Options :

6406531890061. ✘

1 | 3/24

6406531890062. ✓

1 | 1/8

6406531890063. ✘

1 | 15/24

6406531890064. ✘

1 | 5/24

Question Number : 95 Question Id : 640653565464 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

A new method `add` should be introduced into the class to add two rational numbers. This method should accept another rational number number, say `rat`, as argument and return the sum of the current rational number and `rat`.

Select the correct implementation of this method.

Sample behavior of this method is given below:

Input:

```
1 | a = Rational(10, 2)
2 | b = Rational(10, 3)
3 | c = a.add(b)
4 | c.print_info()
```

Output:

```
1 | 25/3
```

Options :

```
1 def add(self, rat):
2     out = Rational(1, 1)
3     out.num = self.num + rat.num
4     out.den = self.den + rat.den
5     return out
```

6406531890065. ✘

```
1 def add(self, rat):
2     out = Rational(1, 1)
3     out.num = self.num + rat.num
4     out.den = self.den + rat.den
5     out.reduce()
6     return out
```

6406531890066. ✘

```
1 def add(rat):
2     out = Rational(1, 1)
3     out.den = self.den * rat.den
4     out.num = self.num * rat.den + rat.num * self.den
5     out.reduce()
6     return out
```

6406531890067. ✘

```
1 def add(self, rat):
2     out = Rational(1, 1)
3     out.den = self.den * rat.den
4     out.num = self.num * rat.den + rat.num * self.den
5     out.reduce()
6     return out
```

6406531890068. ✓

Sem2 English2

Section Id : 64065338386

Section Number : 5

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 36

Number of Questions to be attempted : 36

Section Marks :	100
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 :	64065380802
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 96 Question Id : 640653565465 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "[FOUNDATION LEVEL : SEMESTER 2: ENGLISH 2 \(COMPUTER BASED EXAM\)](#)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE [TOP](#) FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531890069. ✓ YES

6406531890070. ✗ NO

Sub-Section Number :	2
Sub-Section Id :	64065380803
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653565466 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (97 to 106)

Question Label : Comprehension

Read the passage and answer the given subquestions

Africa, south of the Sahara is often said to be the limbo of the international system, existing only at the outer limits of the planet which we inhabit. But, again according to a widespread opinion, it is unlikely that Africa is a limbo in the sense of Roman Catholic theology—that is to say, a place where souls are prepared for redemption. 'Africa has remained cut off from all contact with the rest of the world; it is the land of gold, forever pressing in upon itself, and the land of childhood, removed from the light of self-conscious history and wrapped in the dark mantle of night', wrote Hegel. The vast literature produced by journalists and academics which refers ad nauseam to the marginalisation of the sub-continent, or to its 'disconnection', even if it is only 'by default', does no more than reproduce Hegel's idea that this part of the globe is an 'enclave', existing in 'isolation' on account of its deserts, its forests and its alleged primitiveness. For those who subscribe to this school of thought, the spread of war as a mode of political regulation over the last decade or so is a sign that the day of salvation is yet far off. Evidence is offered by those terrible messengers, the handless amputees produced by war in Sierra Leone, the Dantesque inferno of the genocide of Rwandan Tutsis in 1994, or the spread of the AIDS pandemic, a sinister companion of conflict, which decimates those populations which war has spared.

Nevertheless, if we are to stay with the metaphor of limbo, it is above all in a limbo of the intellect that such a simplistic view of the relation of Africa with the rest of the world is conceived. For the sub-continent is neither more nor less than a part of the planet, and it is pointless to pretend that, to quote one French former colonial governor, it leads a 'traditional existence shielded from the outside world, as though it were another planet', which passively absorbs the shock of having been made dependent on other parts of the world.

- *Africa in the World: A History of Extraversion*, Jean-François Bayart and Stephen Ellis in "African Affairs" journal.

Sub questions

Question Number : 97 Question Id : 640653565467 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

Which of the following statements is most accurate, with respect to this passage?

Options :

6406531890071. ✘ The passage talks about the South African football team

6406531890072. ✘ The passage talks about the limbo of the international system

6406531890073. ✓ The passage talks about the ways Africa have been portrayed intellectually

6406531890074. ✘ The passage talks about Africa in isolation

Question Number : 98 Question Id : 640653565468 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 is the meaning of *metaphor*?

Options :

6406531890075. ✘ A thing regarded as symbolic of something else

6406531890076. ✓ A figure of speech where a word or phrase is applied to an object or action where it is not literally applicable

6406531890077. ✘ Neither A thing regarded as symbolic of something else nor A figure of speech where a word or phrase is applied to an object or action where it is not literally applicable

6406531890078. ✘ Both A thing regarded as symbolic of something else and A figure of speech where a word or phrase is applied to an object or action where it is not literally applicable

Question Number : 99 Question Id : 640653565469 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

Hegel says that _____.

Options :

6406531890079. ✓ Africa has remained cut off from all of the world

6406531890080. ✗ Africa is the land of silver

6406531890081. ✗ Africa is the light of self conscious history

6406531890082. ✗ None of these

Question Number : 100 Question Id : 640653565470 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 vast literature produced by journalists and academics which refers ad nauseam to the marginalisation of the sub-continent, or to its 'disconnection', even if it is only 'by default', does no more than reproduce Hegel's idea that this part of the globe is an 'enclave', existing in 'isolation' on account of its deserts, its forests and its alleged primitiveness.' How many clauses are there in this sentence?

Options :

6406531890083. ✗ 5

6406531890084. ✓ 4

6406531890085. ✗ 3

Question Number : 101 Question Id : 640653565471 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 is the meaning of *isolation*?

Options :

6406531890086. ✘ The state of being surrounded by people

6406531890087. ✘ The process of constructing an isotope

6406531890088. ✓ The process or state of being lonely or alone

6406531890089. ✘ The process or state of being constantly annoyed

Question Number : 102 Question Id : 640653565472 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 Roman Catholic theology, Africa _____.

Options :

6406531890090. ✘ Is prepared for redemption

6406531890091. ✘ Is the land of Christ

6406531890092. ✘ Is likely to be in a limbo

6406531890093. ✓ Is unlikely to be in a limbo

Question Number : 103 Question Id : 640653565473 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

Which of the following words mean '*ominous*' or '*menacing*'?

Options :

6406531890094. ✓ Sinister

6406531890095. ✗ Companion

6406531890096. ✗ Enclave

6406531890097. ✗ Marginalisation

Question Number : 104 Question Id : 640653565474 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

Expand the acronym AIDS in this context

Options :

6406531890098. ✗ Anti-Intellectual Defence System

6406531890099. ✓ Acquired Immune Deficiency Syndrome

6406531890100. ✗ Asthmatic Influenza Development Syndrome

6406531890101. ✗ Allergic Interactions Decoding Software

Question Number : 105 Question Id : 640653565475 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 the author, traditional portrayals of Africa are

Options :

6406531890102. ✗ Extraordinary and intelligent

6406531890103. ✗ Eloquent and unique

6406531890104. ✓ Simplistic and pointless

6406531890105. ❌ Lazy and idiotic

Question Number : 106 Question Id : 640653565476 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

'But, again according to a widespread opinion, it is unlikely that Africa is a limbo in the sense of Roman Catholic theology—that is to say, a place where souls are prepared for redemption.' The given sentence expresses

Options :

6406531890106. ❌ Subjunctive mood

6406531890107. ✓ Indicative mood

6406531890108. ❌ Imperative mood

Question Id : 640653565477 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (107 to 116)

Question Label : Comprehension

Listen to the audio and answer the given subquestions:



885_640653_0_1984128_hs1002enfe2s1q11mq.mp3

Sub questions

Question Number : 107 Question Id : 640653565478 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 initial high costs of building the railroads were well worth it.

Options :

6406531890109. ✓ TRUE

6406531890110. ✗ FALSE

Question Number : 108 Question Id : 640653565479 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

Why were trains frequently vulnerable to delays?

Options :

6406531890111. ✗ The loco pilot was lazy

6406531890112. ✓ The tracks were too crowded

6406531890113. ✗ The tracks were rigged

6406531890114. ✗ The trains were slow

Question Number : 109 Question Id : 640653565480 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 early days, train travel could be dirty". Why was it so?

Options :

6406531890115. ✗ The coaches were never clean

6406531890116. ✗ The passengers never showered or cleaned themselves when in train

6406531890117. ✓ The smoke from the engine could not be kept away from the rest of the train

6406531890118. ✗ The trains had no trash cans

Question Number : 110 Question Id : 640653565481 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

Train travel became increasingly common in _____.

Options :

6406531890119. ✗ The mid to late 20th century

6406531890120. ✗ The mid to late 13th century

6406531890121. ✗ The mid to late 18th century

6406531890122. ✓ The mid to late 19th century

Question Number : 111 Question Id : 640653565482 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

"Travel at night in trains was tricky in the initial days of train travel". Why was it so?

Options :

6406531890123. ✓ Trains lacked effective methods of illumination

6406531890124. ✗ Trains lacked communication skills

6406531890125. ✗ Loco pilots were often sleepy

6406531890126. ✗ Trains could not sing at night

Question Number : 112 Question Id : 640653565483 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

Rides on early trains were rather smooth because of the way the tracks were laid.

Options :

6406531890127. ✗ TRUE

6406531890128. ✓ FALSE

Question Number : 113 Question Id : 640653565484 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

How many syllables are there in the word *locomotive*?

Options :

6406531890129. ✗ 2

6406531890130. ✗ 3

6406531890131. ✓ 4

6406531890132. ✗ 5

Question Number : 114 Question Id : 640653565485 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

How many syllables are there in the word *transportation*?

Options :

6406531890133. ✘ 1

6406531890134. ✘ 2

6406531890135. ✘ 3

6406531890136. ✓ 4

Question Number : 115 Question Id : 640653565486 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

Which among the following is an antonym of the word *common*?

Options :

6406531890137. ✓ Rare

6406531890138. ✘ Usual

6406531890139. ✘ Ordinary

6406531890140. ✘ Run-of-the-mill

Question Number : 116 Question Id : 640653565487 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

Which among the following is a synonym of the word *drawback*?

Options :

6406531890141. ✘ Advantage

6406531890142. ✓ Disadvantage

6406531890143. ✘ Positive

6406531890144. * Big plus

Sub-Section Number :	3
Sub-Section Id :	64065380804
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653565488 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (117 to 121)

Question Label : Comprehension

Read the following exchange between a student and a professor and answer the given subquestions:

Abeer: Hi, Professor Sriram. My name is Abeer.

Prof. Sriram: Hi, Abeer. How can I help you?

Abeer: I was told that you place students in internships for various university programs.

Prof. Sriram: Yes.

Abeer: Well, I am interested in the internship at the university art museum... I needed to know what responsibilities interns have, what qualifications they need to have etc...

Prof. Sriram: Sorry, those positions are all filled for this year...

Abeer: Oh! But I just saw the announcement on the museum website this morning.

Prof. Sriram: Unfortunately, the website is out of date.

Abeer: I want to do museum work after I graduate, and the job experience would look great on my

résumé. Plus it's the only paid internship on campus.

Prof. Sriram: I understand. However, there are some other ways to get some work experience, even if it's not exactly what you want. For instance, the library is looking for student volunteers.

Abeer: The library? But...

Prof. Sriram: Well, they're planning an exhibition of photographs documenting the history of the university. And they're looking for student volunteers to help go through the archives and select images that'll show how the university's changed over the last hundred years.

Abeer: Hmm...

Prof. Sriram: Now that's only a four-week project, I think. And, of course, it's unpaid.

Abeer: But it would be something to put on my résumé...

Prof. Sriram: Exactly. Why don't you read the job description—it's posted on the library's website. If you're interested, let me know, and I'll put in a good word for you with Geeta Raj. She's the library's exhibitions director and will be interviewing applicants.

Abeer: OK, thank you! I'll do that right away.

Sub questions

Question Number : 117 Question Id : 640653565489 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 do the speakers mainly discuss?

Options :

6406531890145. ✓ Work opportunities for students

6406531890146. ✘ The professor's work at the museum

6406531890147. ✘ The man's qualifications for a job

6406531890148. ✘ Possible careers for the man after he graduates

Question Number : 118 Question Id : 640653565490 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

Why does Abeer want to intern at the university's art museum?

Options :

6406531890149. ✘ Because museum internships are paid a lot, and he needs the money

6406531890150. ✘ Because he needs to fulfill a credit requirement

6406531890151. ✘ Because he couldn't find a job yet, and needs some work experience

6406531890152. ✓ Because he wants to work in a museum after he graduates, and needs the experience

Question Number : 119 Question Id : 640653565491 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

Why is Abeer disappointed?

Options :

6406531890153. ✘ He has to quit his job at the library.

6406531890154. ✘ The professor will not allow him to take her class.

6406531890155. ✘ The university recently closed its museum.

6406531890156. ✓ The internship he wants is unavailable.

Question Number : 120 Question Id : 640653565492 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 will be displayed in the exhibition at the university library?

Options :

6406531890157. ✘ Rare books

6406531890158. ✘ Paintings

6406531890159. ✓ Photographs

6406531890160. ✘ Historical reports

Question Number : 121 Question Id : 640653565493 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

Why is the library conducting an exhibition?

Options :

6406531890161. ✘ To show the history of the town

6406531890162. ✓ To show how the university has changed over the last hundred years

6406531890163. ✘ To mark the silver jubilee year of the university

6406531890164. ✘ To document the histories of famous alumni from the university

Question Id : 640653565494 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (122 to 126)

Question Label : Comprehension

Fill in the blanks with correct expressions of numbers/values/quantity in the given subquestions.

India, with (1)_____ than a billion residents, has the second (2)_____ education system in the world (after China). Experts estimate that 32 percent of its current population is under the age of 15.1 But counter to the image of India as a youthful engine of economic growth where (3)_____ urban-based citizens work in some of the best technology-centered jobs in the world, males in India complete just 2.9 years of schooling on average, females just 1.8 years. And for the (4)_____ proportion who do persist through primary and secondary schooling, the (5)_____ of instruction varies widely, depending on the region of the country and whether one is enrolled in a State-supported public school or a fee-based private school.

Sub questions

Question Number : 122 Question Id : 640653565495 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 the correct answer for blank (1).

Options :

6406531890165. ❌ Most

6406531890166. ✓ More

6406531890167. ❌ Bigger

6406531890168. ❌ Big

Question Number : 123 Question Id : 640653565496 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 the correct answer for blank (2).

Options :

6406531890169. ✓ Largest

6406531890170. ✗ Largely

6406531890171. ✗ Larger

6406531890172. ✗ Large

Question Number : 124 Question Id : 640653565497 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 the correct answer for blank (3).

Options :

6406531890173. ✗ Massive

6406531890174. ✗ Large

6406531890175. ✓ Many

6406531890176. ✗ Huge

Question Number : 125 Question Id : 640653565498 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 the correct answer for blank (4).

Options :

6406531890177. ❌ Mostly

6406531890178. ✓ Small

6406531890179. ❌ Millions

6406531890180. ❌ Lakhs

Question Number : 126 Question Id : 640653565499 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 the correct answer for blank (5).

Options :

6406531890181. ❌ Meters

6406531890182. ✓ Quality

6406531890183. ❌ Liters

6406531890184. ❌ Numbers

Question Id : 640653565500 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (127 to 131)

Question Label : Comprehension

Read the following E-mail and answer the given subquestions

From: John Samuel johns@gmail.com
To: Michael Davis michaeld@gmail.com

Sub: _____

_____,

I enjoyed speaking with you the other day at the interview for the copywriter. The job appears to be an ideal match for my skills, ambitions, and interests.

The innovative approach to the corporate culture within the advertising world confirmed my wish to work at your firm.

I will bring my engineering skills, assertiveness, and ability to engage others to work in a cooperative way within the public relations department.

Thank you for taking the time to interview me for the copywriter profile at Dream Big Entertainments. I have a high level of interest in working for your firm and look forward to hearing from you.

_____,

John

Sub questions

Question Number : 127 Question Id : 640653565501 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 the most appropriate subject from the following

Options :

6406531890185. ✘ Job interview

6406531890186. ✘ Application for job

6406531890187. ✓ Letter of gratitude (for job interview)

6406531890188. ✘ Request for interview results

Question Number : 128 Question Id : 640653565502 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 the most appropriate salutation from the following

Options :

6406531890189. ✘ Hi Michael,

6406531890190. ✘ Dear Davis,

6406531890191. ✓ Dear Michael,

Question Number : 129 Question Id : 640653565503 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

If Michael is a doctor, what should be the appropriate salutation?

Options :

6406531890192. ✘ Dr. Michael,

6406531890193. ✓ Dear Mr. Davis,

6406531890194. ✘ Dear Dr. Davis

Question Number : 130 Question Id : 640653565504 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 the correct statements from the following

- i) Emails are informal method of communication
- ii) Emails can be rewritten before sending
- iii) Emails are temporary
- iv) Emails can be considered as evidence

Options :

6406531890195. ✘ i, ii, and iii only

6406531890196. ✓ ii and iv only

6406531890197. ✘ iii and iv only

6406531890198. ✘ only iv

Question Number : 131 Question Id : 640653565505 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

Salutation in an email is followed by ____.

Options :

6406531890199. ✘ Colon

6406531890200. ✘ Comma

6406531890201. ✘ Period

6406531890202. ✓ Both Colon and Comma

Sub-Section Number : 4

Sub-Section Id : 64065380805

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 132 Question Id : 640653565506 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

Discourse marker 'moreover' occurs in the __ position

Options :

6406531890203. ❌ Initial

6406531890204. ❌ Middle

6406531890205. ❌ Final

6406531890206. ✓ Both Initial and Middle

Question Number : 133 Question Id : 640653565507 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

His guilt is apparent to everyone. The discourse marker in this sentence is __.

Options :

6406531890207. ❌ Apparent

6406531890208. ❌ His

6406531890209. ❌ Everyone

6406531890210. ✓ No discourse marker

Question Number : 134 Question Id : 640653565508 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 could spend this money now. ___ I could save it up for a future goal.

Options :

6406531890211. ✘ Because

6406531890212. ✓ On the other hand

6406531890213. ✘ Contrary

Question Number : 135 Question Id : 640653565509 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

"*Make room for the press*" is an example of _____.

Options :

6406531890214. ✓ Metonymy

6406531890215. ✘ Synecdoche

6406531890216. ✘ Metaphor

6406531890217. ✘ Juxtaposition

Question Number : 136 Question Id : 640653565510 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

"*Outwardly, they appeared suspicious.*" The adverb here is __.

Options :

6406531890218. ✘ Comment adverb

6406531890219. ✓ Viewpoint adverb

6406531890220. ❌ Focus adverb

6406531890221. ❌ None of these

Question Number : 137 Question Id : 640653565511 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

'Very' and 'very much' can be used interchangeably. This statement is

Options :

6406531890222. ❌ TRUE

6406531890223. ✓ FALSE

Question Number : 138 Question Id : 640653565512 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 most grammatically correct sentence.

Options :

6406531890224. ❌ Yesterday was an alarming quite day.

6406531890225. ❌ Yesterday was quite a day alarming.

6406531890226. ❌ Yesterday was alarming a quite day.

6406531890227. ✓ Yesterday was quite an alarming day.

Question Number : 139 Question Id : 640653565513 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

Convert the following sentence into passive voice.

Inder stores grapes in this room.

Options :

6406531890228. ✓ Grapes are stored in this room by Inder.

6406531890229. ✗ Grapes were stored in this room by Inder.

6406531890230. ✗ Grapes will be stored in this room by Inder.

6406531890231. ✗ Grapes got to be stored in this room by Inder.

Question Number : 140 Question Id : 640653565514 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 correct statements

(i) Ramu have written well

(ii) They had an excellent trip

(iii) Raju has a beautiful car

(iv) Shyam and I are eating dinner

Options :

6406531890232. ✗ (i) and (ii) only

6406531890233. ✗ (i), (ii) and (iii) only

6406531890234. ✓ (ii), (iii) and (iv) only

6406531890235. ✗ (iv) only

Question Number : 141 Question Id : 640653565515 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

"She had a diploma, and she opted for higher studies." Here, the coordinating conjunction is _____.

Options :

6406531890236. ✘ She

6406531890237. ✓ And

6406531890238. ✘ For

6406531890239. ✘ Had

Question Number : 142 Question Id : 640653565516 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

John's teacher is the person whom we spoke to at the PTA meeting. Here the subordinate clause is in _____ nature.

Options :

6406531890240. ✘ nominal

6406531890241. ✓ adjectival

6406531890242. ✘ adverbial

6406531890243. ✘ no subordinate clause

Question Number : 143 Question Id : 640653565517 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

Identify the type of clause embedded in the following sentence.

"They'd like to go out while it is still raining."

Options :

6406531890244. ✘ Subject clause

6406531890245. ✓ Adverbial clause

6406531890246. ✘ Plain clause

6406531890247. ✘ Complement clause

Question Number : 144 Question Id : 640653565518 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 with the most appropriate modal verb.

_____ you please do a recap for me?

Options :

6406531890248. ✘ Could

6406531890249. ✘ Would

6406531890250. ✓ Either could or would

6406531890251. ✘ None of these

Question Number : 145 Question Id : 640653565519 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 with the most appropriate modal verb according to the context.

She informed them that she _____ be late for the meeting.

Options :

6406531890252. ✓ Would

6406531890253. ✗ Will

6406531890254. ✗ Is

6406531890255. ✗ Have

Question Number : 146 Question Id : 640653565520 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 with the most appropriate modal verb according to the context.

I _____ clean the front porch and the garden.

Options :

6406531890256. ✗ Would

6406531890257. ✓ Will

6406531890258. ✗ Were

6406531890259. ✗ Have

Question Number : 147 Question Id : 640653565521 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

"*Can I have a drink, please?*" is more formal than "*May I have a drink, please?*"

Options :

6406531890260. ✘ TRUE

6406531890261. ✓ FALSE

Question Number : 148 Question Id : 640653565522 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 with the most appropriate modal verb.

We __ visit the old school and help in its renovation. (Context- Strong obligation)

Options :

6406531890262. ✘ Should

6406531890263. ✓ Must

6406531890264. ✘ Shall

Question Number : 149 Question Id : 640653565523 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 following sentence, fill in the blank with 'if' or 'whether'.

The nurses asked the doctor _____ to start preparations for the surgery.

Options :

6406531890265. ✓ Whether

6406531890266. ✗ If

6406531890267. ✗ Either *if* or *whether* can be used

Question Number : 150 Question Id : 640653565524 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

Among the following, identify the complex sentence.

Options :

6406531890268. ✗ Saqib is a great bowler.

6406531890269. ✗ Vani likes her cats and Jacob likes his dogs.

6406531890270. ✗ Khalid is one of the most important Indian poets.

6406531890271. ✓ She knows that she is in a key decision-making role in the company.

Question Number : 151 Question Id : 640653565525 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

Yesterday was not a great day, _____?

Options :

6406531890272. ✓ Was it

6406531890273. ✗ Were it

6406531890274. ✗ Wasn't it

6406531890275. ✘ Is it

Question Number : 152 Question Id : 640653565526 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

"They have finished the given task." Indirect speech of the given sentence is _____.

Options :

6406531890276. ✘ They were finished the given task

6406531890277. ✘ They have been finishing the given task

6406531890278. ✓ They had finished the given task

6406531890279. ✘ They had been finishing the given task

Question Number : 153 Question Id : 640653565527 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

___ people have completed the final module.

Options :

6406531890280. ✘ Much

6406531890281. ✘ Not much

6406531890282. ✓ Not many

6406531890283. ✘ None of these

Question Number : 154 Question Id : 640653565528 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 can only give you that ___ money.

Options :

6406531890284. ❌ Many

6406531890285. ✓ Much

6406531890286. ❌ Not much

6406531890287. ❌ Some

Question Number : 155 Question Id : 640653565529 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

"They would have reached there already if they had boarded a train." This is a ____ sentence.

Options :

6406531890288. ❌ Zero conditional

6406531890289. ❌ First conditional

6406531890290. ✓ Second conditional

6406531890291. ❌ Mixed conditional

Question Number : 156 Question Id : 640653565530 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 of the following falls under free morphemes ?

Options :

6406531890292. ✘ Sharp

6406531890293. ✘ And

6406531890294. ✘ Un-

6406531890295. ✓ Both Sharp and And

Question Number : 157 Question Id : 640653565531 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 bought a new bike. The underlined word is an example of ____.

Options :

6406531890296. ✘ Back clipping

6406531890297. ✓ Fore clipping

6406531890298. ✘ Middle clipping

6406531890299. ✘ Complex clipping

Question Number : 158 Question Id : 640653565532 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

His careless driving caused the accident. This sentence has ____ suffixes.

Options :

6406531890300. ✘ Zero

6406531890301. ✘ One

6406531890302. ✘ Two

6406531890303. ✓ Three

Question Number : 159 Question Id : 640653565533 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

"Raju gets anything." This sentence is ungrammatical.

Options :

6406531890304. ✓ TRUE

6406531890305. ✘ FALSE

Question Number : 160 Question Id : 640653565534 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 politician agreed for a quid pro quo deal. Here 'quid pro quo' means ____.

Options :

6406531890306. ✘ A thing

6406531890307. ✓ Something for something in exchange

6406531890308. ✘ Corrupt

6406531890309. ✘ Safe

Question Number : 161 Question Id : 640653565535 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

Hyper means _____.

Options :

6406531890310.  In excess

6406531890311.  lesser

6406531890312.  medium

6406531890313.  crowded

Sem1 Statistics1

Section Id : 64065338387

Section Number : 6

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 14

Number of Questions to be attempted : 14

Section Marks : 40

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 : 64065380806

Question Shuffling Allowed : No

Is Section Default? : null

Question Number : 162 Question Id : 640653565536 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER 1: STATISTICS FOR DATA SCIENCE 1 (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531890314. ✓ YES

6406531890315. ✘ NO

Sub-Section Number : 2

Sub-Section Id : 64065380807

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 163 Question Id : 640653565537 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

Rating's feedback as poor, good and excellent of 5 customers is collected in a shop. If feedback of two more customers are recorded, then choose the correct option(s). (Assume initial data was bimodal)

Options :

6406531890316. ❌ New dataset will always be bimodal.

6406531890317. ✓ New dataset may change as unimodal.

6406531890318. ❌ Median of new dataset will always remain same.

6406531890319. ✓ Median of new dataset may change.

Sub-Section Number : 3

Sub-Section Id : 64065380808

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 164 Question Id : 640653565542 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

If $E[X] = \mu$, what is $\text{Var}(X - \mu)$?

Options :

6406531890330. ❌ μ

6406531890331. ✓ $\text{Var}(X)$

6406531890332. ❌ $-\mu$

6406531890333. ❌ 0

Question Number : 165 Question Id : 640653565551 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

If X and Y are independent Poisson random variables with expectations 3 and 5 respectively, then find the variance of $2X + Y$.

Options :

6406531890347. ✓ 17

6406531890348. ✗ 11

6406531890349. ✗ 23

6406531890350. ✗ Insufficient information

Sub-Section Number : 4

Sub-Section Id : 64065380809

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 166 Question Id : 640653565548 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3

Question Label : Multiple Choice Question

Consider the dataset $-5, -2, -4, -6$ and -8 . If we add 4 to all observations, then what is the 75^{th} percentile of new dataset?

Options :

6406531890338. ✗ -4

6406531890339. ✗ -2

6406531890340. ✗ -6

6406531890341. ✓ 0

Question Number : 167 Question Id : 640653565550 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

Three cards are drawn at random from an ordinary pack of 52 cards. Find the probability that exactly one ace card.

Options :

6406531890343. ✓
$$\frac{48C_2 \times 4C_1}{52C_3}$$

6406531890344. ✗
$$\frac{48P_2 \times 4P_1}{52P_3}$$

6406531890345. ✗
$$\frac{4C_1}{52C_3}$$

6406531890346. ✗
$$\frac{4P_1}{52P_3}$$

Sub-Section Number : 5

Sub-Section Id : 64065380810

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 168 Question Id : 640653565541 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

Suppose you play for \$3 at a carnival game. A pair of fair six-sided die is rolled. If the sum of the numbers on the uppermost face of the die is 6, you get a prize worth \$5. If the sum of the numbers on the uppermost face of the die is 12, you get a prize worth \$10, otherwise you get 0. Let X denote the profit of the player. Find the probability distribution of X .

Options :

X	0	5	10
$P(X)$	$5/6$	$5/36$	$1/36$

6406531890326. ✘

X	-3	2	7
$P(X)$	$5/6$	$5/36$	$1/36$

6406531890327. ✓

X	-3	2	7
$P(X)$	$5/36$	$5/36$	$1/36$

6406531890328. ✘

X	-3	5	10
$P(X)$	$5/36$	$5/36$	$1/36$

6406531890329. ✘

Sub-Section Number : 6

Sub-Section Id : 64065380811

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 169 Question Id : 640653565540 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Selectable Option : 0

Question Label : Multiple Select Question

There are 5 UG and 6 PG students in an industrial training program. After the successful completion of the training, the students went through an examination and later ranked based on the scores obtained. Define a random variable X as the highest rank achieved by a PG Student. Assume that all the students(including UG and PG students) will get a distinct rank. Which among the following is/are correct? (Note: $X = 2$ means rank 2 is the highest rank achieved by any one of the PG student.)

Options :

6406531890322. ✓ X ranges from 1 to 6.

6406531890323. ✓ $P(X = 3) = 0.121$

6406531890324. ✗ $P(X = 1) = 0.454$

6406531890325. ✗ X ranges from 1 to 9.

Sub-Section Number :	7
Sub-Section Id :	64065380812
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 170 Question Id : 640653565543 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

From previous experiences, it is known that for every five people interviewed, exactly one person gets shortlisted for the job. Suppose 20 people are interviewed on a particular day, then find the expected number of people who will get shortlisted.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

4

Sub-Section Number :	8
Sub-Section Id :	64065380813
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 171 Question Id : 640653565539 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

Let X be a random variable which follows a Geometric distribution with parameter p where, $X \in \{1, 2, 3, \dots\}$. If $P(X = 1) = 0.6$, find $P(X \leq 3)$. Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.91 to 0.97

Question Number : 172 **Question Id :** 640653565544 **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

Suppose the lifetime of a radio is uniformly distributed between 100 to 120 weeks. What is the conditional probability that the battery will last for more than 115 weeks given that it has already worked for 110 weeks? Enter the answer correct to one decimal place.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0.5

Question Number : 173 **Question Id :** 640653565549 **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

Find the total numbers greater than 6000 that can be formed using the digits 0, 2, 3, 6 and, 9 without repetition.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

144

Sub-Section Number : 9

Sub-Section Id : 64065380814

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 174 **Question Id :** 640653565538 **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 number of customers arriving each day at a petrol pump is assumed to follow a Poisson distribution with mean 10. Assume that number of customers arriving at a petrol pump on different days are independent. What is the probability that on a particular day, the number of customers arrived will be more than 3? Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.96 to 1

Sub-Section Number :	10
Sub-Section Id :	64065380815
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653565545 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (175 to 176)

Question Label : Comprehension

Consider a pmf as follows:

$$P(X = x) = \frac{1}{k} \left(\frac{1}{3}\right)^x \quad \text{where } x = 0, 1, 2, \dots$$

Based on the given information, answer the subquestions

Sub questions

Question Number : 175 Question Id : 640653565546 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Short Answer Question

Find the value of k . Enter the answer correct to one decimal place.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

1.4 to 1.6

Question Number : 176 Question Id : 640653565547 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

Find the $P(X \geq 2)$. Enter the answer correct to two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.08 to 0.14

Sem1 CT

Section Id :	64065338388
Section Number :	7
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	21
Number of Questions to be attempted :	21
Section Marks :	100
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 :	64065380816
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 177 Question Id : 640653565552 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

**THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER 1:
COMPUTATIONAL THINKING (COMPUTER BASED EXAM)"**

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531890351. ✓ YES

6406531890352. ✗ NO

Question Number : 178 Question Id : 640653565553 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

Scores

SeqNo	Name	Gender	DateOfBirth	TownCity	Mathematics	Physics	Chemistry	Total
0	Bhuvanesh	M	7 Nov	Erode	68	64	78	210
					■ ■ ■			
29	Naveen	M	13 Oct	Vellore	72	66	81	219

Words

SeqNo	Word	PartOfSpeech	LetterCount
0	It	Pronoun	2
			■ ■ ■
64	cane.	Noun	4

Library

SeqNo	Name	Author	Genre	Language	Pages	Publisher	Year
0	Igniting Minds	Kalam	Nonfiction	English	178	Penguin	2002
					■ ■ ■		
29	Malgudi Days	Narayan	Fiction	English	150	Indian Thought	1943

Olympics

SeqNo	Name	Gender	Nationality	Host country	Year	Sport	Medal
0	Karnam Malleswari	F	Indian	Australia	2000	Weightlifting	Bronze
- - -							
49	Michael Phelps	M	American	China	2008	Swimming	Gold

Three sample cards out of 30 for Shopping Bills dataset

Item List

SV Stores		Srivatsan		1
Item	Category	Qty	Price	Cost
Carrots	Vegetables/Food	1.5	50	75
Soap	Toiletries	4	32	128
Tomatoes	Vegetables/Food	2	40	80
Bananas	Vegetables/Food	8	8	64
Socks	Footwear/Apparel	3	56	168
Curd	Dairy/Food	0.5	32	16
Milk	Dairy/Food	1.5	24	36
				567

Sun General		Vignesh		14
Item	Category	Qty	Price	Cost
Phone Charger	Utilities	1	230	230
Razor Blades	Grooming	1	12	12
Razor	Grooming	1	45	45
Shaving Lotion	Grooming	0.8	180	144
Earphones	Electronics	1	210	210
Pencils	Stationery	3	5	15
				656

Big Bazaar		Sudeep		2
Item	Category	Qty	Price	Cost
Baked Beans	Canned/Food	1	125	125
Chicken Wings	Meat/Food	0.5	600	300
Cocoa powder	Canned/Food	1	160	160
Capsicum	Vegetables/Food	0.8	180	144
Tie	Apparel	2	390	780
Clips	Household	0.5	32	16
				1525

Options :

6406531890353. ✓ Useful Data has been mentioned above

6406531890354. ❌ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number :

2

Sub-Section Id :

64065380817

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 179 Question Id : 640653565554 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 "Scores" dataset. What will **count** represent at the end of the execution?

```
1 count = 0
2 while(Table 1 has more rows){
3     flag1 = False, flag2 = False
4     Read the first row x in Table 1
5     if(x.Gender == 'F'){
6         flag1 = True
7     }
8     if(x.cityTown == "Chennai"){
9         flag2 = True
10    }
11    if(flag1 == flag2){
12        count = count + 1
13    }
14    Move X to Table 2
15 }
```

Options :

6406531890355. ✘ Number of students who are either female or are from Chennai.

6406531890356. ✘ Number of female students from other than Chennai.

6406531890357. ✓ Number of female students from Chennai + number of male students from other than Chennai.

6406531890358. ✘ Number of all students except female students from other than Chennai.

Question Number : 180 Question Id : 640653565555 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 **B** represent at the end of the execution?

```

1 A = 0, B = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     if(X.LetterCount > 4){
5         A = A + 1
6     }
7     else{
8         if(X.Partofspeech == "Noun"){
9             B = B + 1
10        }
11    }
12    Move X to Table 2
13 }
```

Options :

6406531890359. ❌ Number of nouns with letter count more than 4.

6406531890360. ❌ Number of words other than nouns with letter count more than 4.

6406531890361. ✓ Number of nouns with letter count less than or equal to 4.

6406531890362. ❌ Number of words other than nouns with letter count less than or equal to 4.

Sub-Section Number : 3

Sub-Section Id : 64065380818

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 181 Question Id : 640653565556 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

The following pseudocode is executed using the "Words" dataset. The variable **count** stores the number of words which are either nouns or have letter count at most 5, but not both. Choose the correct code fragment to complete the pseudocode.

```

1 count = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     if(checksomething(X)){
5         count = count + 1
6     }
7     Move X to Table 2
8 }
9
10 Procedure checksomething(Y)
11     A = False, B = False
12     if(X.PartOfSpeech == "Noun"){
13         A = True
14     }
15     if(X.LetterCount <= 5){
16         B = True
17     }
18     *****
19     *** Fill the code ***
20     *****
21 End checksomething

```

Options :

```

1 if(A and B){
2     return(True)
3 }
4 else{
5     return(False)
6 }

```

6406531890363. *

```

1 if(A or B){
2     return(True)
3 }
4 else{
5     return(False)
6 }

```

6406531890364. *

6406531890365. *

```
1 if(not(A and B) or (A or B)){  
2     return(True)  
3 }  
4 else{  
5     return(False)  
6 }
```

```
1 if(not(A and B) and (A or B)){  
2     return(True)  
3 }  
4 else{  
5     return(False)  
6 }
```

6406531890366. ✓

Question Number : 182 Question Id : 640653565557 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. At the end of the execution, **N** captures the name of a book written in a language other than English with the maximum number of pages, and **A** captures the number of pages in the book.

```
1 A = 0, N = "None"  
2 while(Table 1 has more rows){  
3     Read the first row X in Table 1  
4     if(X.Language != "English" and X.Pages => A){  
5         A = X.Pages  
6         N = X.Name  
7     }  
8     Move X to Table 2  
9 }
```

Assume that the rows of the table are shuffled in any random order, choose the correct option.

Options :

6406531890367. ❌ There might be some change in the values of both **A** and **N**, based on the order of rows

6406531890368. ✓ There might be a change in the value of **N**, based on the order of rows

6406531890369. ❌ There will be NO change in the values of both **A** and **N**, based on the order of rows

6406531890370. ❌ There might be a change in the value of **A**, based on the order of rows

Question Number : 183 Question Id : 640653565558 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 "Scores" dataset. What will **B** represent at the end of the execution?

```
1  B = 0
2  while(Table 1 has more rows){
3      Read the first row X in Table 1
4      if(X.Gender == 'M'){
5          if(X.Physics < 90){
6              B = B + 1
7          }
8          else{
9              if(X.Mathematics > 90){
10                 B = B + 1
11             }
12         }
13     }
14     Move X to Table 2
15 }
```

Options :

6406531890371. ❌ Number of female students with Physics marks less than 90 and Mathematics marks more than 90

6406531890372. ✓ Number of male students with either Physics marks less than 90 or with Mathematics marks more than 90

6406531890373. ✘ Number of male students with Physics marks less than 90 and Mathematics marks more than 90

6406531890374. ✘ Number of female students with either Physics marks less than 90 or with Mathematics marks more than 90

Question Number : 184 Question Id : 640653565559 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 "Olympics" dataset. What will **dict** represent at the end of the execution?

```
1 dict = {}
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     if(isKey(dict, X.Name)){
5         if(not member(dict[X.Name], X.Medal)){
6             dict[X.Name] = dict[X.Name] ++ [X.Medal]
7         }
8     }
9     else{
10        dict[X.Name] = [X.Medal]
11    }
12    Move X to Table 2
13}
14 }
```

Options :

6406531890375. ✘ A dictionary with player's names as keys mapped to the list of all the medals won by the player

6406531890376. ✓ A dictionary with player's names as keys mapped to the list of distinct medal

types won by the player

6406531890377. ✘ A dictionary with medal types as keys mapped to the list of players who have won that medal

6406531890378. ✘ A dictionary with medal types as keys mapped to the list of unique players who have won that medal

Question Number : 185 Question Id : 640653565560 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 "Scores" dataset. What will **first(D[i]) - last(D[i])** represent for a given key **i** ?

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

Options :

6406531890379. ✓ The difference between highest and lowest Mathematics marks of the city i

6406531890380. ✘ The difference between overall highest and lowest Mathematics marks of the dataset

6406531890381. ❖ The difference between highest and second highest Mathematics marks of the city i

6406531890382. ❖ It will be always 0

Sub-Section Number : 4

Sub-Section Id : 64065380819

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 186 Question Id : 640653565561 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

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

```

1 wordCount = 0
2 while(Table 1 has more rows){
3     Read the first row X in Table 1
4     if(checkSomething(X) == 1){
5         wordCount = wordCount + 1
6     }
7     Move X to Table 2
8 }

9
10 Procedure checkSomething(Y)
11     i = 1, C = 0
12     A = False, B = False
13     while(i <= Y.LetterCount){
14         if(ith letter of Y.word is vowel){
15             if(A and not B){
16                 C = 1
17             }
18             A = True, B = False
19         }
20         else{
21             if(not A and B){
22                 C = 1
23             }
24             A = False, B = True
25         }
26         i = i + 1
27     }
28     return(C)
29 End checkSomething

```

Options :

6406531890383. ✘ Number of words in which vowels occur consecutively

6406531890384. ✘ Number of words in which no two vowels occur consecutively

6406531890385. ✓ Number of words in which either vowels or consonants occur consecutively

6406531890386. ✘ Number of words in which no two vowels and no two consonants occur consecutively

Question Number : 187 Question Id : 640653565562 Question Type : MCQ Is Question

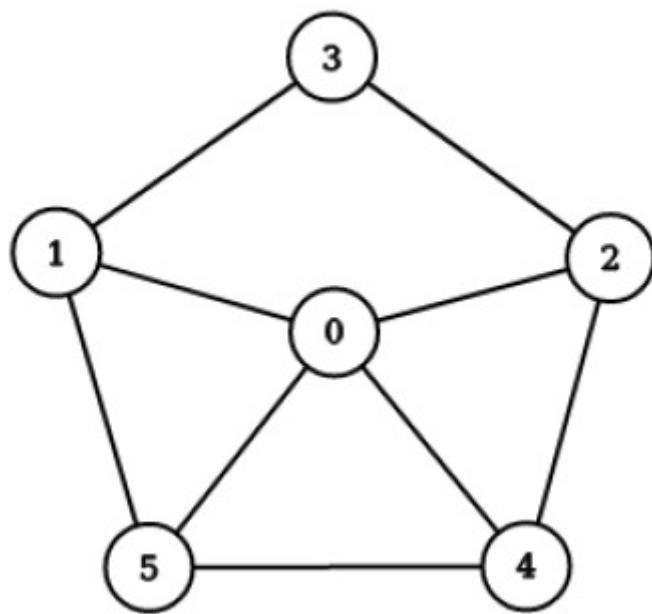
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

Correct Marks : 6

Question Label : Multiple Choice Question

Consider the following graph with six nodes. \mathbf{M} is the 6×6 adjacency matrix corresponding to the graph below. Assume that \mathbf{M} has already been computed.



What will the value of \mathbf{L} be after executing the following pseudocode?

```
1 | D = []
2 | L = []
3 | D[2] = -1
4 | D, L = searchPath(M, D, L, 2)
5 |
6 Procedure searchPath(graph, P, S, i)
7     S = S ++ [i]
8     foreach j in columns(graph){
9         if(graph[i][j] == 1 and not (isKey(P, j))){
10             P[j] = i
11             P, S = searchPath(graph, P, S, j)
12         }
13     }
14     return(P, S)
15 End searchPath
```

Options :

6406531890387. ✘ $\mathbf{L} = [2, 0, 1, 3, 4, 5]$

6406531890388. ✓ $\mathbf{L} = [2, 0, 1, 3, 5, 4]$

6406531890389. * L = [2, 0, 1, 5, 4, 3]

6406531890390. * L = [2, 0, 1, 5, 3, 4]

Sub-Section Number :	5
Sub-Section Id :	64065380820
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 188 Question Id : 640653565563 Question Type : SA Calculator : None

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

Correct Marks : 4

Question Label : Short Answer Question

Consider the procedure given below where **A** and **B** are two rows in the "Words" dataset. Let procedure **getSomething(A)** returns a dictionary with characters of **A.Word** as keys mapped to their frequency in **A.Word**.

```
1 Procedure dosomething(A, B)
2     count = 0
3     dictA = getSomething(A)
4     dictB = getSomething(B)
5     foreach letter in keys(dictA){
6         if(iskey(dictB, letter)){
7             if(dictA[letter] == dictB[letter]){
8                 count = count + 1
9             }
10        }
11    }
12    return(count)
13 End dosomething
```

Let **X.Word** = "developer" and **Y.Word** = "designer", then, what will **doSomething(X, Y)** return?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

2

Sub-Section Number :	6
Sub-Section Id :	64065380821
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 189 Question Id : 640653565564 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

What will the value of \$ be at the end of the execution of the following pseudocode?

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

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Sub-Section Number :	7
Sub-Section Id :	64065380822

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 190 Question Id : 640653565565 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 3 Selectable Option : 0

Question Label : Multiple Select Question

Let **D** be a dictionary. Choose the correct statement(s) about the dictionary **D**. It is a Multiple Select Question (MSQ).

Options :

6406531890393. ❌ **keys(D)** is an ordered list

6406531890394. ✓ **keys(D)** is a list of distinct elements

6406531890395. ❌ All the values of **D** must be of the same datatype

6406531890396. ✓ Value of a key in **D** can be another dictionary

Sub-Section Number : 8

Sub-Section Id : 64065380823

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 191 Question Id : 640653565566 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4 Selectable Option : 0

Question Label : Multiple Select Question

reverse is a recursive procedure to reverse a list. Select the correct code fragment to complete the pseudocode given below. It is a Multiple Select Question (MSQ).

```
1 Procedure reverse(L)
2     if(length(L) <= 1){
3         return(L)
4     }
5     *****
6     * Fill the code      *
7     *****
8 End reverse
```

Options :

6406531890397. ✓ return(reverse(rest(L)) ++ [first(L)])

6406531890398. ✗ return([last(L)] ++ reverse(rest(L)))

6406531890399. ✓ return([last(L)] ++ reverse(rest(init(L)))) ++ [first(L)])

6406531890400. ✗ return([first(L)] ++ reverse(rest(init(L)))) ++ [last(L)])

Sub-Section Number : 9

Sub-Section Id : 64065380824

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 192 Question Id : 640653565567 Question Type : MSQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 5 Selectable Option : 0

Question Label : Multiple Select Question

The procedure **visitedShop(B)** returns the list of names of customers who have visited shop **B** in the "Shopping Bills" dataset. Additionally, each customer must be represented exactly once in the returned list. The following 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 Procedure visitedShop(shop)
2     S = {}
3     while(Pile 1 has more cards){
4         Read the top card x from Pile 1
5         if(x.shopName == shop){
6             if(not(checkMember(S, x.customerName))){
7                 S = [x.shopName] ++ S
8             }
9         }
10        Move x to Pile 2
11    }
12    return(S)
13 End visitedShop
14
15 Procedure checkMember(L, name)
16     present = True
17     foreach x in L{
18         if(x == name){
19             present = True
20             exitloop
21         }
22     }
23     return(present)
24 End checkMember

```

Options :

6406531890401. ✓ Line 2: Incorrect initialization of **S**

6406531890402. ✗ Line 6: Incorrect condition to update **S**

6406531890403. ✓ Line 7: Incorrect update of **S**

6406531890404. ✓ Line 16: Incorrect initialization of **present**

6406531890405. ✗ No error

Sub-Section Number : 10

Sub-Section Id : 64065380825

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 193 Question Id : 640653565568 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 6 Selectable Option : 0

Question Label : Multiple Select Question

The following pseudocode is executed using the "Shopping Bills" dataset. At the end of the execution, **L** stores the list of distinct shops from which only one category of items have been bought. 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 A = []
2 L = []
3 while(Pile 1 has more cards){
4     Read the top card X from Pile 1
5     if(not isKey(A, X.ShopName)){
6         A = updateDict(A, X)
7     }
8     else{
9         A[X.ShopName] = []
10        A = updateDict(A, X)
11    }
12    Move X to Pile 2
13 }
14 foreach k in keys(A){
15     if(length(A[k]) == 1){
16         L = L ++ [k]
17     }
18 }
19 Procedure updateDict(D, Y)
20     foreach z in Y.ItemList{
21         if(not member(D, z.Category)){
22             D[Y.ShopName] = D[Y.ShopName] ++ [z.category]
23         }
24     }
25     return(D)
26 End updateDict
```

Options :

6406531890406. ❌ Line 1: Incorrect initialization of A

6406531890407. ✓ Line 5: Incorrect conditional statement

6406531890408. ❌ Line 16: Incorrect update of L

6406531890409. ✓ Line 21: Incorrect conditional statement

6406531890410. * Line 22: Incorrect updation of dictionary D

Sub-Section Number :	11
Sub-Section Id :	64065380826
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653565569 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0 Question Numbers : (194 to 195)

Question Label : Comprehension

stations is a list that contains the sequence of stations visited by a train from the "Trains" dataset. Each element in **stations** is a pair: *[Name, Distance]*, the first entry is the name of the station, while the second entry is the distance of this station from the first station in the list.

maxDist is a procedure that accepts **stations** as a parameter and returns the names of a pair of consecutive stations which have the longest distance between them on this route. Complete the following procedure.

```
1 Procedure maxDist(stations)
2     pair = ["None", "None"]
3     max = 0, diff = 0
4     prev = first(stations)
5     foreach x in rest(stations){
6         diff = last(x) - last(prev)
7         *****
8         * Fill the code *
9         *****
10        prev = x
11    }
12    return(pair)
13 End maxDist
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 194 Question Id : 640653565570 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

There may be multiple pairs having the same maximum distance. If we wish to find a pair of stations closest to the first station in the list, which of the following is the correct code fragment?

Options :

```
1 if(diff > max){  
2     max = diff  
3     pair = [first(prev), first(x)]  
4 }
```

6406531890411. ✓

```
1 if(diff >= max){  
2     max = diff  
3     pair = [first(prev), first(x)]  
4 }
```

6406531890412. ✘

```
1 if(diff > max){  
2     max = diff  
3     pair = [last(prev), last(x)]  
4 }
```

6406531890413. ✘

```
1 if(diff >= max){  
2     max = diff  
3     pair = [last(prev), last(x)]  
4 }
```

6406531890414. ✘

Question Number : 195 Question Id : 640653565571 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

There may be multiple pairs having the same maximum distance. If we wish to find a pair of stations closest to the last station in the list, which of the following is the correct code fragment?

Options :

```
1 if(diff > max){  
2     max = diff  
3     pair = [first(prev), first(x)]  
4 }
```

6406531890415. ✘

```
1 if(diff >= max){  
2     max = diff  
3     pair = [first(prev), first(x)]  
4 }
```

6406531890416. ✓

```
1 if(diff > max){  
2     max = diff  
3     pair = [last(prev), last(x)]  
4 }
```

6406531890417. ✘

```
1 if(diff >= max){  
2     max = diff  
3     pair = [last(prev), last(x)]  
4 }
```

6406531890418. ✘

Sub-Section Number :

12

Sub-Section Id :

64065380827

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Id : 640653565572 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (196 to 198)

Question Label : Comprehension

trains is a list that contains information about trains associated with a station **stn**. Specifically, each element in this list is a pair: [*Arrival*, *Departure*]. If the arrival or departure time is empty, it is represented as "None".

```
1 flag1 = False, flag2 = True
2 count = 0
3 foreach x in trains{
4     if(first(x) == "None" or last(x) == "None"){
5         flag1 = True
6     }
7     else{
8         count = count + 1
9     }
10 }
11 if(count == length(trains)){
12     flag2 = False
13 }
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 196 Question Id : 640653565573 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

Which of the following statements about the variable **flag1** is True at the end of execution of the given pseudocode?

Options :

6406531890419. ✓ It is True if and only if **stn** is a starting or ending station for at least one train in the list

6406531890420. ✘ It is False if and only if **stn** is a starting or ending station for at least one train in the list

6406531890421. ✘ It is True if and only if **stn** is a starting station for one train and ending station for some other train in the list

6406531890422. ✘ It is False if and only if **stn** is a starting station for one train and ending station for some other train in the list

Question Number : 197 Question Id : 640653565574 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 does the variable **count** represent at the end of execution of the given pseudocode?

Options :

6406531890423. ✘ It is the number of trains associated with **stn**

6406531890424. ✘ It is the number of trains for which **stn** is a starting station

6406531890425. ✘ It is the number of trains for which **stn** is an ending station

6406531890426. ✓ It is the number of trains for which **stn** is neither a starting nor an ending station

Question Number : 198 Question Id : 640653565575 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

At the end of execution of the code given, what can be said about the values stored by the Boolean variables **flag1** and **flag2**?

Options :

6406531890427.

✓ **flag1** and **flag2** always store the same value

6406531890428. ✘ **flag1** and **flag2** always store opposite values

6406531890429. ✘ **flag1** always stores the value True

6406531890430. ✘ **flag2** always stores the value True

Question Id : 640653565579 Question Type : COMPREHENSION Sub Question Shuffling

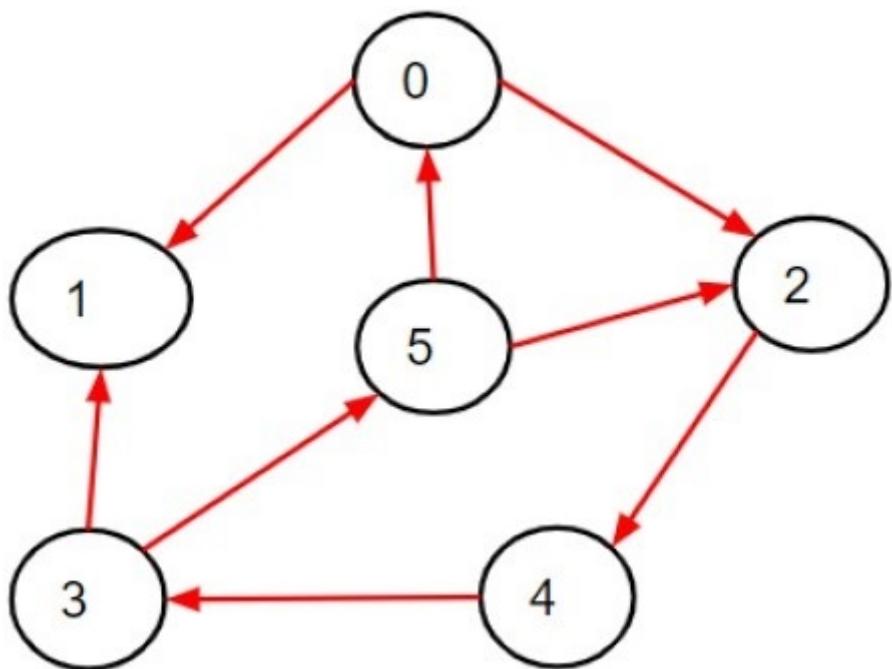
Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (199 to 201)

Question Label : Comprehension

Let **M** be the adjacency matrix of the graph G given below. Consider the procedure given below.



```

1 Procedure nways(M, p, q)
2     count = 0
3     if(M[p][q] == 1){
4         count = 1
5     }
6     foreach i in rows(M){
7         if(M[p][i] == 1 and M[i][q] == 1){
8             count = count + 1
9         }
10    }
11    return(count)
12 End nways

```

Based on above information, answer the given subquestions.

Sub questions

Question Number : 199 Question Id : 640653565580 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 will be the value of **B** at the end of the execution of the pseudocode given below?

```
1 | B = nways(M, 1, 3)
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Number : 200 **Question Id :** 640653565581 **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 will be the value of **B** at the end of execution of pseudocode given below?

```
1 | B = nways(M, 0, 1)
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 201 **Question Id :** 640653565582 **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

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

```
1 | B = nways(M, 2, 5)
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Sub-Section Number : 13

Sub-Section Id : 64065380828

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565576 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (202 to 203)

Question Label : Comprehension

Consider the procedure **evaluate** given below, where **P** and **Q** are the lists of same length. If **L1** = [1, 2, 0, 4, 3] and **L2** = [0, 2, 3, 5, 1] then answer the given subquestions.

```
1 Procedure evaluate(P, Q)
2     if(P == []){
3         return(P)
4     }
5     else{
6         c = first(P) * first(Q)
7         return([c] ++ evaluate(rest(P), rest(Q)))
8     }
9 End evaluate
```

Sub questions

Question Number : 202 Question Id : 640653565577 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 **evaluate(L1, L2)** return?

Options :

6406531890431. ✓ [0, 4, 0, 20, 3]

6406531890432. ✗ [1, 4, 3, 9, 4]

6406531890433. ✗ [1, 10, 0, 8, 0]

6406531890434. ✗ [0, 4, 3, 20, 0]

Question Number : 203 Question Id : 640653565578 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

How many times will the procedure **evaluate** be called, excluding the main call?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

5

Sem1 English1

Section Id : 64065338389

Section Number : 8

Section type : Online

Mandatory or Optional :	Mandatory
Number of Questions :	37
Number of Questions to be attempted :	37
Section Marks :	100
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 :	64065380829
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 204 Question Id : 640653565583 Question Type : MCQ Is Question

Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "FOUNDATION LEVEL : SEMESTER 1: ENGLISH 1 (COMPUTER BASED EXAM)"

ARE YOU SURE YOU HAVE TO WRITE EXAM FOR THIS SUBJECT?

CROSS CHECK YOUR HALL TICKET TO CONFIRM THE SUBJECTS TO BE WRITTEN.

(IF IT IS NOT THE CORRECT SUBJECT, PLS CHECK THE SECTION AT THE TOP FOR THE SUBJECTS REGISTERED BY YOU)

Options :

6406531890439. ✓ YES

6406531890440. ✗ NO

Sub-Section Id : 64065380830

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565584 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (205 to 214)

Question Label : Comprehension

Read the following passage and answer the given subquestions.

In a little district west of Washington Square the streets have run crazy and broken themselves into small strips called "places." These "places" make strange angles and curves. One Street crosses itself a time or two. An artist once discovered a valuable possibility in this street. Suppose a collector with a bill for paints, paper and canvas should, in traversing this route, suddenly meet himself coming back, without a cent having been paid on account!

So, to quaint old Greenwich Village the art people soon came prowling, hunting for north windows and eighteenth-century gables and Dutch attics and low rents. Then they imported some pewter mugs and a chafing dish or two from Sixth Avenue, and became a "colony."

At the top of a squat, three-story brick Sue and Johns had their studio. "Johns" was familiar for Joanna. One was from Maine; the other from California. They had met at the table d'hôte of an Eighth Street "Delmonico's," and found their tastes in art, chicory salad and bishop sleeves so congenial that the joint studio resulted.

That was in May. In November a cold, unseen stranger, whom the doctors called Pneumonia, stalked about the colony, touching one here and there with his icy fingers. Over on the east side this ravager strode boldly, smiting his victims by scores, but his feet trod slowly through the maze of the narrow and moss-grown "places."

Mr. Pneumonia was not what you would call a chivalric old gentleman. A mite of a little woman with blood thinned by California zephyrs was hardly fair game for the red-fisted, short-breathed

old duffer. But Johnsy he smote; and she lay, scarcely moving, on her painted iron bedstead, looking through the small Dutch window-panes at the blank side of the next brick house.

One morning the busy doctor invited Sue into the hallway with a shaggy, grey eyebrow.

"She has one chance in - let us say, ten," he said, as he shook down the mercury in his clinical thermometer. "And that chance is for her to want to live. This way people have of lining-u on the side of the undertaker makes the entire pharmacopoeia look silly. Your little lady has made up her mind that she's not going to get well. Has she anything on her mind?"

"She - she wanted to paint the Bay of Naples some day." said Sue.

"Paint? - bosh! Has she anything on her mind worth thinking twice - a man for instance?"

"A man?" said Sue, with a jew's-harp twang in her voice. "Is a man worth - but, no, doctor; there is nothing of the kind."

Source: The last leaf, O. Henry

Sub questions

Question Number : 205 Question Id : 640653565585 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 is so peculiar about "places"?

Options :

6406531890441.  Streets cross multiple times

6406531890442.  Infamous for robberies

6406531890443.  Incomplete streets

6406531890444.  Over populated

Question Number : 206 Question Id : 640653565586 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 does the word *prowl* mean?

Options :

6406531890445. Move quietly

6406531890446. Spread

6406531890447. Scattered

6406531890448. None of these

Question Number : 207 Question Id : 640653565587 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

Who is the unseen stranger mentioned in the passage?

Options :

6406531890449. Sue

6406531890450. Johnsy

6406531890451. Pneumonia

6406531890452. Joanna

Question Number : 208 Question Id : 640653565588 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 disease mentioned in the passage is figuratively used as _____.

Options :

6406531890453. ❌ Simile

6406531890454. ❌ Metaphor

6406531890455. ✓ Personification

6406531890456. ❌ Onomatopoeia

Question Number : 209 Question Id : 640653565589 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 replacement for the word *ravager*.

Options :

6406531890457. ❌ Spreader

6406531890458. ❌ Disease

6406531890459. ❌ Infection

6406531890460. ✓ Destroyer

Question Number : 210 Question Id : 640653565590 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 replacement for the word *congenial*.

Options :

6406531890461. ✘ Genetic

6406531890462. ✘ Rooted

6406531890463. ✓ Like minded

6406531890464. ✘ Connected

Question Number : 211 Question Id : 640653565591 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 author calls Pneumonia as _____.

Options :

6406531890465. ✘ Chivalric

6406531890466. ✘ Old

6406531890467. ✘ Stupid

6406531890468. ✓ Both Old and Stupid

Question Number : 212 Question Id : 640653565592 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

Smote is the past participle of the verb smite. This statement is

Options :

6406531890469. ✘ TRUE

6406531890470. ✓ FALSE

Question Number : 213 Question Id : 640653565593 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 synonym for the word *twang*.

Options :

6406531890471. ✘ Cry

6406531890472. ✘ Hoot

6406531890473. ✘ Twist

6406531890474. ✓ Resonate

Question Number : 214 Question Id : 640653565594 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

An appropriate synonym for the word *chivalry* is _____.

Options :

6406531890475. ✓ Gallant

6406531890476. ✘ Crooked

6406531890477. ✘ Clean

6406531890478. ✘ Mighty

Question Id : 640653565595 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (215 to 224)

Question Label : Comprehension

Listen to the audio sample and answer the given subquestions.



885_640653_0_1984128_hs1001enfe2s1q11.mp3

Sub questions

Question Number : 215 Question Id : 640653565596 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

Who is a *critic*?

Options :

6406531890479. ❌ A person who cuts up books

6406531890480. ❌ A person who expresses emotions through cries

6406531890481. ❌ A person who is a professional artist

6406531890482. ✓ A person who judges the merits of literary/artistic works

Question Number : 216 Question Id : 640653565597 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

How many syllables are there in the word *creative*?

Options :

6406531890483. ❌ 2

6406531890484. ✓ 3

6406531890485. ❌ 4

6406531890486. ✘ 5

Question Number : 217 Question Id : 640653565598 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

How many syllables are there in the word *liberating*?

Options :

6406531890487. ✘ 1

6406531890488. ✘ 2

6406531890489. ✘ 3

6406531890490. ✓ 4

Question Number : 218 Question Id : 640653565599 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

Which syllable is stressed in the word *history*?

Options :

6406531890491. ✓ First

6406531890492. ✘ Second

6406531890493. ✘ Third

6406531890494. ✘ Fourth

Question Number : 219 Question Id : 640653565600 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

Which syllable is stressed in the word *creativity*?

Options :

6406531890495. ✘ First

6406531890496. ✘ Second

6406531890497. ✓ Third

6406531890498. ✘ Fifth

Question Number : 220 Question Id : 640653565601 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

How many syllables are there in the word *intelligentsia*?

Options :

6406531890499. ✘ 3

6406531890500. ✓ 6

6406531890501. ✘ 9

6406531890502. ✘ 2

Question Number : 221 Question Id : 640653565602 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

As per the audio, who was interviewing Allen Ginsberg?

Options :

6406531890503. ✘ William F Puckle

6406531890504. ✘ Willie F Pickle

6406531890505. ✘ William Willard Buckley

6406531890506. ✓ William F Buckley

Question Number : 222 Question Id : 640653565603 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

Which syllable is stressed in the word *unreliable*?

Options :

6406531890507. ✘ First

6406531890508. ✘ Second

6406531890509. ✓ Third

6406531890510. ✘ Fifth

Question Number : 223 Question Id : 640653565604 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

As per the audio, what was the name of the interview programme?

Options :

6406531890511. ✓ Firing line

6406531890512. ✘ Line of fire

6406531890513. ✘ Fire and line

6406531890514. ✘ Line and fine

Question Number : 224 Question Id : 640653565605 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

Which among the following is the song that Allen Ginsberg sang in the interview?

Options :

6406531890515. ✓ Hare Krishna

6406531890516. ✘ Hari Krishnans

6406531890517. ✘ Harey, Arey

6406531890518. ✘ Hari and Krishna and Vishnu

Sub-Section Number : 3

Sub-Section Id : 64065380831

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565606 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (225 to 229)

Question Label : Comprehension

Listen to the audio sample and answer the given subquestions.



885_640653_0_1984128_hs1001enfe2s1q21.mp3

Sub questions

Question Number : 225 Question Id : 640653565607 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 do you hear at 0:07?

Options :

6406531890519. ❌ Purest

6406531890520. ✓ Poorest

Question Number : 226 Question Id : 640653565608 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 do you hear at 0:44?

Options :

6406531890521. ❌ Altitude

6406531890522. ✓ Attitude

Question Number : 227 Question Id : 640653565609 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

Which word do you hear between 2:13 and 2:20?

Options :

6406531890523. ✓ Cold

6406531890524. ✗ Called

Question Number : 228 Question Id : 640653565610 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

'Enthusiasms' has

Options :

6406531890525. ✗ 2 long vowels

6406531890526. ✓ Only one long vowel

Question Number : 229 Question Id : 640653565611 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

'Victory' has

Options :

6406531890527. ✓ One long vowel

6406531890528. ✗ No long vowels

Question Id : 640653565612 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (230 to 234)

Question Label : Comprehension

Read the following telephone conversation and answer the give subquestions:

A: Hello! I am from SMACK. I have an order to deliver at your place.

B: Hello! (i) _____

A: Hello! Am I audible now?

B: No. I can (ii) _____

A: I am getting a call from another number. (iii) _____

B: Alright. Please (iv) _____

Sub questions

Question Number : 230 Question Id : 640653565613 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

Complete blank (i) with an appropriate response.

Options :

6406531890529. ✖ How may I help you?

6406531890530. ✓ Your voice is breaking.

6406531890531. ✖ I will talk to you later.

Question Number : 231 Question Id : 640653565614 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

Complete blank (ii) with an appropriate response.

Options :

6406531890532. ✓ Hear you on and off

6406531890533. ✖ Pass on the message

6406531890534. ✶ Continue the conversation

Question Number : 232 Question Id : 640653565615 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

Complete blank (iii) with an appropriate response.

Options :

6406531890535. ✶ Thanks for calling.

6406531890536. ✶ How may I help you ?

6406531890537. ✓ Could you hold for a second?

Question Number : 233 Question Id : 640653565616 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

Complete blank (iv) with an appropriate response.

Options :

6406531890538. ✓ Call me back

6406531890539. ✶ Cut off the call

6406531890540. ✶ Leave me a message

Question Number : 234 Question Id : 640653565617 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

Which among the following expressions in telephone conversation refer to 'inaudibility'?

Options :

6406531890541. ❌ Break up

6406531890542. ❌ Cut off

6406531890543. ❌ Hear out

6406531890544. ❌ All Break up , Cut off and Hear out

6406531890545. ✓ Only Break up and Cut off

Sub-Section Number : 4

Sub-Section Id : 64065380832

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653565618 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (235 to 237)

Question Label : Comprehension

Fill in the missing words in the following bio-note and answer the given subquestions :

Jane Doe is Associate Professor of English at University of Middletown. Her research and publications address twentieth century American literature (Conrad Richter, Vladimir Nabokov), professional writing, and pedagogy. Dr. Doe is _____ (1) on a series of publications and conference presentations _____ (2) police report writing, _____ (3) an article "Discursive Performances: The Gates Arrest and the Crowley Report."

Sub questions

Question Number : 235 Question Id : 640653565619 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 the correct expression for blank (1)

Options :

6406531890546. ✓ Currently working

6406531890547. ✗ Including

6406531890548. ✗ Addressing

Question Number : 236 Question Id : 640653565620 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 the correct expression for blank (2)

Options :

6406531890549. ✗ Currently working

6406531890550. ✗ Including

6406531890551. ✓ Addressing

6406531890552. ✗ Researching

Question Number : 237 Question Id : 640653565621 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 the correct expression for blank (3)

Options :

6406531890553. ❖ Currently working

6406531890554. ✓ Including

6406531890555. ❖ Addressing

6406531890556. ❖ Researching

Sub-Section Number :	5
Sub-Section Id :	64065380833
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653565622 Question Type : COMPREHENSION Sub Question Shuffling Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Question Numbers : (238 to 239)

Question Label : Comprehension

Read the following bio-note and then answer the given subquestions.

John Sullivan is a Human Resources specialist with a decade of successful experience in hiring and employee management. John specializes in Human Resource technologies and regularly attends national training sessions to showcase new HR tech trends, such as self-service, wellness apps, and people analytics tools. A strong believer in the power of positive thinking in the workplace, John has won awards and recognition for his efforts in assisting employees with effective mental health techniques. John enjoys a good Netflix binge but can also be found on long bike rides on hilly country roads.

Sub questions

Question Number : 238 Question Id : 640653565623 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 what person is this bio-note written?

Options :

6406531890557. ✘ First person

6406531890558. ✓ Third person

6406531890559. ✘ Second person

6406531890560. ✘ None of these

Question Number : 239 Question Id : 640653565624 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 is the last sentence of the bio trying to convey?

Options :

6406531890561. ✓ John's personality outside of work.

6406531890562. ✘ It has been written to make the bio less professional.

6406531890563. ✘ It is redundant.

6406531890564. ✘ It throws a negative light on John.

Sub-Section Number : 6

Sub-Section Id : 64065380834

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 240 Question Id : 640653565625 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

Retroflex sounds are exclusive in English. This statement is

Options :

6406531890565. ✘ TRUE

6406531890566. ✓ FALSE

Question Number : 241 Question Id : 640653565626 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 /k/ sound ?

Options :

6406531890567. ✘ Cathartic

6406531890568. ✘ Kitten

6406531890569. ✓ Both Cathartic and Kitten

Question Number : 242 Question Id : 640653565627 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

Exhalation has a fundamental role in the production of sounds. This statement is

Options :

6406531890570. ✓ TRUE

6406531890571. ✘ FALSE

Question Number : 243 Question Id : 640653565628 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

Identify the part of speech of the underlined word.

Jenny lacks the patience to wait.

Options :

6406531890572. ✘ Verb

6406531890573. ✘ Adjective

6406531890574. ✓ Noun

6406531890575. ✘ Adverb

Question Number : 244 Question Id : 640653565629 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

Identify the pronoun from the following sentence.

Mary gave him a mobile.

Options :

6406531890576. ✘ Mary

6406531890577. ✓ Him

6406531890578. ✘ Mobile

6406531890579. ✘ Gave

Question Number : 245 Question Id : 640653565630 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

Identify the adverb in the following sentence:

I see her occasionally in the shop.

Options :

6406531890580. ✘ See

6406531890581. ✓ Occasionally

6406531890582. ✘ In

6406531890583. ✘ Shop

Question Number : 246 Question Id : 640653565631 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 one of the following words is **NOT** a preposition?

Options :

6406531890584. ✓ Yet

6406531890585. ✘ At

6406531890586. ✘ On

6406531890587. ✘ In

Question Number : 247 Question Id : 640653565632 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 boys concentrate, they can't learn Kung Fu.

Options :

6406531890588. ✘ Until

6406531890589. ✘ Till

6406531890590. ✓ Unless

6406531890591. ✘ If

Question Number : 248 Question Id : 640653565633 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 with the appropriate option.

She is a very bright girl, she's sure to _____ in her job.

Options :

6406531890592. ✘ Come out

6406531890593. ✘ Get out

6406531890594. ✓ Get ahead

6406531890595. ✘ Get about

Question Number : 249 Question Id : 640653565634 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

"It's been a while that I have been to the department. I'm out of touch with the housekeeping staff." The phrase 'out of touch' means

Options :

6406531890596. ✓ No longer see or communicate with someone

6406531890597. ✗ To speak confidently about something

6406531890598. ✗ To get in contact with someone

6406531890599. ✗ To have a serious discussion

Question Number : 250 Question Id : 640653565635 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

" Does he have a problem with me? He picks on me in the meeting too often. " The meaning of the phrasal verb 'pick on' is _____.

Options :

6406531890600. ✗ Grasp and raise

6406531890601. ✗ Shoot one by one

6406531890602. ✓ Bully or harass someone

6406531890603. ✗ None of these

Question Number : 251 Question Id : 640653565636 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 correct option.

You _____ pay attention to the lecture.

Options :

6406531890604. ✘ Might

6406531890605. ✘ May

6406531890606. ✓ Should

6406531890607. ✘ Can

Question Number : 252 Question Id : 640653565637 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 an appropriate prefix that gives the antonym of 'tolerant'.

Options :

6406531890608. ✘ Mis-

6406531890609. ✘ Un-

6406531890610. ✘ Dis-

6406531890611. ✓ In-

Question Number : 253 Question Id : 640653565638 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 correct option.

We _____ never eaten Japanese food.

Options :

6406531890612. ✘ Are

6406531890613. ✘ Has

6406531890614. ✓ Have

Question Number : 254 Question Id : 640653565639 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 correct option.

John will have _____ all about it by Sunday.

Options :

6406531890615. ✘ Be forgetting

6406531890616. ✓ Forgotten

6406531890617. ✘ Forgetting

Question Number : 255 Question Id : 640653565640 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 correct option.

We _____ about our school when he came in.

Options :

6406531890618. ✓ Were talking

6406531890619. ✘ Were talked

6406531890620. ✘ Talking

6406531890621. ✘ Talked

Question Number : 256 Question Id : 640653565641 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 English language, verbs do not agree with the subject based on gender.

Options :

6406531890622. ✓ TRUE

6406531890623. ✘ FALSE

Question Number : 257 Question Id : 640653565642 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 *constraint* is stressed as _____

Options :

6406531890624. ✓ Con'straint

6406531890625. ✘ 'Constraint

6406531890626. ✘ Cons'traint

6406531890627. ✘ Co'nstraint

Question Number : 258 Question Id : 640653565643 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 plural noun *flakes*, the plural marker sounds as _____

Options :

6406531890628. ✓ [s]

6406531890629. ✗ [z]

6406531890630. ✗ [iz]

Question Number : 259 Question Id : 640653565644 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 of the following has an aspirated stop?

Options :

6406531890631. ✗ Stamina

6406531890632. ✗ Table

6406531890633. ✗ Incline

6406531890634. ✓ Both Table and Incline

Question Number : 260 Question Id : 640653565645 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

Identify the grammatically correct sentence from the options given.

Options :

6406531890635. ✗ I will meet him when he will come.

6406531890636. ✓ I will meet him when he comes.

Question Number : 261 Question Id : 640653565646 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

Identify the grammatically correct sentence from the options given.

Options :

6406531890637. ❌ I did not see him since last Monday.

6406531890638. ✓ I have not seen him since last Monday.

Question Number : 262 Question Id : 640653565647 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

Identify the grammatically correct sentence from the options given.

Options :

6406531890639. ✓ His advice is valuable.

6406531890640. ❌ His advice are valuable.

Question Number : 263 Question Id : 640653565648 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 construction **small office** is a combination of

Options :

6406531890641. ✘ Noun + Adjective

6406531890642. ✘ Noun + Noun

6406531890643. ✓ Adjective + Noun

6406531890644. ✘ Adjective+ Adjective

Question Number : 264 Question Id : 640653565649 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 asked his mother _____ money.

Options :

6406531890645. ✓ For

6406531890646. ✘ Of

6406531890647. ✘ Over

6406531890648. ✘ No preposition

Question Number : 265 Question Id : 640653565650 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 bus stopped _____ the corner of 3rd Avenue.

Options :

6406531890649. ✘ In

6406531890650. ✘ On

6406531890651.

* By

6406531890652. ✓ At

Question Number : 266 Question Id : 640653565651 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

'She's working two jobs, and it's tiring her out. She has_____.'

Options :

6406531890653. ✓ Bitten off more than she can chew

6406531890654. ✗ Bitten the bullet

6406531890655. ✗ Missed the boat

6406531890656. ✗ Made a mountain out of a molehill

Question Number : 267 Question Id : 640653565652 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 snitch on someone is to_____.

Options :

6406531890657. ✗ Rat them out

6406531890658. ✗ Sell them out

6406531890659. ✗ Tell tales about them

6406531890660. ✓ All of these

Question Number : 268 Question Id : 640653565653 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 with the correct verb form.

One of my cousins _____ going on an expedition to the centre of the Earth.

Options :

6406531890661. ❌ Will is

6406531890662. ❌ Were not

6406531890663. ✓ Is

6406531890664. ❌ Are

Question Number : 269 Question Id : 640653565654 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 consonant cluster in the word *trivial* is an instance of _____

Options :

6406531890665. ✓ Initial CC

6406531890666. ❌ Final CC

6406531890667. ❌ Initial CCC

6406531890668. ❌ Final CCC