

Indian Institute of Technology, Madras - Centre for Continuing Education

Notations :

- 1.Options shown in **green** color and with ✓ icon are correct.
- 2.Options shown in **red** color and with ✗ icon are incorrect.

Question Paper Name :

IIT M FOUNDATION ET1 EXAM QPF1 S1 03

Sep

Subject Name :

2023 Sep03: IIT M FOUNDATION ET1 EXAM
QPF1

Creation Date :

2023-08-30 15:56:15

Duration :

90

Total Marks :

1090

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 :	64065314244
Group Maximum Duration :	0
Group Minimum Duration :	90
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	1090
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 :	64065341244
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
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387532
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 1 Question Id : 640653609080 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 :

6406532034491. ✓ YES

6406532034492. ✗ NO

Question Number : 2 Question Id : 640653609081 Question Type : MCQ Is Question

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

Correct Marks : 0

Question Label : Multiple Choice Question

Instructions:

- There are some questions that have functions with discrete-valued domains (such as day, month, year, etc). For simplicity, we treat them as continuous functions.
- For NAT type question, enter only one right answer even if you get multiple answers for that particular question.
- Notations:
 - \mathbb{R} = Set of real numbers
 - \mathbb{Q} = Set of rational numbers
 - \mathbb{Z} = Set of integers
 - \mathbb{N} = Set of natural numbers
- The set of natural numbers includes 0.

Options :

6406532034493. ✓ Useful Data has been mentioned above.

6406532034494. ✗ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 64065387533

Question Shuffling Allowed : Yes

Is Section Default? : null

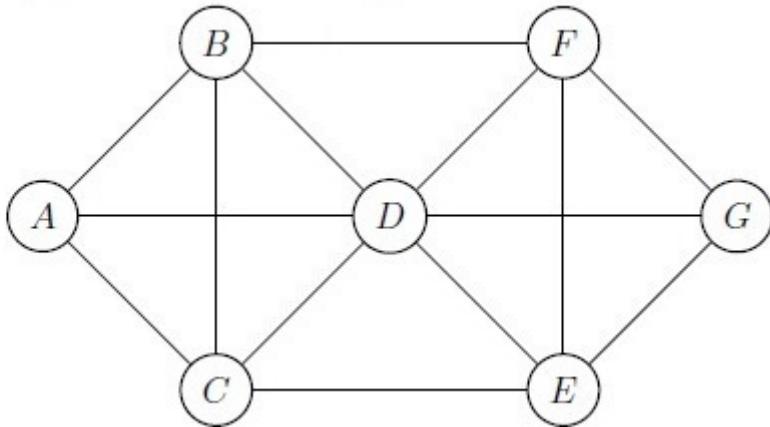
Question Number : 3 Question Id : 640653609082 Question Type : MSQ Is Question

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

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following graph $G = (V, E)$, where V is the set of vertices and E is the set of edges.



Which of the following options is/are true?

Options :

6406532034495. ❌ The minimum vertex cover for G is 4.

6406532034496. ✓ The minimum vertex cover for G is 5.

6406532034497. ✓ The minimum coloring for G is 4.

6406532034498. ❌ The minimum coloring for G is 3.

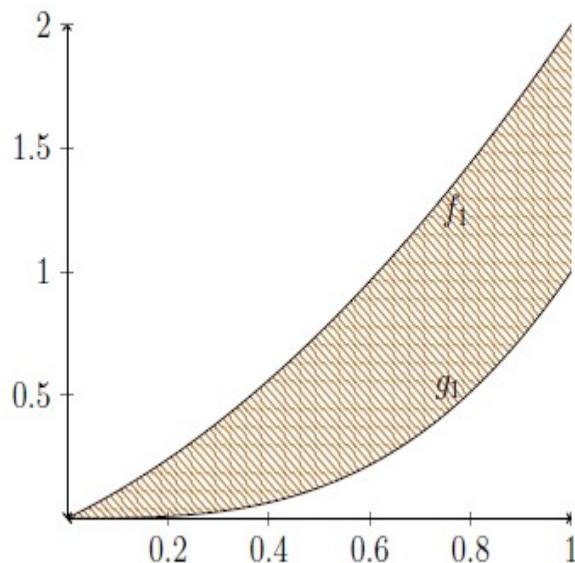
Question Number : 4 Question Id : 640653609089 Question Type : MSQ Is Question

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

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Suppose $f_1(x) = x^2 + x$ denotes the profit of a company throughout 1 year (the beginning of the year is denoted by $x = 0$ and the ending denoted by $x = 1$). The predicted profits of the company for the same year are given by the functions $g_1(x) = x^3$. The curves represented by the functions f_1 and g_1 are shown in the below figure.



Suppose the area of the region bounded by the two curves (the actual curve and the predicted curve) in the interval $[0, 1]$ is defined to be the error in prediction.

Which of the following options is/are true?

Options :

6406532034517. ❌ Area under the curve bounded by f_1 is $\frac{6}{5}$.

6406532034518. ✓ Area under the curve bounded by f_1 is $\frac{5}{6}$.

6406532034519. ✓ The error in prediction is $\frac{7}{12}$.

6406532034520. ❌ The error in prediction is $\frac{1}{4}$.

Sub-Section Number : 3

Sub-Section Id : 64065387534

Question Shuffling Allowed : Yes

Is Section Default? :

null

Question Number : 5 Question Id : 640653609096 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let $f(x)$ be a function defined as $f(x) = \frac{p(x)}{q(x)}$, where $p(x) = 10x^5 + p_4x^4 + \dots + p_0$ and $q(x) = 5x^5 + q_4x^4 + \dots + q_0$. Define a sequence $f_n = f(n)$, $n = 1, 2, 3, \dots$. Which of the following options is/are true?

Options :

6406532034530. ✓ $\lim_{x \rightarrow \infty} f(x) = 2$.

6406532034531. ✗ $\lim_{x \rightarrow -\infty} f(x) = -2$.

6406532034532. ✓ $\lim_{x \rightarrow -\infty} f(x) = \lim_{n \rightarrow \infty} f_n$.

6406532034533. ✓ $\lim_{n \rightarrow \infty} f_n = 2$

Question Number : 6 Question Id : 640653609105 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider a quadratic function $q(x) = 2x^2 + 4x + 2$. Let $l(x)$ be the tangent line to the function $q(x)$ at $x = 2$. Then which of the following options is/are true?

Options :

6406532034547. ✗ The minimum value of the function is 1.

6406532034548. ✓ $q(x)$ has only one distinct real root.

6406532034549. ✓ Equation of the $I(x)$ is $y = 12x - 6$.

6406532034550. ✖ Linear approximation $L_q(x)$ of $q(x)$ at $x = 2$ is $L_q(x) = 12x + 1$

Sub-Section Number : 4

Sub-Section Id : 64065387535

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 7 Question Id : 640653609101 Question Type : MSQ Is Question

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

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following two expressions:

- $(2x + 3)^{f(x)} = 6x^2 + 23x + 21$,
- $(3x + 7)^{(g(x)-4)} = \frac{1}{4x^2 + 12x + 9}$,

where $2x + 3 > 0$ and $2x + 3 \neq 1$, and $3x + 7 \neq 1$.

Which of the following options is/are true?

Options :

6406532034540. ✓ $f(x) = \log_{2x+3}(6x^2 + 23x + 21)$

6406532034541. ✖ $g(x) = \log_{3x+7}(4x^2 + 12x + 9)$

6406532034542. ✓ The equation $f(x) = g(x)$ has only one real root.

6406532034543. ✖ The equation $f(x) = g(x)$ has two real roots.

6406532034544.

* The equation $f(x) = g(x)$ has three real roots.

Sub-Section Number :

5

Sub-Section Id :

64065387536

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 8 Question Id : 640653609086 Question Type : MCQ Is Question

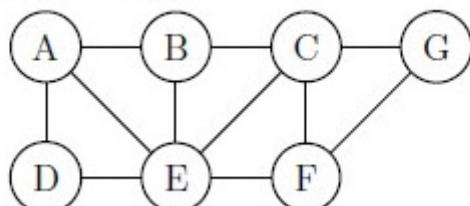
Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction

Time : 0

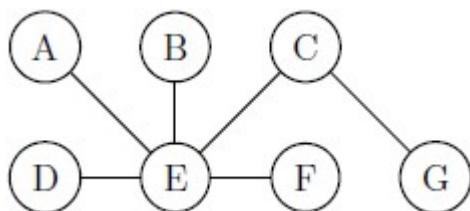
Correct Marks : 3

Question Label : Multiple Choice Question

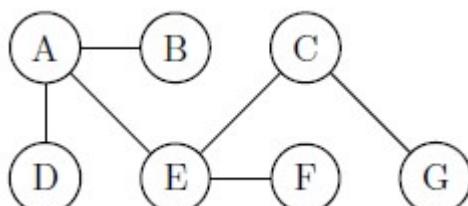
Consider the graph given below. Suppose we perform BFS so that when we visit a vertex, we explore its unvisited neighbors in random order. Which of the following graphs could represent the edges explored by BFS starting at vertex 'A' ?



Options :

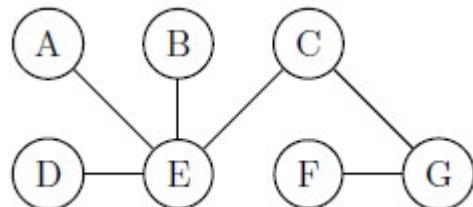
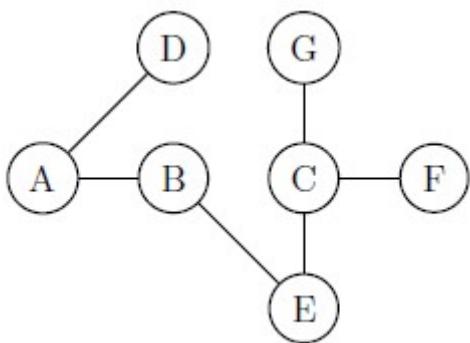


6406532034508. *



6406532034509. ✓

6406532034510. *



6406532034511. ❌

Question Number : 9 Question Id : 640653609087 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 options is true?

Options :

6406532034512. ❌ The minimum cost-spanning tree obtained by Prim's Algorithm is the same as obtained by Kruskal's Algorithm.

6406532034513. ❌ The minimum cost-spanning tree is not a tree.

6406532034514. ✓ The cost of the spanning tree obtained by Prim's Algorithm is the same as that obtained by Kruskal's Algorithm.

6406532034515. ❌ If the weight of each edge in a graph is equal, then the total cost of the graph is equal to the cost of the minimum cost-spanning tree.

Sub-Section Number : 6

Sub-Section Id : 64065387537

Question Shuffling Allowed : Yes

Is Section Default? :

null

Question Number : 10 Question Id : 640653609088 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

It is given that at $x = 1$, the function $f(x) = x^4 - 62x^2 + ax + 9$ attains its maximum value, in the interval $[0, 2]$. 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 :

120

Sub-Section Number : 7

Sub-Section Id : 64065387538

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 11 Question Id : 640653609100 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 two functions $f(x) = \log_2(x)$ and $g(x) = \log_2(x - 4)$. If the graph of the functions $f(x)$ and $g(x)$ intersect x -axis at A and B , respectively, then find the length of the line segment AB .

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 : 64065387539

Question Shuffling Allowed : No

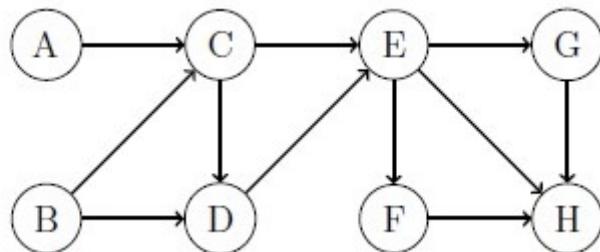
Is Section Default? : null

Question Id : 640653609083 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

Consider the following graph G below:



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 12 Question Id : 640653609084 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following orderings is/are the longest paths of the graph?

Options :

6406532034499.

✓ BCDEGH

6406532034500. ✗ ACBDEF

6406532034501. ✓ ACDEFH

6406532034502. ✓ BCDEFH

6406532034503. ✗ ACEFHG

Question Number : 13 Question Id : 640653609085 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 the adjacency matrix (rows and columns are in the order of A, B, C, D, E, F, G, H) of the given graph G?

Options :

$$\begin{bmatrix} 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

6406532034504. ✓

$$\begin{bmatrix} 0 & 0 & 1 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 1 & 1 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & 1 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 0 & 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

6406532034505. ✗

6406532034506. ✗

0	0	1	0	0	0	0	0
0	0	1	1	0	0	0	0
0	0	0	1	1	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1
0	0	0	0	0	1	1	1

0	0	1	0	0	0	0	0
0	0	1	1	0	0	0	0
1	0	0	1	1	0	0	0
0	0	0	0	1	0	0	0
0	0	0	0	0	1	1	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0

6406532034507. *

Question Id : 640653609097 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 : (14 to 15)

Question Label : Comprehension

Consider two polynomials function $p(x) = 0.1(x - 1)(x - 5)(x - 7)$ and $q(x) = 0.4(x - 5)$ defined in the interval $(-1, 10)$. A line $l(x)$ passes through y -intercept of $p(x)$ and the intersection point of $p(x)$, $q(x)$, and the x - axis.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 14 Question Id : 640653609098 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following is/are correct?

Options :

6406532034534. ✘ The y -intercept of $p(x)$ is 3.5.

6406532034535. ✘ For the given domain $p(x)$ has 1 turning point.

6406532034536. ✓ $p(x) \rightarrow \infty$ as $x \rightarrow \infty$.

6406532034537. ✓ Multiplicity of all roots of $p(x)$ are odd.

Question Number : 15 Question Id : 640653609099 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 l is the slope of the line $l(x)$, then find the value of $10/l$?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

7

Sub-Section Number : 9

Sub-Section Id : 64065387540

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609090 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 : (16 to 20)

Question Label : Comprehension

Consider the function $f : \mathbb{R} \rightarrow \mathbb{R}$ defined by

$$f(x) = \begin{cases} x^2 - |x| & \text{if } x < 0, \\ x^2 + |x| & \text{if } x \geq 0. \end{cases}$$

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 16 Question Id : 640653609091 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

f is not differentiable at $x = 0$.

Options :

6406532034521. ✘ True

6406532034522. ✓ False

Question Number : 17 Question Id : 640653609092 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

f is continuous at $x = 0$.

Options :

6406532034523. ✓ True

6406532034524. ✘ False

Question Number : 18 Question Id : 640653609093 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

f is differentiable at $x = 1$.

Options :

6406532034525. ✓ True

6406532034526. ✘ False

Question Number : 19 Question Id : 640653609094 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

f attains global maximum.

Options :

6406532034527. ✘ True

6406532034528. ✓ False

Question Number : 20 Question Id : 640653609095 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 I is the minimum value of the function f , then find the value of $8I$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

-2

Sub-Section Number : 10

Sub-Section Id : 64065387541

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609102 **Question Type :** COMPREHENSION **Sub Question Shuffling Allowed :** No **Group Comprehension Questions :** No **Question Pattern Type :** NonMatrix **Calculator :** None **Response Time :** N.A **Think Time :** N.A **Minimum Instruction Time :** 0

Question Numbers : (21 to 22)

Question Label : Comprehension

Let $ABCD$ be a parallelogram, where AB, BC, CD and DA are the sides of the parallelogram with vertices $A(1, 3)$, $B(4, 5)$, and $C(6, 8)$. If (x, y) denotes the coordinate of the fourth vertex D .

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 21 **Question Id :** 640653609103 **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 out x .

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Question Number : 22 Question Id : 640653609104 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 out y.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Sem2 Statistics2

Section Id : 64065341245

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

Section Negative Marks : 0

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 :	64065387542
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 23 Question Id : 640653609106 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 :

6406532034551. ✓ YES

6406532034552. ✗ NO

Question Number : 24 Question Id : 640653609107 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

Discrete random variables:

Distribution	PMF ($f_X(k)$)	CDF ($F_X(x)$)	$E[X]$	$\text{Var}(X)$
Uniform(A) $A = \{a, a+1, \dots, b\}$	$\frac{1}{n}, \quad x = k$ $n = b - a + 1$ $k = a, a+1, \dots, b$	$\begin{cases} 0 & x < 0 \\ \frac{k-a+1}{n} & k \leq x < k+1 \\ & k = a, a+1, \dots, b-1, b \\ 1 & x \geq n \end{cases}$	$\frac{a+b}{2}$	$\frac{n^2-1}{12}$
Bernoulli(p)	$\begin{cases} p & x = 1 \\ 1-p & x = 0 \end{cases}$	$\begin{cases} 0 & x < 0 \\ 1-p & 0 \leq x < 1 \\ 1 & x \geq 1 \end{cases}$	p	$p(1-p)$
Binomial(n, p)	${}^n C_k p^k (1-p)^{n-k},$ $k = 0, 1, \dots, n$	$\begin{cases} 0 & x < 0 \\ \sum_{i=0}^k {}^n C_i p^i (1-p)^{n-i} & k \leq x < k+1 \\ & k = 0, 1, \dots, n \\ 1 & x \geq n \end{cases}$	np	$np(1-p)$
Geometric(p)	$(1-p)^{k-1} p,$ $k = 1, \dots, \infty$	$\begin{cases} 0 & x < 0 \\ 1 - (1-p)^k & k \leq x < k+1 \\ & k = 1, \dots, \infty \end{cases}$	$\frac{1}{p}$	$\frac{1-p}{p^2}$
Poisson(λ)	$\frac{e^{-\lambda} \lambda^k}{k!},$ $k = 0, 1, \dots, \infty$	$\begin{cases} 0 & x < 0 \\ e^{-\lambda} \sum_{i=0}^k \frac{\lambda^i}{i!} & k \leq x < k+1 \\ & k = 0, 1, \dots, \infty \end{cases}$	λ	λ

Continuous random variables:

Distribution	PDF ($f_X(k)$)	CDF ($F_X(x)$)	$E[X]$	$\text{Var}(X)$
Uniform $[a, b]$	$\frac{1}{b-a}, a \leq x \leq b$	$\begin{cases} 0 & x \leq a \\ \frac{x-a}{b-a} & a < x < b \\ 1 & x \geq b \end{cases}$	$\frac{a+b}{2}$	$\frac{(b-a)^2}{12}$
Exp(λ)	$\lambda e^{-\lambda x}, x > 0$	$\begin{cases} 0 & x \leq 0 \\ 1 - e^{-\lambda x} & x > 0 \end{cases}$	$\frac{1}{\lambda}$	$\frac{1}{\lambda^2}$
Normal(μ, σ^2)	$\frac{1}{\sigma\sqrt{2\pi}} \exp\left(\frac{-(x-\mu)^2}{2\sigma^2}\right),$ $-\infty < x < \infty$	No closed form	μ	σ^2
Gamma(α, β)	$\frac{\beta^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x}, x > 0$		$\frac{\alpha}{\beta}$	$\frac{\alpha}{\beta^2}$
Beta(α, β)	$\frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1} (1-x)^{\beta-1}$ $0 < x < 1$		$\frac{\alpha}{\alpha+\beta}$	$\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$

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 $X_1, \dots, X_n \sim \text{i.i.d. } X$, 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:

$X_1, \dots, X_n \sim \text{i.i.d. Normal}(M, \sigma^2)$.

Prior $M \sim \text{Normal}(\mu_0, \sigma_0^2)$.

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:

$$F_Z(1) = 0.84134, F_Z(-1) = 0.15866, F_Z(-1.75) = 0.04, F_Z(-0.175) = 0.43,$$

$$F_Z(-1.645) = 0.05, F_Z(-2.32) = 0.01$$

Options :

6406532034553. ✓ Useful Data has been mentioned above.

6406532034554. * This data attachment is just for a reference & not for an evaluation.

Sub-Section Number :	2
Sub-Section Id :	64065387543
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 25 Question Id : 640653609108 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 $X_1, X_2, X_3, X_4 \sim$ i.i.d. Binomial $\left(5, \frac{1}{2}\right)$. Define another random variable $Z = \text{Max}(X_1, X_2, X_3, X_4)$. Find $4P(Z \leq 2)$. 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 :

0.23 to 0.27

Question Number : 26 Question Id : 640653609110 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 discrete random variable taking values $\{0, 1, 2\}$ with respective probabilities $\left\{\frac{p}{3}, (1-p), \frac{2p}{3}\right\}$, where $0 \leq p \leq 1$ is a parameter. Consider the samples $\{2, 1, 1, 0, 0, 2, 1, 2, 0, 2\}$ from X . Using a Uniform[0, 1] prior, find the posterior mean of p . 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 :

0.64 to 0.70

Sub-Section Number : 3

Sub-Section Id : 64065387544

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 27 **Question Id :** 640653609109 **Question Type :** MCQ **Is Question**

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

Correct Marks : 3

Question Label : Multiple Choice Question

Let $X_1, X_2, \dots, X_{100} \sim \text{Uniform}(0, \theta)$. Which of the following is an unbiased estimator for ' θ '?

Options :

6406532034556. ❌
$$\hat{\theta} = \frac{X_1 + X_3 + X_5 + \dots + X_{99}}{100}$$

6406532034557. ❌
$$\hat{\theta} = \frac{X_1 + X_2 + X_3 + \dots + X_{100}}{100}$$

6406532034558. ✓
$$\hat{\theta} = \frac{X_1 + X_2 + X_3 + \dots + X_{100}}{50}$$

6406532034559. ❌
$$\hat{\theta} = X_1 + X_2 + X_3 + \dots + X_{100}$$

Question Number : 28 Question Id : 640653609112 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 situation and match it with suitable test statistic and hypothesis test:

Suppose we observe samples from a normal distribution, where the variance is unknown. We want to check whether the mean is greater than μ . What test statistic and test can be applied for this situation?

Options :

6406532034565. ❌ Test Statistic: $T = \text{Sample mean}$, Hypothesis test: Z -test.

6406532034566. ❌ Test Statistic: $T = \text{Sample mean}$, Hypothesis test: χ^2 -test.

6406532034567. ❌ Test Statistic: $T = \text{Sample variance}$, Hypothesis test: χ^2 -test.

6406532034568. ✓ Test Statistic: $T = \text{Sample mean}$, Hypothesis test: t -test.

Sub-Section Number : 4

Sub-Section Id : 64065387545

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 29 Question Id : 640653609111 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

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

Options :

6406532034561. ✓ Type II error is the probability of accepting the Null hypothesis when it is not true.

6406532034562. ✗ The probability of accepting the null hypothesis when it is false is equal to the power of the test.

6406532034563. ✓ The probability of rejecting the Null hypothesis when it is true is called the level of significance.

6406532034564. ✗ If the P-value of a test is 0.04, then the corresponding test will reject the null hypothesis at the significance level of 0.03.

Sub-Section Number : 5

Sub-Section Id : 64065387546

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609113 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

An employee at a railway ticket counter serves customers in the queue individually. Suppose that the service time X_i for the i^{th} customer has mean $E[X_i] = 2$ and $\text{Var}(X_i) = 1$. Assume that service times for different customers are independent. Let Y be the total time the employee spends to serve 100 customers.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 30 Question Id : 640653609114 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following option(s) is(are) true?

Options :

6406532034569. ✘ $E[Y] = 100$

6406532034570. ✓ $E[Y] = 200$

6406532034571. ✓ $\text{Var}(Y) = 100$

6406532034572. ✘ $\text{Var}(Y) = 50$

Question Number : 31 Question Id : 640653609115 Question Type : SA Calculator : None

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

Correct Marks : 3

Question Label : Short Answer Question

Using the Central Limit Theorem, find an approximate value for $P(190 < Y < 210)$. 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 :

0.66 to 0.70

Question Id : 640653609116 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 34)

Question Label : Comprehension

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

$$f_X(x) = \begin{cases} k - x, & 0 < x < 1, \\ 0, & \text{otherwise.} \end{cases}$$

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 32 Question Id : 640653609117 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 : Equal

Text Areas : PlainText

Possible Answers :

1.5

Question Number : 33 Question Id : 640653609118 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 $F_X(x)$ be the CDF of X .

Calculate the value of $F_X(0.5)$.

Enter the answer correct to three decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0.625

Question Number : 34 Question Id : 640653609119 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 expected value of X.

Options :

6406532034576. ✓ $\frac{5}{12}$

6406532034577. ✗ $\frac{3}{8}$

6406532034578. ✗ $\frac{5}{8}$

6406532034579. ✗ $\frac{1}{2}$

Question Id : 640653609120 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 : (35 to 36)

Question Label : Comprehension

The probability mass function of a discrete random variable X is given by

x	0	1	2
$f_X(x)$	p	p	$1 - 2p$

Table 1

Consider 100 i.i.d. samples of X in which 0, 1, and 2 occur 30, 50, and 20 times, respectively.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 35 Question Id : 640653609121 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 method of moments estimate of p . 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 :

0.34 to 0.40

Question Number : 36 Question Id : 640653609122 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 maximum likelihood estimate of p . 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 :

0.4

Question Id : 640653609123 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 : (37 to 38)

Question Label : Comprehension

The number of tosses required to get the first head on tossing a coin follows the Geometric(θ) distribution. The number of tosses observed to get the first head in 5 different i.i.d. repetitions are 2, 4, 5, 1, 3. Assume prior distribution of θ to be Beta(3, 4).

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 37 Question Id : 640653609124 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 θ .

Options :

6406532034582. ✘ Gamma(8, 14)

6406532034583. ✘ Beta(7, 13)

6406532034584. ✓ Beta(8, 14)

Question Number : 38 Question Id : 640653609125 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 two decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.33 to 0.39

Question Id : 640653609126 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 : (39 to 40)

Question Label : Comprehension

A factory has a machine that dispenses 98.5 ml of liquid in a bottle. An employee believes that the average amount of liquid in a bottle is less than 98.5 ml. He took a sample of 100 random bottles from the factory and found out that the average amount of liquid in a bottle is 98.29 ml with a standard deviation of 1.2 ml.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 39 Question Id : 640653609127 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 :

6406532034587. ✗ $H_0 : \mu = 98.5, H_A : \mu \neq 98.5$

6406532034588. ✗ $H_0 : \mu = 98.5, H_A : \mu > 98.5$

6406532034589. ✓ $H_0 : \mu = 98.5, H_A : \mu < 98.5$

6406532034590. ✗ $H_0 : \mu \neq 98.5, H_A : \mu = 98.5$

Question Number : 40 Question Id : 640653609128 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the set of correct options.

Options :

6406532034591. ✓ Reject H_0 at significance level $\alpha = 0.05$.

6406532034592. ✓ Accept H_0 at significance level $\alpha = 0.01$.

6406532034593. ✗ Accept H_0 at significance level $\alpha = 0.05$.

6406532034594. ✗ Reject H_0 at significance level $\alpha = 0.01$.

Sem2 Maths2

Section Id :	64065341246
Section Number :	3
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	17
Number of Questions to be attempted :	17
Section Marks :	50
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387547
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 41 Question Id : 640653609129 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 :

6406532034595. ✓ YES

6406532034596. ✗ NO

Sub-Section Number : 2

Sub-Section Id : 64065387548

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 42 Question Id : 640653609150 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

A skier is on a mountain with equation $z = 20 - 0.4x^2 - 0.3y^2$ where z denotes the height. The skier is located at the point with xy -coordinates $(1, -1)$, and wants to ski downhill along the steepest possible path. In which direction should the skier begin skiing?

Options :

6406532034657. ✗ $(0.8, 0.6)$

6406532034658. ✓ $(-0.8, 0.6)$

6406532034659. ✗ $(-0.8, -0.6)$

6406532034660. ✗ $(0.8, -0.6)$

Sub-Section Number : 3

Sub-Section Id : 64065387549

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 43 Question Id : 640653609130 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statement(s) is/are true for an $n \times n$ matrix A ?

Options :

Let $\det(A) \neq 0$. Then determinant of A is unaltered by swapping
6406532034597. ✘ any two rows of A .

6406532034598. ✓ Determinant of A is unaltered when a multiple of a row is added to another row.

6406532034599. ✓ For any real number t , $\det(tA) = t^n \det(A)$

6406532034600. ✘ If $D = P^{-1}AP$, then $D = A$.

Question Number : 44 Question Id : 640653609131 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statement(s) is/are true for a system of linear equations $Ax = b$?

Options :

6406532034601. ✓ If x_1 and x_2 are solutions of the system, then for any $\alpha, \beta \in \mathbb{R}$, $\alpha x_1 + \beta x_2$ is also a solution if and only if $b = 0$.

6406532034602. ✘ If x_1 and x_2 are solutions of the linear equation, then $\alpha x_1 + \beta x_2$ is also a solution for any b in the column space of A .

6406532034603. ✘ The system $Ax = 0$ has a unique solution when the number of equations is less than the number of variables.

6406532034604. ✓ If the system $Ax = 0$ has a unique solution, then the columns of A are linearly independent.

Question Number : 45 Question Id : 640653609132 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let V be the vector space of all $n \times n$ matrices with usual addition and scalar multiplication.
Which of the following set(s) form a subspace of V ?

Options :

6406532034605. ✘ $W_1 = \{A \in M_n(\mathbb{R}) : A \text{ is invertible}\}$

6406532034606. ✘ $W_2 = \{A \in M_n(\mathbb{R}) : \det(A) = 1\}$

6406532034607. ✓ $W_3 = \{A \in M_n(\mathbb{R}) : A \text{ is upper triangular}\}$

6406532034608. ✓ $W_4 = \{A \in M_n(\mathbb{R}) : A \text{ is symmetric i.e., } A^T = A\}$

Question Number : 46 Question Id : 640653609143 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let $U = \{(x, y, z) \in \mathbb{R}^3 : x = y = z\}$ and $V = \{(x, y, z) \in \mathbb{R}^3 : x + y + z = 0\}$. Let P_U and P_V be the projections on the spaces U and V respectively. Which of the following statement(s) is/are true?

Options :

6406532034633. ✘ $\{(-1, 1, 0), (-1, -1, 2)\}$ is a basis for the range space of P_U .

6406532034634. ✓ $\{(-1, 1, 0), (-1, -1, 2)\}$ is a basis for the null space of P_U .

6406532034635. ✗ $\{(1, 1, 1)\}$ is a basis for the range space of P_Y .

6406532034636. ✓ $\{(1, 1, 1)\}$ is a basis for the null space of P_Y .

Question Number : 47 Question Id : 640653609145 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let $W = \{(x, y, z) \in \mathbb{R}^3 : 2x - y - z = 3\}$. Then which of the following affine subspace(s) of \mathbb{R}^3 is/are same as the subspace W ?

Options :

6406532034641. ✗ $(6, 0, 0) + U$ where $U = \{(x, y, z) \in \mathbb{R}^3 : 2x = y + z\}$.

6406532034642. ✓ $(0, -3, 0) + U$ where $U = \{(x, y, z) \in \mathbb{R}^3 : y = 2x - z\}$.

6406532034643. ✓ $(0, 0, -3) + U$ where $U = \{(x, y, z) \in \mathbb{R}^3 : z = 2x - y\}$.

6406532034644. ✗ $(0, -3, 0) + U$ where $U = \{(x, y, z) \in \mathbb{R}^3 : 2x = y - z\}$.

Question Number : 48 Question Id : 640653609152 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let $f(x, y) = \begin{cases} \frac{xy}{x^2+y^2} & \text{if } (x, y) \neq (0, 0), \\ 0 & \text{otherwise.} \end{cases}$. Then which of the following statement(s) is/are true?

Options :

6406532034662.

✓ The partial derivatives for f exist everywhere but directional derivatives need not exist at the origin.

6406532034663. ✘ All directional derivatives at the origin exist for the function f .

6406532034664. ✓ At $(0, 0)$, the directional derivative of f exists in the direction of x -axis.

6406532034665. ✘ The partial derivatives for f do not exist at the origin.

Sub-Section Number : 4

Sub-Section Id : 64065387550

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 49 Question Id : 640653609133 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let $A = \begin{pmatrix} 1 & 0 \\ 0 & 0 \end{pmatrix}$, $B = \begin{pmatrix} 0 & 1 \\ 0 & 0 \end{pmatrix}$, $C = \begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$, $D = \begin{pmatrix} 0 & 0 \\ 1 & 0 \end{pmatrix}$, $E = \begin{pmatrix} 0 & 0 \\ 0 & 1 \end{pmatrix}$ and $F = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}$.

Then which of the following statement(s) is/are true?

Options :

6406532034609. ✘ $\text{span}\{B, C, D\} = M_2(\mathbb{R})$.

6406532034610. ✘ $\text{span}\{A, B, D\} = \text{span}\{A, F\}$

6406532034611. ✓ Span $\{A, E, F\} = \{A \in M_2(\mathbb{R}): A \text{ is symmetric i.e., } A^T = A\}$.

6406532034612. ✓ The set of all 2×2 diagonal matrices are spanned by the matrices A and E .

Question Number : 50 Question Id : 640653609140 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statement(s) about similar matrices is/are true?

Options :

Let $T: V \rightarrow W$ be a linear transformation. If A and B are two different matrices corresponding to T , then A and B must be similar.
6406532034627. ✘

If A and B are $n \times n$ matrices such that $\det(A) = \det(B) = 1$, then
6406532034628. ✘ A and B are similar matrices.

6406532034629. ✓ If A is similar to identity matrix, then A is a scalar matrix.

6406532034630. ✓ If A is invertible, then AB and BA are similar.

Question Number : 51 Question Id : 640653609144 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following matrices.

$$A_1 = \begin{pmatrix} 2 & 2 \\ 0 & 2 \end{pmatrix}, A_2 = \begin{pmatrix} -1 & 2 \\ 3 & 1 \end{pmatrix}, A_3 = \begin{pmatrix} 2 & 0 \\ 0 & 2 \end{pmatrix}, \text{ and } A_4 = \begin{pmatrix} -5 & -3 \\ 6 & 5 \end{pmatrix}$$

Choose the correct option(s) from the following:

Options :

6406532034637. ✘ A_1 and A_3 are similar matrices

6406532034638. ✓ A_1 and A_3 are equivalent but not similar matrices

6406532034639. ✓ $A_4 = P^{-1}A_2P$ where $P = \begin{pmatrix} 2 & 1 \\ -1 & 0 \end{pmatrix}$

6406532034640. ❌ A_2 and A_4 are equivalent but not similar matrices

Sub-Section Number : 5

Sub-Section Id : 64065387551

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 52 Question Id : 640653609142 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

Let A be an orthogonal matrix. Then the sum of squares of the elements of every row is :

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Sub-Section Number : 6

Sub-Section Id : 64065387552

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 53 Question Id : 640653609141 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 u, v be vectors in \mathbb{R}^3 such that $u + v$ and $u - v$ are orthogonal. If $u = (1, -2, 2)$, then $\|v\| =$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Question Number : 54 **Question Id :** 640653609151 **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 $f(x, y, z) = x^2y^3 - 3xz$ and $u = (1, 2, 2)$. Find the directional derivative of f in the direction of the vector u at the point $(0, 1, -1)$.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Sub-Section Number : 7

Sub-Section Id : 64065387553

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609146 **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 : (55 to 57)

Question Label : Comprehension

Let L_U denote an affine subspace with the associated subspace U of \mathbb{R}^3 .

	Affine Subspace L_U		Associated subspace U		Dimension of L_U
(i)	$\{(x, y, z) \in \mathbb{R}^3 : x - y + z = -2, x + z = 1\}$	(1)	$\text{span}\{(1, 0, -1), (2, 1, 0)\}$	(a)	2
(ii)	$\{(x, y, z) \in \mathbb{R}^3 : x - 2y + z = 3\}$	(2)	$\text{span}\{(2, -1, 3)\}$	(b)	1
(iii)	$\{(x - 1, y + 1, z) \in \mathbb{R}^3 : x + 2y = 0, 3y + z = 0\}$	(3)	Nullspace of $A = \begin{pmatrix} 1 & -1 & 1 \\ 1 & 0 & 1 \end{pmatrix}$	(c)	1

Table: M2ES2

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 55 Question Id : 640653609147 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 option to match the affine subspace of Row 1 with the associated subspaces and dimension.

Options :

6406532034645. ✓ (i) → (3) → (b)

6406532034646. ✗ (i) → (2) → (a)

6406532034647. ✗ (i) → (2) → (c)

6406532034648. ✗ (i) → (1) → (a)

Question Number : 56 Question Id : 640653609148 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 option to match the affine subspace of Row 2 with the associated subspaces and dimension.

Options :

6406532034649. ❌ (ii) → (3) → (a)

6406532034650. ✓ (ii) → (1) → (a)

6406532034651. ❌ (ii) → (2) → (c)

6406532034652. ❌ (ii) → (1) → (b)

Question Number : 57 Question Id : 640653609149 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 option to match the affine subspace of Row 3 with the associated subspaces and dimension.

Options :

6406532034653. ❌ (iii) → (3) → (a)

6406532034654.

✓ (iii) → (2) → (c)

6406532034655. ✶ (iii) → (2) → (a)

6406532034656. ✶ (iii) → (3) → (b)

Question Id : 640653609153 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 : (58 to 60)

Question Label : Comprehension

Let $f(x, y) = \sin x \cos y$.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 58 Question Id : 640653609154 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 option for the parametric equations of the line tangent to f at the point $\left(\frac{\pi}{2}, \frac{\pi}{2}\right)$ in the direction of x axis:

Options :

6406532034666. ✶ $x(t) = \frac{\pi}{2}, y(t) = \frac{\pi}{2} - t, z(t) = 0$

6406532034667. ✓ $x(t) = \frac{\pi}{2} + t, y(t) = \frac{\pi}{2}, z(t) = 0$

6406532034668. ✶ $x(t) = \frac{\pi}{2} + t, y(t) = \frac{\pi}{2}, z(t) = t$

Question Number : 59 Question Id : 640653609155 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 option for the parametric equations of the line tangent to f at the point $(\frac{\pi}{2}, \frac{\pi}{2})$ in the direction of y axis:

Options :

6406532034669. ✓ $x(t) = \frac{\pi}{2}, y(t) = \frac{\pi}{2} + t, z(t) = -t$

6406532034670. ✶ $x(t) = \frac{\pi}{2} + t, y(t) = \frac{\pi}{2}, z(t) = t$

6406532034671. ✶ $x(t) = \frac{\pi}{2}, y(t) = \frac{\pi}{2} - t, z(t) = 0$

Question Number : 60 Question Id : 640653609156 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 option for the parametric equations of the line tangent to f at the point $(\frac{\pi}{2}, \frac{\pi}{2})$ in the direction of $(-1,1)$:

Options :

6406532034672. ✶ $x(t) = \frac{\pi}{2} + \frac{t}{\sqrt{2}}, y(t) = \frac{\pi}{2} - \frac{t}{\sqrt{2}}, z(t) = -\frac{1}{\sqrt{2}}$

6406532034673. ✶ $x(t) = \frac{\pi}{2} - \frac{t}{\sqrt{2}}, y(t) = \frac{\pi}{2} + \frac{t}{\sqrt{2}}, z(t) = \frac{t}{\sqrt{2}}$

6406532034674. ✓ $x(t) = \frac{\pi}{2} - \frac{t}{\sqrt{2}}, y(t) = \frac{\pi}{2} + \frac{t}{\sqrt{2}}, z(t) = -\frac{t}{\sqrt{2}}$

Sub-Section Number : 8

Sub-Section Id : 64065387554

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609134 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 : (61 to 65)

Question Label : Comprehension

Let $T: \mathbb{R}^3 \rightarrow \mathbb{R}^3$ and $A = \begin{pmatrix} 0 & 1 & -1 \\ 0 & 0 & 0 \\ 1 & 0 & 1 \end{pmatrix}$ be the matrix corresponding

to the linear transformation T with respect to the bases

$\beta = \{(1, 0, 0), (0, 1, 0), (0, 0, 1)\}$ and $\gamma = \{(1, 1, 0), (0, 1, 1), (1, 0, 1)\}$.

Using the above information answer the given subquestions.

Sub questions

Question Number : 61 Question Id : 640653609135 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

Choose the appropriate linear transformation T for the matrix A .

Options :

6406532034613. ❌ $T(x, y, z) = (x + y, y + z, z - x)$

6406532034614. ❌ $T(x, y, z) = (x, y - z, z + x)$

6406532034615. ✓ $T(x, y, z) = (x + y, y - z, z + x)$

6406532034616. ❌ $T(x, y, z) = (x + y, -z, z + x)$

Question Number : 62 Question Id : 640653609136 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let B be the matrix corresponding to the linear transformation T with respect to the basis $\{(1, 0, 0), (0, 1, 0), (0, 0, 1)\}$ for both domain and codomain.

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

Options :

The column space of B is spanned by
6406532034617. ✓ $\{(1, 0, 1), (1, 1, 0)\}$

The nullspace of B is spanned by
6406532034618. ❌ $\{(-1, 0, 0), (0, 1, 1)\}$

6406532034619. ✓ $\text{rank}(B) = 2$ and $\text{nullity}(B) = 1$

6406532034620. ❌ $\text{rank}(B) = 1$ and $\text{nullity}(B) = 2$

Question Number : 63 Question Id : 640653609137 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

Let B be the matrix corresponding to the linear transformation T with respect to the basis $\{(1, 0, 0), (0, 1, 0), (0, 0, 1)\}$ for both domain and codomain.

The trace of B is

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Question Number : 64 Question Id : 640653609138 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

Let B be the matrix corresponding to the linear transformation T with respect to the basis $\{(1, 0, 0), (0, 1, 0), (0, 0, 1)\}$ for both domain and codomain.

The determinant of B is

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Number : 65 Question Id : 640653609139 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statement(s) about T is/are true?

Options :

6406532034623. ✘ T is one-one but not onto

6406532034624. ✓ T is neither one-one nor onto.

Matrices corresponding to T with respect

6406532034625. ✓ to any basis has determinant zero.

There exists a basis β of \mathbb{R}^3 such that the matrix corresponding to T with respect to β

6406532034626. ✘ for both domain and codomain is invertible.

Sem2 Intro to Python

Section Id : 64065341247

Section Number : 4

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
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387555
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 66 Question Id : 640653609157 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 :

6406532034675. ✓ YES

6406532034676. ✘ NO

Sub-Section Number : 2

Sub-Section Id : 64065387556

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 67 Question Id : 640653609158 Question Type : MCQ Is Question

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

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following 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 sum of the digits in $100!$, where, $n!$ is the product of the first n positive integers?

Options :

6406532034677. ✘ `f(g(100))`

6406532034678. ✘ `f(h(100))`

6406532034679. ✓ `g(h(100))`

6406532034680. ✘ `h(g(100))`

6406532034681.

✖ h(f(100))

Question Number : 68 Question Id : 640653609163 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following snippet of code.

```
1 def func(L):
2     if L == []:
3         return 0
4     if L[0] % 2 == 0:
5         return 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 :

6406532034698. ✖ It returns total number of odd elements in the list `L`

6406532034699. ✓ It returns total number of even elements in the list `L`

6406532034700. ✖ It returns sum of the even elements in the list `L`

6406532034701. ✖ It returns sum of the odd elements in the list `L`

Sub-Section Number :

3

Sub-Section Id :

64065387557

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 69 Question Id : 640653609159 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 code snippet that writes student details to a CSV file named "scores.csv":

```
1 def write_to_file(L):
2     f = open('scores.csv', 'w')
3     f.write('Name,Python\n')
4     for i in range(len(L)):
5         name, marks = L[i]
6         line = f'{name},{marks}'
7         if i != len(L) - 1:
8             line = line + '\n'
9         f.write(line)
10    f.close()
11
12 L = [('John', 90), ('Jane', 85), ('Michael', 92), ('Sarah', 88), ('David', 95)]
```

If the `write_to_file(L)` function is called with the list `L` as shown above, what will be the contents of the file "scores.csv"?

Select the correct option that represents the contents of the "scores.csv" file after calling the `write_to_file(L)` function with the provided list `L`.

Options :

- | | |
|---|---------------|
| 1 | Name , Python |
| 2 | John , 90 |
| 3 | Jane , 85 |
| 4 | Michael , 92 |
| 5 | Sarah , 88 |
| 6 | David , 95 |

6406532034682. ✓

- | | |
|---|--------------|
| 1 | John , 90 |
| 2 | Jane , 85 |
| 3 | Michael , 92 |
| 4 | Sarah , 88 |
| 5 | David , 95 |

6406532034683. ✘

```
1 Python,Name  
2 John,90  
3 Jane,85  
4 Michael,92  
5 Sarah,88  
6 David,95
```

6406532034684. *

```
1 Name  
2 Python  
3 John,90  
4 Jane,85  
5 Michael,92  
6 Sarah,88  
7 David,95
```

6406532034685. *

Question Number : 70 Question Id : 640653609160 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 = 'welcome'  
2 string2 = 'hi hello'  
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 :

6406532034686. *

```
1 | ['e', 'e', 'l', 'l', 'o']
```

```
1 | ['e', 'l', 'l', 'o', 'e']
```

6406532034687. ✘

```
1 | ['e', 'l', 'o', 'e']
```

6406532034688. ✓

6406532034689. ✘ None of these

Question Number : 71 Question Id : 640653609162 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. `x` is a real number. When `minmax(x, x)` is called, which return statement in the function is executed?

```
1 | def minmax(a, b):
2 |     if a <= b:
3 |         return a, b
4 |     return b, a
```

Options :

6406532034694. ✓ The return statement in line 3 which is inside the if-block

6406532034695. ✘ The return statement in line 4 which is outside the if-block

6406532034696. ✘ Both the return statements are executed

6406532034697. ✘ Neither return statement is executed

Question Number : 72 Question Id : 640653609164 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 code snippet?

```
1 D = {'Anita': 23, 'Ashwin': 43, 'Ahana': '24', 'Adarsh': 30, 'Archana': 15}
2 try:
3     for key in D:
4         value = D[key]
5         if type(value) == str:
6             raise 'Error'
7         print(f'{key}:{value}')
8 except:
9     print("values cannot be strings")
```

Options :

1	Anita:23
2	Ashwin:43
3	Ahana:24
4	Adarsh:30
5	Archna:15

6406532034702. ✘

1	Anita:23
2	Ashwin:43

6406532034703. ✘

1	values cannot be strings
---	--------------------------

6406532034704. ✘

1	Anita:23
2	Ashwin:43
3	values cannot be strings

6406532034705. ✓

Sub-Section Id : 64065387558

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 73 Question Id : 640653609161 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

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) # Please take a closer look at this line
5     n = n // 10
6 print(total)
```

6406532034690. ✓

```
1 n = int(input())
2 total = 1
3 while(n > 0):
4     total = total + (n % 10) # Please take a closer look at this line
5     n = n // 10
6 print(total)
```

6406532034691. ✘

```
1 n = int(input())
2 total = 1
3 while(n > 0):
4     total = total * (n // 10) # Please take a closer look at this line
5     n = n % 10
6 print(total)
```

6406532034692. ✘

6406532034693. ✘

```
1 n = int(input())
2 total = 1
3 while(n > 0):
4     total = total + (n // 10) # Please take a closer look at this line
5     n = n % 10
6 print(total)
```

Sub-Section Number :

5

Sub-Section Id :

64065387559

Question Shuffling Allowed :

Yes

Is Section Default? :

null

Question Number : 74 Question Id : 640653609165 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Select all code snippets that run without any error.

Options :

```
1 a, b = (1, 2)
2 print(a)
3 print(b)
```

6406532034706. ✓

```
1 a, b, c = (1, 2, 3)
2 print(a)
3 print(b)
4 print(c)
```

6406532034707. ✓

6406532034708. ❌

```
1 a, b = (1, 2, 3)
2 print(a)
3 print(b)
4 print(c)
```

```
1 a, b, c, d = (1, 2, 3)
2 print(a)
3 print(b)
4 print(c)
5 print(d)
```

6406532034709. *

Question Number : 75 Question Id : 640653609166 Question Type : MSQ Is Question

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

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

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 :

6406532034710. ✓ `some_word` is only made up of alphabets

6406532034711. ✗ `some_word` could also contain numbers

6406532034712. ✓ `len(some_word)` is at least 5

6406532034713. ✓ At least one letter in the English alphabet occurs exactly five times in `some_word`

6406532034714. ✗ Exactly one letter in the English alphabet occurs at least five times in `some_word`

Sub-Section Number :	6
Sub-Section Id :	64065387560
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 76 Question Id : 640653609167 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

`scores.csv` is a CSV file that has the following contents:

```
1 SeqNo,Name,Gender,CT,Python,PDSA
2 0,Ram,M,80,90,100
3 1,Sahana,F,90,80,70
4 2,Ritvik,M,80,100,80
5 3,Suchitra,F,100,100,100
6 4,Praful,M,60,70,85
7 5,Aisha,F,85,95,90
8 6,Andrew,M,100,65,75
9 7,Soundarya,F,85,75,65
10 8,Krishnan,M,95,85,90
11 9,Brinda,F,65,95,85
```

What is the output of the following snippet of code?

```
1 def do_something(filename, sub):
2     f = open(filename, 'r')
3     f.readline()
4     val, count = 0, 0
5
6     for line in f:
7         sno, name, gender, ct, python, pdsa = line.strip().split(',')
8         sno, ct, python, pdsa = int(sno), int(ct), int(python), int(pdsa)
9         if sub == 'CT':
10             val = val + ct
11         elif sub == 'Python':
12             val = val + python
13         elif sub == 'PDSA':
14             val = val + pdsa
15         count = count + 1
16     f.close()
17     return val / count
18
19 print(int(do_something('scores.csv', 'Python')))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

85

Sub-Section Number :

7

Sub-Section Id : 64065387561

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 77 Question Id : 640653609168 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 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 `len(S)` 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 :

25

Sub-Section Number : 8

Sub-Section Id : 64065387562

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 78 Question Id : 640653609169 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 log_func(x, y):
2     if x < y:
3         return 0
4     return 1 + log_func(x // y, y)
5
6 log1 = log_func(256, 16)
7 log2 = log_func(16, 2)
8 log3 = log_func(27, 3)
9
10 print(log1 + log2 + log3)
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

9

Sub-Section Number : 9

Sub-Section Id : 64065387563

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609170 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 : (79 to 82)

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 in the subquestions ?

Sub questions

Question Number : 79 Question Id : 640653609171 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 :

```
1 | False False
```

6406532034718. ✘

```
1 | True False
```

6406532034719. ✓

```
1 | False True
```

6406532034720. ✘

```
1 | True True
```

6406532034721. ✘

Question Number : 80 Question Id : 640653609172 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 :

1 | False

6406532034722. ✘

1 | True False

6406532034723. ✘

1 | False True

6406532034724. ✘

1 | True

6406532034725. ✓

Question Number : 81 Question Id : 640653609173 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 :

1 | False False

6406532034726. ✓

1 | True False

6406532034727. ✘

1 | False True

6406532034728. ✘

1 | True True

6406532034729. ✘

Question Number : 82 Question Id : 640653609174 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 :

1 | False

6406532034730. ✓

1 | True False

6406532034731. ✘

1 | False True

6406532034732. ✘

1 | True

6406532034733. ✘

Sub-Section Number :

10

Sub-Section Id :

64065387564

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Id : 640653609175 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 : (83 to 84)

Question Label : Comprehension

Consider the class `Product`:

```
1 class Product:
2     def __init__(self, title, price):
3         self.title = title
4         self.price = price
5
6     def change_price(self, price):
7         self.price = price
8
9     def print_info(self):
10        print(f'Product title: {self.title}')
11        print(f'Product price: {self.price}')
```

`Book` is a sub-class of `Product`:

```
1 class Book(Product):
2     count = 0
3     def __init__(self, title, price, author, genre):
4         super().__init__(title, price)
5         self.author = author
6         self.genre = genre
7         Book.count += 1
8
9     def is_fiction(self):
10        return self.genre == 'Fiction'
11
12    def print_info(self):
13        super().print_info()
14        print('Product is a book')
15        print(f'Author: {self.author}')
16        print(f'Genre: {self.genre}')
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 83 Question Id : 640653609176 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

What is the output of the following snippet of code?

```
1 book = Book('Wings of Fire', 250, 'Dr. Kalam', 'Non Fiction')
2 book.change_price(300)
3 book.print_info()
```

Options :

```
1 Product title: Wings of Fire
2 Product price: 300
```

6406532034734. ✘

```
1 Product title: Wings of Fire
2 Product price: 250
```

6406532034735. ✘

```
1 Product is a book
2 Author: Dr. Kalam
3 Genre: Non Fiction
```

6406532034736. ✘

```
1 Product title: Wings of Fire
2 Product price: 250
3 Product is a book
4 Author: Dr. Kalam
5 Genre: Non Fiction
```

6406532034737. ✘

```
1 Product title: Wings of Fire
2 Product price: 300
3 Product is a book
4 Author: Dr. Kalam
5 Genre: Non Fiction
```

6406532034738. ✓

Question Number : 84 Question Id : 640653609177 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

Assume that `library` represents a list of objects of type `Book`. What does the variable `count` represent at the end of execution of this code?

```
1 # assume that library has n elements, only three of which are shown below
2 Book.count = 0
3 library = [Book('A Brief History of Time', 250, 'Hawking', 'Non Fiction'),
4             Book('Alice in wonderland', 300, 'Caroll', 'Fiction'),
5             Book('Feynman Lectures in Physics', 400, 'Feynman', 'Non Fiction')]
6
7 count = 0
8 for book in library:
9     if book.is_fiction():
10         count = count + 1
```

Options :

6406532034739. ✓ Number of fiction books in the library

6406532034740. ✗ Number of non-fiction books in the library

6406532034741. ✗ Number of books in the library

6406532034742. ✗ None of these

Sem2 English2

Section Id : 64065341248

Section Number : 5

Section type : Online

Mandatory or Optional :	Mandatory
Number of Questions :	27
Number of Questions to be attempted :	27
Section Marks :	100
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387565
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 85 Question Id : 640653609178 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 :

6406532034743. ✓ YES

6406532034744. ✘ NO

Sub-Section Number :	2
Sub-Section Id :	64065387566
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653609179 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 : (86 to 95)

Question Label : Comprehension

Read the following passage and answer the given subquestions

Have you noticed how, when crossing a busy road, you feel a sudden urge to speed up and melt into the crowd? Whether you are in Rio de Janeiro or Bangkok, New Delhi or New York City, your animal instinct tells you that it is safer to _____ as part of a herd than on your own. Fear brings us closer together. The evidence is not just anecdotal. When we are herding, neuroimaging experiments show increased activation in the amygdala area of the brain, where fear and other negative emotions are processed. While you may feel vulnerable and exposed on your own, being part of the herd gives you a distinct sense of protection. You know in your guts that, in the midst of others, the risk of being hit by a car is lower because it is somehow distributed among the group's members. The more of them, the lower the risk. There is safety in numbers. And so much more than mere safety.

Herding also comes with an intoxicating sense of power: as members of a crowd, we feel much stronger and braver than we are in fact. And sometimes we act accordingly. The same person who, on his own, wouldn't 'hurt a fly' will not hesitate to set a government building on fire or rob a liquor store when part of an angry mass. The most mild-mannered of us can make the meanest comments as part of an online mob. A herd can do wonders of psychological transformation in its individual members; in no time, prudence turns into folly, caution into recklessness, decency into savagery. Once caught up in the maelstrom, it is extremely difficult to hold back: you see it as your duty to participate. Any act of lynching, ancient or modern, literal or on social media, displays this feature. 'A murder shared with many others, which is not only safe and permitted, but indeed recommended, is irresistible to the great majority of men,' writes Elias Canetti in *Crowds and Power*

(1960).

The herd can also give its members a disproportionate sense of personal worth. No matter how empty or miserable their individual existence may otherwise be, belonging to a certain group makes them feel accepted and recognised – even respected. There is no hole in one's personal life, no matter how big, that one's intense devotion to one's tribe cannot fill, no trauma that it does not seem to heal. That's why cults and gangs, fringe organisations or sects hold such an extraordinary appeal: to a disoriented soul, they can offer a sense of fulfilment and recognition that neither family nor friends nor profession can supply. A crowd can be therapeutic in the same way in which a highly toxic substance can have curative powers.

Herding, then, engenders a paradoxical form of identity: you are somebody not despite the fact that you've melted into the crowd, but because of it. You may be nobody on your own, and your life an empty shell, yet once you've managed to establish a meaningful connection with the herd, its volcanic, boundless life overflows into yours and more than fulfills it. You will not be able to find yourself in the crowd, but that's the least of your worries: you are now part of something that feels so much grander and nobler than your poor self. Your connection with the life of the herd not only fills an inner vacuum but adds a sense of purpose to your disoriented existence. And the more individuals bring their disorientedness to the party, the livelier it gets. And all the more dangerous.

Sub questions

Question Number : 86 Question Id : 640653609180 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 word to fill the blank in the passage.

Options :

6406532034745. ✓ Venture

6406532034746. ✗ Away

6406532034747. ✗ Behind

6406532034748. ✘ Slow

Question Number : 87 Question Id : 640653609181 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A possible outcome of herding is/are _____.

Options :

6406532034749. ✓ It offers a sense of protection

6406532034750. ✘ It enables an individual to take less risks

6406532034751. ✘ It offers creativity and individualism

6406532034752. ✘ All of these

Question Number : 88 Question Id : 640653609182 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 replacement for the word 'vulnerable'.

Options :

6406532034753. ✘ Effect

6406532034754. ✓ Insecure

6406532034755. ✘ Veneration

6406532034756. ✘ Danger

Question Number : 89 Question Id : 640653609183 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

Being in a herd _____.

Options :

6406532034757. ✘ Increases the outcome of risks

6406532034758. ✓ Decreases the outcome of risks

6406532034759. ✘ Both Increases the outcome of risks and Decreases the outcome of risks

6406532034760. ✘ Does not have any effect over risks

Question Number : 90 Question Id : 640653609184 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

Herding changes an individual's _____.

Options :

6406532034761. ✘ Prudence to glory

6406532034762. ✓ Decency to savagery

6406532034763. ✘ Concepts to recklessness

6406532034764. ✘ All of these

Question Number : 91 Question Id : 640653609185 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 from the following.

Options :

6406532034765. ✓ Crowds offer therapeutic service to disoriented people

6406532034766. ✗ Crowds are essential to make a good citizen

6406532034767. ✗ Both Crowds offer therapeutic service to disoriented people and Crowds are essential to make a good citizen

6406532034768. ✗ None of these

Question Number : 92 Question Id : 640653609186 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

Crowds offer a paradoxical identity to an individual. This statement is _____.

Options :

6406532034769. ✓ TRUE

6406532034770. ✗ FALSE

Question Number : 93 Question Id : 640653609187 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

Gangs and fringe elements flourish because they offer financial benefits to its members.

This statement is

Options :

6406532034771. ✗ TRUE

6406532034772. ✓ FALSE

Question Number : 94 Question Id : 640653609188 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

Being a part of the crowd _____.

Options :

6406532034773. ✘ Fills an individual's inner vacuum

6406532034774. ✘ Offers an individual a purpose

6406532034775. ✘ Enhances one's freedom

6406532034776. ✓ All of these

Question Number : 95 Question Id : 640653609189 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 replacement for the word '*maelstrom*'.

Options :

6406532034777. ✘ Shackles

6406532034778. ✓ Whirlpool

6406532034779. ✘ Struggle

6406532034780. ✘ Complexity

Question Id : 640653609190 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 : (96 to 105)

Question Label : Comprehension

Listen to the audio and answer the given subquestions:



885_640653_0_1984128_hs1002etqe1s1q2.mp3

Sub questions

Question Number : 96 Question Id : 640653609191 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

Winning at least one of each of the following entertainment awards, the Emmy, the Grammy, the Oscars, and the Tony, is called _____.

Options :

6406532034781. ✘ EGAT

6406532034782. ✘ EGAWT

6406532034783. ✓ EGOT

6406532034784. ✘ EGET

Question Number : 97 Question Id : 640653609192 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 number of days in which Wolfgang Schwerk completed the self-transcendence race in New York is _____.

Options :

6406532034785. ✘ 31

6406532034786. ✘ 21

6406532034787. ✘ 47

6406532034788. ✓ 41

Question Number : 98 Question Id : 640653609193 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 Ironman triathlon involves _____, _____, and _____.

Options :

6406532034789. ✓ Swimming, cycling, running

6406532034790. ✘ Swimming, pole vault, long jump

6406532034791. ✘ Running, cycling, volleyball

6406532034792. ✘ Basketball, racewalking, American football

Question Number : 99 Question Id : 640653609194 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

If you completed running a marathon, how many miles would you have run?

Options :

6406532034793. ✘ 36.2

6406532034794. ✓ 26.2

6406532034795. ✘ 26.84

6406532034796. ✘ 16.3

Question Number : 100 Question Id : 640653609195 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

How many miles does an athlete race on a bicycle in the Ironman triathlon?

Options :

6406532034797. ✘ 110

6406532034798. ✘ 122

6406532034799. ✓ 112

6406532034800. ✘ 102

Question Number : 101 Question Id : 640653609196 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 is NOT a possible synonym of the word *transcendence*?

Options :

6406532034801. ✘ Paramountcy

6406532034802. ✘ Sublimity

6406532034803. ✘ Greatness

6406532034804. ✓ Mundane

Question Number : 102 Question Id : 640653609197 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 is a synonym of the word *achievement*?

Options :

6406532034805. ✓ Accomplishment

6406532034806. ✗ Unfulfillment

6406532034807. ✗ Failure

6406532034808. ✗ Loss

Question Number : 103 Question Id : 640653609198 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 total number of human beings who have won at least one of each of Emmy, Grammy, Oscar, and Tony awards in competitive categories is _____.

Options :

6406532034809. ✗ 10

6406532034810. ✓ 11

6406532034811. ✗ 12

6406532034812. ✗ 13

Question Number : 104 Question Id : 640653609199 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 is a possible synonym of the word '*competitive*' ?

Options :

6406532034813. ✓ Ambitious

6406532034814. ✗ Disinterested

6406532034815. ✗ Indifferent

6406532034816. ✗ Unexcited

Question Number : 105 Question Id : 640653609200 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

What is the meaning of the phrasal verb '*wear out*'?

Options :

6406532034817. ✗ To become very angry

6406532034818. ✓ To become useless through hard or extended use

6406532034819. ✗ To find something by chance

6406532034820. ✗ To introduce a topic in conversation

Question Id : 640653609201 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 : (106 to 110)

Question Label : Comprehension

Read the following conversation and answer the given subquestions:

Karan: Right, so shall we discuss what we have to do for this project then?

Lavanya: Yes, it says we have to 'Investigate some aspect of the university facilities'.

Paul: Yeah, we have to design a questionnaire, don't we?

Lavanya: Yes. And we have to write a report and do a presentation.

Paul: How long does it have to be? 1000 words, isn't it?

Lavanya: Let me see. The report has to be between 1000 and 1500 words, and we have to do that on our own, but we do the presentation and the investigation as a group.

Lavanya: So, have you got any ideas about what we can investigate?

Karan: I know one of the other groups is looking at the university library and whether it's adequate for student needs.

Paul: Yes, and one group's doing the sports center.

Karan: I was wondering about investigating transport.

Paul: Transport?

Lavanya: Yes, we could look at whether people think the bus service is regular enough, and we could also look at car parking facilities.

Paul: We could look at the cycle parking facilities too. There's never enough space for all the cycles in the cycle sheds. I'm sure the university could afford to build more, what with all the fees we pay.

Karan: OK, I'm happy with that idea. So, how should we go about the investigation then?

Lavanya: Well, we could make some questionnaires. I can ask the people who travel on buses, and Paul, you can ask cyclists, and Karan, you do a questionnaire for car drivers.

Karan: Shouldn't we write the questions together, rather than individually?

Lavanya: Yes, that's what I meant, we can write the questionnaires together, but each of us can be responsible for carrying out the questionnaires individually. Does that sound okay?

Karan: It sounds good. Okay, well, let's think about these questions then.

Sub questions

Question Number : 106 Question Id : 640653609202 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which **TWO** of the following things will the team do as a group?

Options :

6406532034821. ✘ Write the report

6406532034822. ✓ Do the presentation

6406532034823. ✓ Write the questions

6406532034824. ✗ Carry out the questionnaires

Question Number : 107 Question Id : 640653609203 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 long does the report have to be?

Options :

6406532034825. ✗ 1000 words

6406532034826. ✓ 1000 - 1500 words

6406532034827. ✗ 1500 words

6406532034828. ✗ 1500 - 2000 words

Question Number : 108 Question Id : 640653609204 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 can be inferred about cycling at the university?

Options :

6406532034829. ✗ More students cycle than use the bus

6406532034830. ✓ There is inadequate shelter for cycles at the university

6406532034831. ✗ Bicycles are often stolen from the bike sheds

6406532034832. ✗ Students have to pay to use the bike sheds

Question Number : 109 Question Id : 640653609205 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 students decide to investigate?

Options :

6406532034833. ✘ The university library

6406532034834. ✘ The sports center

6406532034835. ✘ The gymkhana

6406532034836. ✓ The transport facilities

Question Number : 110 Question Id : 640653609206 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 suggests the topic to be investigated?

Options :

6406532034837. ✘ Paul

6406532034838. ✘ Lavanya

6406532034839. ✓ Karan

6406532034840. ✘ Lily

Question Id : 640653609207 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 : (111 to 115)

Question Label : Comprehension

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

With the Indian economy returning back to normal and with consumption levels at an all-time high, the country has seen rapid growth in the demand for frontline workers. (1) _____ than 8 million jobs were created in the frontline industry in FY 2022. With rising retail consumption in a post-pandemic economy, Q2 of FY 2022 saw a (2) _____ rise in demand for frontline workers because of a rapid increase in jobs in the delivery and retail segments. E-commerce contributed the highest to the demand for frontline workers followed by logistics and mobility. Maharashtra, Karnataka, Andhra Pradesh/Telangana and Tamil Nadu have the (3) _____ supply of and demand for frontline workers in India. Sixty (4) _____ of the total frontline workers belong to these states and 65% of the total demand comes from these states. Mumbai has been the (5) _____ contributor and demand for frontline workers at 24.7% and 20.9%, respectively.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 111 Question Id : 640653609208 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 :

6406532034841. ❌ Several

6406532034842. ❌ Many

6406532034843. ✓ More

6406532034844. ❌ Mostly

Question Number : 112 Question Id : 640653609209 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 :

6406532034845. ❌ Huger

6406532034846. ✓ Huge

6406532034847. ❌ Many

6406532034848. ❌ Mostly

Question Number : 113 Question Id : 640653609210 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 :

6406532034849. ❌ High

6406532034850. ❌ Higher

6406532034851. ✓ Highest

6406532034852. ❌ Large

Question Number : 114 Question Id : 640653609211 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 :

6406532034853. ✓ Per cent

6406532034854. ✗ Meters

6406532034855. ✗ Liters

6406532034856. ✗ Many

Question Number : 115 Question Id : 640653609212 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 :

6406532034857. ✗ Higher

6406532034858. ✓ Highest

6406532034859. ✗ A lot

6406532034860. ✗ Several

Question Id : 640653609213 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 : (116 to 120)

Question Label : Comprehension

Identify the most appropriate sentence to use in the following social context, from the given options.

Context: Between police constables of the same level in the police station:

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 116 Question Id : 640653609214 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

Reminding someone of an impending deadline.

Options :

6406532034861. ❌ Can't you just file the report already?

6406532034862. ✓ I was just checking whether you finished the report or not. Let me know if you need any help.

6406532034863. ❌ Apologies for asking. Are you on course to finish the report? Thank you.

6406532034864. ❌ The deadline for this report is Sunday and aren't you being too lazy about it? Anyways, just reminding you.

Question Number : 117 Question Id : 640653609215 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

Inviting a colleague for your birthday party.

Options :

6406532034865. ❌ Hey, I got a party coming up. Mind dropping by?

6406532034866. ❌ Excuse me. Could you please consider this request I am currently making to be a guest at the birthday party that I am organising for myself?

6406532034867. ✓ Hi, good morning. So, tomorrow is my birthday, and I have a small party at my

home tonight. Will you be free to drop by? It'd be fun, and I really look forward to having you there.

6406532034868. ✶ Will you come for a party?

Question Number : 118 Question Id : 640653609216 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

Refusing a sweet that your colleague is offering you on a special occasion.

Options :

6406532034869. ✶ I don't eat no sweet.

6406532034870. ✶ Sweets are for lazy sloths, and I sure ain't one.

6406532034871. ✶ Sweets make you prone to obesity, which in turn increases chances of you getting cancer. And we all know how deadly cancer can be. So no, I don't want the sweet. Sorry.

6406532034872. ✓ Thank you for offering me this, but I am really sorry as I have to decline this. It is just that I have the opposite of a sweet tooth, and ghee-based sweets tend to give me allergies. Hope you'll understand. Thanks a lot again, and best wishes.

Question Number : 119 Question Id : 640653609217 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

Requesting a more experienced constable for help.

Options :

6406532034873. ✓ Sir, would you please have a look at this FIR and tell me whether I have covered all the aspects and events of the case?

6406532034874. ✶ Hey bro, look what I have done. It is the FIR. Get yourself here and tell me what

is wrong with this. Fix this man.

6406532034875. ✶ Tell me, have I covered everything? Is anything missing?

6406532034876. ✶ Respected Sir, I have completed the FIR and, being an incompetent officer, I am unable to check myself whether I have included all the events and aspects of this case. Please, your majesty, be so kind as to go over this and order me how to improve it.

Question Number : 120 Question Id : 640653609218 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

Reminding them of a pending report submission.

Options :

6406532034877. ✶ Why haven't you finished it yet?

6406532034878. ✶ Why is it taking so long?

6406532034879. ✓ I wanted to give you a gentle reminder to finish it. Let me know if you need any support.

6406532034880. ✶ I am sorry to ask, but could you please, please finish it?

Question Id : 640653609219 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 : (121 to 125)

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.

Best regards,

John

Sub questions

Question Number : 121 Question Id : 640653609220 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 :

6406532034881. ✎ Job interview

6406532034882. ✎ Application for job

6406532034883. ✓ Letter of gratitude (for job interview)

6406532034884. ✘ Request for interview results

Question Number : 122 Question Id : 640653609221 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 :

6406532034885. ✘ Hi Michael,

6406532034886. ✘ Dear Davis,

6406532034887. ✓ Dear Michael,

Question Number : 123 Question Id : 640653609222 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 :

6406532034888. ✘ Dr. Michael,

6406532034889. ✘ Dear Mr. Davis,

6406532034890. ✓ Dear Dr. Davis,

Question Number : 124 Question Id : 640653609223 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 :

6406532034891. ✘ i, ii, and iii only

6406532034892. ✓ ii and iv only

6406532034893. ✘ iii and iv only

6406532034894. ✘ only iv

Question Number : 125 Question Id : 640653609224 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 :

6406532034895. ✘ Colon

6406532034896. ✘ Comma

6406532034897. ✘ Period

6406532034898. ✓ Both Colon and Comma

Sub-Section Number : 3

Sub-Section Id : 64065387567

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 126 Question Id : 640653609225 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 discourse markers from the following sentence.

First of all, listen to me. I mean, you need to hear this before you proceed.

Options :

6406532034899. ✘ First of all

6406532034900. ✘ I mean

6406532034901. ✘ You need

6406532034902. ✓ Both First of all and I mean

Question Number : 127 Question Id : 640653609226 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

'Old Marley was as dead as a doornail' is an example of simile. This statement is _____.

Options :

6406532034903. ✓ TRUE

6406532034904. ✘ FALSE

Question Number : 128 Question Id : 640653609227 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Identify the (verb) mood in the following sentence.

This is my friend.

Options :

6406532034905. ✘ Subjunctive

6406532034906. ✓ Indicative

6406532034907. ✘ Interrogative

6406532034908. ✘ Imperative

Question Number : 129 Question Id : 640653609228 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

Fill in the blank with a verb that is in the past perfect tense.

Kuttappa _____ to his siblings as a child.

Options :

6406532034909. ✘ listened

6406532034910. ✘ had listen

6406532034911. ✘ had been listening

6406532034912. ✓ had listened

Question Number : 130 Question Id : 640653609229 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

'He would make it *to the sea*.'

The phrase in italics is an adverbial phrase of place. This statement is:

Options :

6406532034913. ✓ TRUE

6406532034914. ✗ FALSE

Question Number : 131 Question Id : 640653609230 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 day after tomorrow is a holiday.' This is an example of a _____.

Options :

6406532034915. ✗ Compound sentence

6406532034916. ✗ Complex sentence

6406532034917. ✓ Simple sentence

6406532034918. ✗ Complicated sentence

Question Number : 132 Question Id : 640653609231 Question Type : MCQ Is Question

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

Correct Marks : 2

Question Label : Multiple Choice Question

Identify the adjunct in the following sentence:

In the afternoons, we have a tea break.

Options :

6406532034919. ✗ Tea break

6406532034920. ✗ We have a tea break

6406532034921.

✓ In the afternoons

6406532034922. ✘ No adjunct

Question Number : 133 Question Id : 640653609232 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 NOT a subordinating conjunction?

Options :

6406532034923. ✘ Before

6406532034924. ✘ Because

6406532034925. ✘ Unless

6406532034926. ✓ And

Question Number : 134 Question Id : 640653609233 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

For the following sentence, choose whether the type of sentence is simple, compound or complex

He is funny, yet he is very polite.

Options :

6406532034927. ✘ Simple

6406532034928. ✓ Compound

6406532034929. ✘ Complex

Question Number : 135 Question Id : 640653609234 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 articles that I bought yesterday are already damaged.' The relative pronoun here is _____.

Options :

6406532034930. ✓ That

6406532034931. ✗ I

6406532034932. ✗ Are

6406532034933. ✗ No relative pronoun

Question Number : 136 Question Id : 640653609235 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

Fill in the blank with the most appropriate modal verb.

The syllabus is very vast, so the exam _____ be very tough.

Options :

6406532034934. ✓ Must

6406532034935. ✗ Must not

6406532034936. ✗ Should not

6406532034937. ✗ Shall

Question Number : 137 Question Id : 640653609236 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 play _____ be starting late.

Options :

6406532034938. ✘ Can

6406532034939. ✓ Could

6406532034940. ✘ Both Can and Could

Question Number : 138 Question Id : 640653609237 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 correct question tag for the sentence provided.

It is well done, _____?

Options :

6406532034941. ✓ Isn't it?

6406532034942. ✘ Won't it?

6406532034943. ✘ Hasn't it?

6406532034944. ✘ Doesn't it?

Question Number : 139 Question Id : 640653609238 Question Type : MCQ Is Question

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

Correct Marks : 2

Question Label : Multiple Choice Question

Identify the object of the verb 'say' in the given sentence.

It was impossible to say yet whether the lion would attack or not.

Options :

6406532034945. ❌ Only yet

6406532034946. ✓ The clause *whether the lion would attack or not*

6406532034947. ❌ Only *whether*

6406532034948. ❌ Both *yet* and *whether*

Question Number : 140 Question Id : 640653609239 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 grammatically correct sentence from the given options.

Options :

6406532034949. ❌ My mother hastily reminded that she would be late to us

6406532034950. ❌ My mother reminded hastily that she would be late

6406532034951. ✓ My mother reminded us hastily that she would be late

6406532034952. ❌ My mother reminded hastily that she would be late to us

Question Number : 141 Question Id : 640653609240 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 I were you, I would continue working until it is finished. This is a _____ sentence.

Options :

6406532034953. ❌ Zero conditional

6406532034954. ❌ First conditional

6406532034955. ✓ Second conditional

6406532034956. ❌ Mixed conditional

Question Number : 142 Question Id : 640653609241 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

We have been searching for his address for a while. Indirect speech of the given sentence is

_____.

Options :

6406532034957. ❌ We had been searching for his address for a while

6406532034958. ✓ They had been searching for his address for a while

6406532034959. ❌ We were been searching for his address for a while

6406532034960. ❌ They were been searching for his address for a while

Question Number : 143 Question Id : 640653609242 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

He could have played for his home country, _____ he chose to play for his neighbours.

Options :

6406532034961. ❌ Because

6406532034962. ✓ But

6406532034963. ✗ As a result

6406532034964. ✗ Or

Question Number : 144 Question Id : 640653609243 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

'He has been unhappy since his cat disappeared.' This sentence has _____ prefixes.

Options :

6406532034965. ✗ 1

6406532034966. ✓ 2

6406532034967. ✗ 3

6406532034968. ✗ 4

Question Number : 145 Question Id : 640653609244 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

'We planned to rendezvous and then sneak out to the beach.' Here, *rendezvous* means

Options :

6406532034969. ✗ Run away

6406532034970. ✓ Meet up at an agreed time

6406532034971. ✗ Feel melancholy

6406532034972.

* Do things in a specific way

Sem1 Statistics1

Section Id :	64065341249
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	10
Number of Questions to be attempted :	10
Section Marks :	40
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387568
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 146 Question Id : 640653609245 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 :

6406532034973. ✓ YES

6406532034974. ✘ NO

Sub-Section Number : 2

Sub-Section Id : 64065387569

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609246 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 : (147 to 149)

Question Label : Comprehension

A six sided die is marked '1' on one face, '2' on two of its faces, and '3' on the remaining three faces. The die is thrown twice. Let X denotes the total score in two throws. Based on the given information, answer the subquestions

Sub questions

Question Number : 147 Question Id : 640653609247 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 probability mass function of X ?

Options :

x	1	2	3
$P(X = x)$	1/3	1/3	1/3

6406532034975. *

x	1	2	3
$P(X = x)$	1/6	2/6	3/6

6406532034976. *

x	2	3	4	5	6
$P(X = x)$	1/9	2/9	3/9	2/9	1/9

6406532034977. *

x	2	3	4	5	6
$P(X = x)$	1/36	1/9	5/18	1/3	1/4

6406532034978. ✓

Question Number : 148 Question Id : 640653609248 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 value of $P(X > 2.5 | X < 5)$.

(Enter the answer correct to 2 decimal places).

Response Type : Numeric**Evaluation Required For SA : Yes****Show Word Count : Yes****Answers Type : Range****Text Areas : PlainText**

Possible Answers :

0.90 to 0.96

Question Number : 149 Question Id : 640653609249 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 $E(X)$. (Enter the answer correct to 2 decimal places).

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

4.62 to 4.72

Sub-Section Number : 3

Sub-Section Id : 64065387570

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 150 Question Id : 640653609250 Question Type : SA Calculator : None

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

Correct Marks : 4

Question Label : Short Answer Question

A pharmaceutical company is testing a new drug. The probability that a patient experiencing a side effect from this drug is 0.10. If the drug is given to 5 patients, what is the probability that more than 1 patient will experience the side effect? (Enter the answer correct to 2 decimal places.)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.05 to 0.11

Sub-Section Number : 4

Sub-Section Id : 64065387571

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609251 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 : (151 to 152)

Question Label : Comprehension

An internet service provider advertises a download speed between 50 Mbps and 100 Mbps for its basic plan, which follows a uniform distribution. Based on the given information, answer the subquestions

Sub questions

Question Number : 151 Question Id : 640653609252 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 probability that a user on this plan will experience a download speed of exactly 60 Mbps?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0

Question Number : 152 Question Id : 640653609253 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 probability that a user on this plan experiences a download speed of at least 80 Mbps given that user has experienced download speed of at least 70 Mbps?

Options :

6406532034983. ✘ $\frac{2}{5}$

6406532034984. ✓ $\frac{2}{3}$

6406532034985. ✘ $\frac{7}{8}$

6406532034986. ✘ Cannot be determined.

Sub-Section Number : 5

Sub-Section Id : 64065387572

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 153 Question Id : 640653609254 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 time it takes for a computer system to reboot after a crash follows an exponential distribution with a mean time of 0.5 hours. What is the probability that the system will be back online within 1 hour of the crash?

Options :

6406532034987. ✓ $1 - e^{-2}$

6406532034988. ✗ $1 - e^{-0.5}$

6406532034989. ✗ e^{-2}

6406532034990. ✗ $e^{-0.5}$

Sub-Section Number : 6

Sub-Section Id : 64065387573

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 154 **Question Id :** 640653609255 **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 network failures in a company follows a Poisson distribution, with an average rate of 1 network failure per week. What is the probability that there will be no network failure in the next 14 days? (Note: 1 week = 7 days) (Enter the answer correct to 2 decimal places.)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.11 to 0.17

Sub-Section Number : 7

Sub-Section Id : 64065387574

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 155 Question Id : 640653609256 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 the mean and median of the observations x_1, x_2, x_3, x_4, x_5 are 3 and 2 respectively. If the mean and median of the observations $ax_1+b, ax_2+b, ax_3+b, ax_4+b, ax_5+b$ are 9 and 7 respectively, then find the sum of a and b .

Options :

6406532034992. ✘ 3

6406532034993. ✘ 2

6406532034994. ✓ 5

6406532034995. ✘ 6

Sub-Section Number : 8

Sub-Section Id : 64065387575

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 156 Question Id : 640653609257 Question Type : MSQ Is Question

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

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following option(s) is(are) correct?

Options :

6406532034996. ❌ Brand of smartphones (Realme, Samsung, Vivo etc.) have ordinal scale of measurement.

6406532034997. ✓ Bar chart must preserve the order for ordinal data.

6406532034998. ✓ Relative frequency is useful to compare two different datasets.

6406532034999. ❌ Time (in hours) taken by a student to complete a project is a discrete variable.

Sub-Section Number : 9

Sub-Section Id : 64065387576

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 157 **Question Id :** 640653609258 **Question Type :** SA **Calculator :** None

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

Correct Marks : 4

Question Label : Short Answer Question

A box contains 2 red pens, 3 black pens and 4 blue pens. In how many ways can 3 pens be drawn from the box, if at least one black pen is to be included in the box?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

64

Sub-Section Number : 10

Sub-Section Id : 64065387577

Question Shuffling Allowed : Yes

Is Section Default? :

null

Question Number : 158 Question Id : 640653609259 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 CDF of a discrete random variable X is given as

$$F_X(x) = \begin{cases} 0, & x < 0 \\ 1/8, & 0 \leq x < 1 \\ 1/2, & 1 \leq x < 2 \\ 7/8, & 2 \leq x < 3 \\ 1, & x \geq 3. \end{cases}$$

What is the value of $E(X^2)$?

Options :

6406532035001. ✘ 1.5

6406532035002. ✓ 3

6406532035003. ✘ 0.875

6406532035004. ✘ Cannot be determined

Sem1 CT

Section Id :	64065341250
Section Number :	7
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	19
Number of Questions to be attempted :	19
Section Marks :	100

Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387578
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 159 Question Id : 640653609260 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 :

6406532035005. ✓ YES

6406532035006. ✗ NO

Sub-Section Number :	2
Sub-Section Id :	64065387579
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 160 Question Id : 640653609261 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

Scores

SeqNo	Name	Gender	DateOfBirth	CityTown	Mathematics	Physics	Chemistry	Total
0	Bhuvanesh	M	7 Nov	Erode	68	64	78	210
					■ ■ ■			

29 Naveen M 13 Oct Vellore 72 66 81 219

Words

SeqNo	Word	PartOfSpeech	LetterCount
0	It	Pronoun	2
			■ ■ ■

64 cane. Noun 4

Library

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

29 Malgudi Days Narayan Fiction English 150 Indian Thought 1943

Olympics

Seq. No.	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 :

6406532035007. ✓ Useful Data has been mentioned above.

6406532035008. ❌ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 3

Sub-Section Id : 64065387580

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 161 Question Id : 640653609262 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

Let X and Y be two rows in the “Scores” table. We call X and Y partially matching if student X and Y are either from the same city or have the same total marks but not both. Let $\text{partialMatch}(X, Y)$ be a procedure to find whether X and Y are matching. Choose the correct implementation of the procedure partialMatch .

Options :

6406532035009. ❌

```
Procedure partialMatch(X, Y)
    A = False, B = False
    if (X.CityTown == Y.CityTown) {
        A = True
    }
    if (X.Total == Y.Total) {
        B = True
    }
    if (A and B) {
        return (True)
    }
    return (False)
End partialMatch
```

```
Procedure partialMatch(X, Y)
    A = False, B = False
    if (X.CityTown == Y.CityTown) {
        A = True
    }
    if (X.Total == Y.Total) {
        B = True
    }
    if (A or B) {
        return (True)
    }
    return (False)
```

6406532035010. ✖ End partialMatch

```
Procedure partialMatch(X, Y)
    A = False, B = False
    if (X.CityTown == Y.CityTown) {
        A = True
    }
    if (X.Total == Y.Total) {
        B = True
    }
    if ((A and B) == False or (A or B) == True) {
        return (True)
    }
    return (False)
```

6406532035011. ✖ End partialMatch

6406532035012. ✓

```

Procedure partialMatch(X, Y)
    A = False, B = False
    if (X.CityTown == Y.CityTown) {
        A = True
    }
    if (X.Total == Y.Total) {
        B = True
    }
    if ((A and B) == False and (A or B) == True) {
        return (True)
    }
    return (False)
End partialMatch

```

Sub-Section Number :

4

Sub-Section Id :

64065387581

Question Shuffling Allowed :

No

Is Section Default? :

null

Question Id : 640653609263 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 : (162 to 163)

Question Label : Comprehension

The following pseudocode is executed using the “Scores” dataset. Two students form a study pair if the difference of their Chemistry marks is at most 10.

```

count1 = studyPair(Table 1)
while (Table 1 has more rows) {
    Read the first row X in Table 1
    if (X.CityTown == "Madurai") {
        Move X to Table MDR
    }
    if (X.CityTown == "Trichy") {
        Move X to Table TRC
    }
    if (X.CityTown == "Salem") {
        Move X to Table SLM
    }
}
count2 = studyPair(Table MDR) + studyPair(Table TRC) + studyPair(Table SLM)

```

```

Procedure studyPair(Table 1)
    Table T1 = Table 1
    A = 0
    while (Table T1 has more rows) {
        Read the first row X in Table T1
        Move X to Table T2
        while (Table T1 has more rows) {
            Read the first row Y in Table T1
            Move Y to Table T3
            if (-10 ≤ Y.Chemistry - X.Chemistry ≤ 10) {
                A = A + 1
            }
        }
        Move all rows from Table T3 to Table T1
    }
    return(A)
End studyPair

```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 162 Question Id : 640653609264 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 **count1** represent at the end of execution?

Options :

6406532035013. ✓ Number of study pairs

6406532035014. ✘ Number of pairs of study pairs

6406532035015. ✘ Number of students who formed study pairs

6406532035016. ✘ Number of study pairs from a same city

Question Number : 163 Question Id : 640653609265 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 **count2** represent at the end of execution?

Options :

6406532035017. ✘ Number of study pairs where students in each pair are from the same city

6406532035018. ✘ Number of study pairs where students in each pair are from different cities among Madurai, Trichy and Salem

6406532035019. ✓ Number of study pairs where students in each pair are from the same city among Madurai, Trichy and Salem

6406532035020. ✘ Number of study pairs where students in each pair are from Madurai

Sub-Section Number : 5

Sub-Section Id : 64065387582

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 164 Question Id : 640653609266 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 word is said to be *perfect* if no letter is repeated. Let *isPerfect* be a procedure that takes a row *X* in the “Words” table as input and decides whether the word is *perfect*. Choose the correct implementation of the procedure *isPerfect*.

Options :

```
Procedure isPerfect(X)
    C = []
    i = 1
    flag = True
    while (i ≤ X.LetterCount) {
        A = ith letter in X.Word
        if (member(C, A)) {
            flag = False
        }
        else{
            C = C ++ [A]
            flag = True
        }
        i = i + 1
    }
    return (flag)
```

6406532035021. ✘ End isPerfect

```
Procedure isPerfect(X)
    C = []
    i = 1
    flag = True
    while (i ≤ X.LetterCount) {
        A = ith letter in X.Word
        if (member(C, A)) {
            flag = False
            exitloop
        }
        C = C ++ [A]
        i = i + 1
    }
    return (flag)
```

6406532035022. ✓ End isPerfect

6406532035023. ✘

```

Procedure isPerfect(X)
    C = []
    i = 1
    flag = True
    while (i ≤ X.LetterCount) {
        A = ith letter in X.Word
        if (member(C, A)) {
            C = C ++ [A]
        }
        else{
            flag = False
            exitloop
        }
        i = i + 1
    }
    return (flag)
End isPerfect

```

```

Procedure isPerfect(X)
    C = []
    i = 1
    flag = True
    while (i ≤ X.LetterCount) {
        A = ith letter in X.Word
        if (member(C, A)) {
            exitloop
        }
        C = C ++ [A]
        i = i + 1
    }
    return (flag)
End isPerfect

```

6406532035024. *

Sub-Section Number :	6
Sub-Section Id :	64065387583
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653609267 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 : (165 to 166)

Question Label : Comprehension

The following pseudocode is executed using the “Words” dataset. Study the given pseudocode and answer the given subquestions.

```
A = 0, flag = True
inList = [ ], outList = []
while (Table 1 has more rows) {
    Read the first row X in Table 1
    if (flag) {
        inList = [X.Word]
        flag = False
    }
    if (X.Word ends with a full stop) {
        outList = outList ++ [inList ++ [X.Word]]
        A = A + 1
        inList = []
        flag = True
    }
    Move X to Table 2
}
```

Sub questions

Question Number : 165 Question Id : 640653609268 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 **outList** represent at the end of execution?

Options :

6406532035025. ❌ List of lists of last word of each sentence

6406532035026. ❌ List of lists of first word of each sentence

6406532035027. ❌ List of lists of last and first word of each sentence in that order

6406532035028. ✓ List of lists of first and last word of each sentence in that order

6406532035029. ❌ List of lists of first and last word of each sentence in any order

Question Number : 166 Question Id : 640653609269 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 values of **length(outList)** and **A** will be different at the end of execution.

Options :

6406532035030. ✘ TRUE

6406532035031. ✓ FALSE

Sub-Section Number : 7

Sub-Section Id : 64065387584

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 167 Question Id : 640653609270 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 given pseudocode is executed using the "Words" dataset. **C** stores the number of verbs which have at least one noun adjacent to it. Choose the correct code fragment to complete the pseudocode.

```

V = [ ], N = [ ], C = 0
while (Table 1 has more rows) {
    Read the first row X in Table 1
    if (X.PartOfSpeech == "Verb") {
        V = V ++ [X.SeqNo]
    }
    if (X.PartOfSpeech == "Noun") {
        N = N ++ [X.SeqNo]
    }
    Move X to Table 2
}
*****
*      Fill the code      *
*****

```

Options :

```

foreach Y in N {
    if (member(V, Y-1) or member(V, Y+1)) {
        C = C + 1
    }
6406532035032. ✘ }

```

```

foreach Y in N {
    if (member(V, Y-1) and member(V, Y+1)) {
        C = C + 1
    }
6406532035033. ✘ }

```

```

foreach Y in V {
    if (member(N, Y-1) or member(N, Y+1)) {
        C = C + 1
    }
6406532035034. ✓ }

```

```

foreach Y in V {
    if (member(N, Y-1) and member(N, Y+1)) {
        C = C + 1
    }
6406532035035. ✘ }

```

Question Number : 168 Question Id : 640653609271 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 5

Question Label : Multiple Choice Question

The following pseudocode is executed using the “Scores” table. At the end of the execution, D captures the following information: D[A][B] stores the highest marks scored in subject B by a student from city A. Choose the correct code fragment to complete the pseudocode.

```
D = { }
L = ["Physics", "Chemistry", "Mathematics"]
while (Table 1 has more rows) {
    Read the first row X in Table 1
    *****
    * Fill the code *
    *****
    Move X to Table 2
}
```

Options :

```
if (not isKey(D, X.CityTown)) {
    D[X.CityTown] = { }
    foreach B in L {
        D[X.CityTown][B] = 0
    }
} else {
    foreach B in L {
        if (D[X.CityTown][B] < X.B) {
            D[X.CityTown][B] = X.B
        }
    }
}
```

6406532035036. ✘ }

```
if (not isKey(D, X.CityTown)) {
    foreach B in L {
        D[X.CityTown][B] = 0
    }
}
foreach B in L {
    if (D[X.CityTown][B] > X.B) {
        D[X.CityTown][B] = X.B
    }
}
```

6406532035037. ✘ }

```
if (not isKey(D, X.CityTown)) {  
    D[X.CityTown] = { }  
    foreach B in L {  
        D[X.CityTown][B] = 0  
    }  
}  
foreach B in L {  
    if (D[X.CityTown][B] < X.B) {  
        D[X.CityTown][B] = X.B  
    }  
}
```

6406532035038. ✓ }

```
if (not isKey(D, X.CityTown)) {  
    D[X.CityTown] = { }  
}  
foreach B in L {  
    if (D[X.CityTown][B] < X.B) {  
        D[X.CityTown][B] = X.B  
    }  
}
```

6406532035039. ✘ }

Question Number : 169 Question Id : 640653609272 Question Type : MCQ Is Question

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

Correct Marks : 5

Question Label : Multiple Choice Question

The following pseudocode is executed using the “Scores” dataset. What will the value of L represent at the end of the execution?

```
cityMarks = { }
while (Table 1 has more rows) {
    Read the first row X in Table 1
    if (isKey(cityMarks, X.CityTown)) {
        cityMarks[X.CityTown] = cityMarks[X.CityTown] ++ [X.Total]
    }
    else {
        cityMarks[X.CityTown] = [X.Total]
    }
    Move row X to Table 2
}
```

```
A = 0, L = []
foreach c in keys(cityMarks) {
    data = doSomething(cityMarks[c])
    B = last(data) - first(data)
    if (B == A) {
        L = L ++ [c]
    }
    if (B > A) {
        A = B
        L = [c]
    }
}
```

Procedure doSomething(Y)

```
p = 0, q = 301
foreach k in Y{
    if (k > p) {
        p = k
    }
    if (k < q) {
        q = k
    }
}
return([p, q])
```

End doSomething

Options :

6406532035040. ❌ List of cities in which the difference of highest total and lowest total marks of students is same

6406532035041. ✓ List of cities in which the difference of highest total and lowest total marks of students is maximum

6406532035042. ❖ List of cities in which the difference of highest total and lowest total marks of students is minimum

6406532035043. ❖ List of cities in which the difference of highest total and lowest total marks of students is 301

Question Number : 170 Question Id : 640653609273 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 given pseudocode is executed using the “Words” dataset. What will A represent at the end of execution?

```
D = {}, A = 1000
while (Table 1 has more rows) {
    Read the first row X in Table 1
    D = updateDictionary(D, X)
    Move X to Table 2
}
```

```
foreach C in keys(D) {
    if (C is a vowel and D[C] < A) {
        A = D[C]
    }
}
```

Procedure updateDictionary(D, Y)

```
i = 1
while (i ≤ Y.LetterCount) {
    B = ith letter in Y.Word
    if (isKey(D, B)) {
        D[B] = D[B] + 1
    }
    else {
        D[B] = 1
    }
    i = i + 1
}
return (D)
```

End updateDictionary

Options :

6406532035044. ❖ Frequency count of a vowel which occurs in minimum number of words in the

dataset

6406532035045. ✘ Frequency count of a vowel which occurs minimum times in a single word

6406532035046. ✘ Frequency count of a vowel which occurs in minimum number of sentences in the dataset

6406532035047. ✓ Frequency count of the least frequent vowel in the dataset

Sub-Section Number : 8

Sub-Section Id : 64065387585

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609274 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 : (171 to 172)

Question Label : Comprehension

Consider a graph generated from **n** rows of "Scores" table that is represented by a matrix **M**. Each node in the graph corresponds to a student from the table. SeqNo is used to label the nodes in the graph. Study the given pseudocode and answer the given subquestions.

```

M = createMatrix(n, n)
foreach i in rows(M) {
    foreach j in columns(M) {
        M[i][j] = []
    }
}
L = ["Chemistry", "Mathematics", "Physics"]
while (Table 1 has more rows) {
    Read the first row X in Table 1
    Move X to Table 2
    while (Table 1 has more rows) {
        Read the first row Y in Table 1
        Move Y to Table 3
        foreach Subject in L {
            if (X.Subject > Y.Subject) {
                M[Y.SeqNo][X.SeqNo] = M[Y.SeqNo][X.SeqNo] ++ [Subject]
            }
            if (X.Subject < Y.Subject) {
                M[X.SeqNo][Y.SeqNo] = M[X.SeqNo][Y.SeqNo] ++ [Subject]
            }
        }
    }
    Move all rows from Table 3 to Table 1
}

```

Sub questions

Question Number : 171 Question Id : 640653609275 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

For each pair of vertices i and j with $i \neq j$,
choose the correct statement about $M[i][j]$.

Options :

6406532035048. ✘ $M[i][j]$ is a list of subjects in which i scores more than j

6406532035049. ✘ $M[i][j]$ is the number of subjects in which i scores more than j

6406532035050. ✓ $M[i][j]$ is a list of subjects in which i scores less than j

6406532035051. ✘ $M[i][j]$ is the number of subjects in which i scores less than j

Question Number : 172 Question Id : 640653609276 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 indicates that student **i** has scored the maximum marks in subject **s**?

Options :

6406532035052. ✘ **S** appears in **M[i][j]** for every **j**

6406532035053. ✘ **S** appears in **M[j][i]** for every **j**

6406532035054. ✓ **S** does not appear in **M[i][j]** for any **j**

6406532035055. ✘ **S** does not appear in **M[j][i]** for any **j**

Sub-Section Number : 9

Sub-Section Id : 64065387586

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609277 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 : (173 to 174)

Question Label : Comprehension

Consider a graph generated from the “Scores” table that is represented by a matrix **M**. Each node in the graph corresponds to a student from the table. SeqNo is used to label the nodes in the graph. Study the given pseudocode and answer the given subquestions.

```

A = { }
while (Table 1 has more rows) {
    Read the first row X in Table 1
    A[X.SeqNo] = [X.CityTown, X.Gender]
    Move X to Table 2
}
n = length(keys(A))
M = createMatrix(n, n)
foreach i in keys(A) {
    foreach j in keys(A) {
        if (i ≠ j and isRelated(A[i], A[j])) {
            M[i][j] = 1
        }
    }
}
Procedure isRelated(Y, Z)
    if (first(Y) == first(Z) or last(Y) == last(Z)) {
        return (True)
    }
    else {
        return (False)
    }
End isRelated

```

Sub questions

Question Number : 173 Question Id : 640653609278 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

There is an edge between students

i and j, with i ≠ j, if:

Options :

6406532035056. ✘ they are from the same city/town

6406532035057. ✘ they have the same gender

6406532035058. ✘ they are from the same city/town and have the same gender

6406532035059. ✓ they are from the same city/town or have the same gender

Question Number : 174 Question Id : 640653609279 Question Type : MSQ Is Question

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

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements are true about this graph? It is a Multiple Select Question (MSQ).

Options :

6406532035060. ✘ There are only two cliques in this graph

6406532035061. ✘ All students in a given clique have the same gender

6406532035062. ✓ The graph is undirected

6406532035063. ✓ All students in a given clique can be from different cities/towns

Sub-Section Number : 10

Sub-Section Id : 64065387587

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609280 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 graph generated from the "Words" table that is represented by a matrix **M**. Each node in the graph corresponds to a word from the table. SeqNo is used to label the nodes in the graph. Study the given pseudocode and answer the given subquestions.

```

A = { }
while (Table 1 has more rows) {
    Read the first row X in Table 1
    A[X.SeqNo] = [X.LetterCount, X.PartOfSpeech]
    Move X to Table 2
}
n = length(keys(A))
M = createMatrix(n, n)
foreach i in keys(A) {
    foreach j in keys(A) {
        if ((last(A[i]) == last(A[j])) and isCompatible(A[i], A[j])) {
            M[i][j] = 1
        }
    }
}
Procedure isCompatible(P, Q)
    if ((first(P) - first(Q)) == -1) {
        return (True)
    }
    else {
        return (False)
    }
End isCompatible

```

Sub questions

Question Number : 175 Question Id : 640653609281 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 will be an edge from word **i** to **j** if:

Options :

6406532035064. ✘ The letter count and part of speech of words **i** and **j** are same

6406532035065. ✘ The letter count of word **i** is more than **j** and both have same part of speech

6406532035066. ✘ The letter count of word **i** is one more than **j** and both have same part of speech

6406532035067. ✓ The letter count of word **j** is one more than **i** and both have same part of speech

Question Number : 176 Question Id : 640653609282 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

Every pair of nodes with the same part of speech is not connected by an edge

Options :

6406532035068. ✓ TRUE

6406532035069. ✗ FALSE

Sub-Section Number : 11

Sub-Section Id : 64065387588

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609283 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 : (177 to 178)

Question Label : Comprehension

Consider a graph generated from the “Scores” table that is represented by a matrix **M**. Each node in the graph corresponds to a student from the table. SeqNo is used to label the nodes in the graph. Study the given pseudocode and answer the given subquestions.

```

D = { }
while (Table 1 has more rows) {
    Read the first row X in Table 1
    D[X.SeqNo] = {"P": X.Physics, "C": X.Chemistry, "M": X.Mathematics}
    Move X to Table 2
}
Ph = getAdjMatrix(D, "P")
Ch = getAdjMatrix(D, "C")
Ma = getAdjMatrix(D, "M")

Procedure getAdjMatrix(D, Subject)
    n = length(keys(D))
    M = createMatrix(n,n)
    foreach i in rows(M) {
        foreach j in columns(M) {
            if (i ≠ j) {
                diff = D[i][Subject] - D[j][Subject]
                if (10 ≤ diff and diff ≤ 20) {
                    M[i][j] = 1
                }
            }
        }
    }
    return (M)
End getAdjMatrix

```

Sub questions

Question Number : 177 Question Id : 640653609284 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

Choose the correct statement based on given pseudocode.

Options :

6406532035070. ✓ For all i, j, if Ph[i][j] = 1 then Ph[j][i] = 0

6406532035071. ✗ For all i, j, if Ph[i][j] = 0 then Ph[j][i] = 1

6406532035072. ✗ For all i, j, if Ph[i][j] = 1 then Ph[j][i] = 1

6406532035073. ❖ For all i, j , if $Ph[i][j] = 0$ then $Ph[j][i] = 0$

Question Number : 178 Question Id : 640653609285 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the correct statement(s) based on given pseudocode. It is a Multiple Select Question (MSQ).

For all i, j ,

Options :

6406532035074. ✓ $0 \leq (Ph[i][j] + Ch[i][j] + Ma[i][j]) \leq 3$

6406532035075. ❖ $(Ph[i][j] + Ch[i][j] + Ma[i][j]) == (Ph[j][i] + Ch[j][i] + Ma[j][i])$

6406532035076. ❖ $(Ph[i][j] + Ch[i][j] + Ma[i][j]) \neq (Ph[j][i] + Ch[j][i] + Ma[j][i])$

6406532035077. ✓ $(Ph[i][j] + Ch[i][j] + Ma[i][j] + Ph[j][i] + Ch[j][i] + Ma[j][i]) \leq 3$

Sub-Section Number : 12

Sub-Section Id : 64065387589

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609286 Question Type : COMPREHENSION Sub Question Shuffling

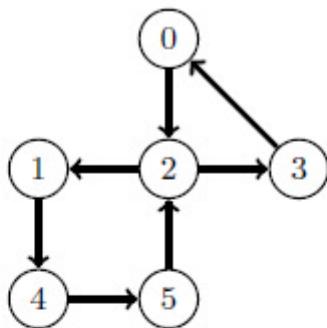
Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

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

Question Numbers : (179 to 180)

Question Label : Comprehension

Let \mathbf{M} be an adjacency matrix of a graph G given below, where $M[i][j] = 1$ if there is an edge from i to j , otherwise 0. Study the given pseudocode and answer the given subquestions.



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

Sub questions

Question Number : 179 Question Id : 640653609287 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 values of **A** and **B** at the end of execution of pseudocode given below?

```
newMatrix = updateMatrix(M)
A = newMatrix[1][0]
B = newMatrix[5][0]
```

Options :

6406532035078. ✘ A = 1, B = 1

6406532035079. ✘ A = 1, B = 0

6406532035080. ✘ A = 0, B = 1

6406532035081. ✓ A = 0, B = 0

Question Number : 180 Question Id : 640653609288 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 values of **A** and **B** at the end of execution of pseudocode given below?

```
newMatrix = updateMatrix(M)
newMatrix2 = updateMatrix(newMatrix)
A = newMatrix[1][0]
B = newMatrix[5][0]
```

Options :

6406532035082. ✘ A = 1, B = 1

6406532035083. ✘ A = 1, B = 0

6406532035084. ✓ A = 0, B = 1

6406532035085. ✘ A = 0, B = 0

Sub-Section Number :	13
Sub-Section Id :	64065387590
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 181 Question Id : 640653609289 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 5 Max. Selectable Options : 0

Question Label : Multiple Select Question

A word is said to be a palindrome if the word obtained by reversing its letters is the same as the original word. For example, *madam* is a palindrome. The following pseudocode picks up a word X from the “Words” table and checks if it is a palindrome or not. The result is stored in a boolean variable called flag. Select the correct implementation of the procedure *isPalindrome*. This procedure must return True if the word is a palindrome and False otherwise. It is a Multiple Select Question (MSQ).

```
wordList = wordToList(X)
flag = isPalindrome(wordList)
```

```
*****
*   Fill the code   *
*****
```

Procedure *wordToList*(X)

```
    i = 1
    chars = []
    while (i <= X.LetterCount) {
        chars = chars ++ [ith letter of X.Word]
        i = i + 1
    }
    return (chars)
End wordToList
```

Options :

```
Procedure isPalindrome(L)
    if (length(L) <= 1) {
        return (True)
    }
    if (first(L) ≠ last(L)) {
        return (False)
    }
    else {
        return (isPalindrome(rest(init(L))))
    }
```

6406532035086. ✓ End *isPalindrome*

6406532035087. ❌

```

Procedure isPalindrome(L)
    if (length(L) == 1) {
        return (True)
    }
    if (first(L) == last(L)) {
        return (isPalindrome(rest(init(L))))
    }
    else {
        return (False)
    }
End isPalindrome

```

```

Procedure isPalindrome(L)
    if (length(L) <= 1) {
        return (True)
    }
    if (first(L) == last(L)) {
        return (isPalindrome(rest(init(L))))
    }
    else {
        return (False)
    }

```

6406532035088. ✓ End isPalindrome

```

Procedure isPalindrome(L)
    if (length(L) <= 1) {
        return (True)
    }
    if (first(L) == last(L)) {
        return (True)
    }
    else {
        return (isPalindrome(rest(init(L))))
    }

```

6406532035089. ✖ End isPalindrome

Sub-Section Number : 14

Sub-Section Id : 64065387591

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609290 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 : (182 to 183)

Question Label : Comprehension

The procedure **calculate** takes two positive integers as arguments and returns an integer. Study the given pseudocode and answer the given subquestions.

```
Procedure calculate (i, j)
    if (j == 0) {
        return (i)
    }
    return (calculate(j + i, j - 1))
End calculate
```

Sub questions

Question Number : 182 Question Id : 640653609291 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 does **calculate**(3, 2) return?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

6

Question Number : 183 Question Id : 640653609292 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

Which of the following is the output returned by **calculate**(x, y)?

Options :

6406532035091. ✘ $y + x + (x - 1) + \dots + 1$

6406532035092. ✘ $x + (x - 1) + \dots + 1$

6406532035093. ✓ $x + y + (y - 1) + \dots + 1$

6406532035094. ✘ $x \cdot y$

Question Id : 640653609293 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 : (184 to 185)

Question Label : Comprehension

Consider the given pseudocode, two positive integers, **a** and **b** are the input parameters of procedure **mystery**, where **a ≥ b**.

A = mystery(a, b)

```
Procedure mystery(X, Y)
    if (Y ≠ 0) {
        return(mystery(Y, doSomething(X, Y)))
    }
    else {
        return(X)
    }
End mystery
```

```
Procedure doSomething(U, V)
    if (U ≠ V){
        C = 0, i = 0
        while (C ≤ U){
            i = i + 1
            C = V * i
        }
        D = U - V * (i - 1)
        return(D)
    }
    else {
        return(0)
    }
End doSomething
```

Sub questions

Question Number : 184 Question Id : 640653609294 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 the return value of procedure **doSomething(U, V)** represent, where **U ≥ V**?

Options :

6406532035095. ❌ Remainder when **V** is divided by **U**

6406532035096. ✓ Remainder when **U** is divided by **V**

6406532035097. ❌ Quotient when **V** is divided by **U**

6406532035098. ❌ Quotient when **U** is divided by **V**

6406532035099. ❌ Can not say anything

Question Number : 185 Question Id : 640653609295 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 4

Question Label : Multiple Choice Question

What will **A** represent at the end of the execution?

Options :

6406532035100. ❌ LCM of positive integers, **a** and **b**

6406532035101. ✓ HCF (GCD) of positive integers, **a** and **b**

6406532035102. ❌ Product of integers, **a** and **b**

6406532035103. ❌ Sum of integers, **a** and **b**

Sub-Section Number : 15

Sub-Section Id : 64065387592

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609296 Question Type : COMPREHENSION Sub Question Shuffling

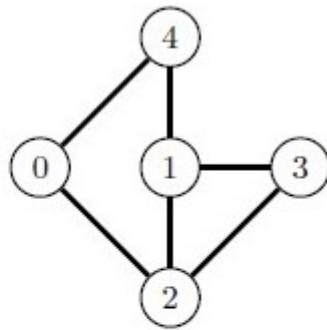
Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix

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

Question Numbers : (186 to 187)

Question Label : Comprehension

Consider the following graph with five nodes. **A** is the 5×5 adjacency matrix corresponding to this graph.



```

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

```

P = {}
S = []
P[0] = -1
P, S = DFS(A, P, S, 0)
  
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 186 Question Id : 640653609297 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 value of **S** after executing the given pseudocode?

Options :

6406532035104. ✘ **S = [0, 4, 1, 3, 2]**

6406532035105. ✘ **S = [0, 2, 3, 1, 4]**

6406532035106. ✘ $S = [0, 2, 1, 4, 3]$

6406532035107. ✓ $S = [0, 2, 1, 3, 4]$

Question Number : 187 Question Id : 640653609298 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 the value of **keys(P)** after executing the given pseudocode?

Options :

6406532035108. ✘ $\text{keys}(P) = [0, 4, 1, 3, 2]$

6406532035109. ✘ $\text{keys}(P) = [0, 2, 3, 1, 4]$

6406532035110. ✘ $\text{keys}(P) = [0, 2, 1, 4, 3]$

6406532035111. ✘ $\text{keys}(P) = [0, 2, 1, 3, 4]$

6406532035112. ✓ Cannot be determined

Sem1 English1

Section Id :	64065341251
Section Number :	8
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	28
Number of Questions to be attempted :	28
Section Marks :	100
Display Number Panel :	Yes
Section Negative Marks :	0

Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387593
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 188 Question Id : 640653609299 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 :

6406532035113. ✓ YES

6406532035114. ✗ NO

Sub-Section Number :	2
Sub-Section Id :	64065387594
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653609300 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 : (189 to 198)

Question Label : Comprehension

Read the following passage and answer the given subquestions.

It had happened when I was ten or eleven years old. I had decided to learn to swim. There was a pool at the Y.M.C.A. in Yakima that offered exactly the opportunity. The Yakima River was treacherous. Mother continually warned against it, and kept fresh in my mind the details of each drowning in the river. But the Y.M.C.A. pool was safe. It was only two or three feet deep at the shallow end; and while it was nine feet deep at the other, the drop was gradual. I got a pair of water wings and went to the pool. I hated to walk naked into it and show my skinny legs. But I subdued my pride and did it.

From the beginning, however, I had an aversion to the water when I was in it. This started when I was three or four years old and father took me to the beach in California. He and I stood together in the surf. I hung on to him, yet the waves knocked me down and swept over me. I was buried in water. My breath was gone. I was frightened. Father laughed, but there was terror in my heart at the overpowering force of the waves.

My introduction to the Y.M.CA. swimming pool revived unpleasant memories and stirred childish fears. But in a little while I gathered confidence. I paddled with my new water wings, watching the other boys and trying to learn by aping them. I did this two or three times on different days and was just beginning to feel at ease in the water when the misadventure happened.

I went to the pool when no one else was there. The place was quiet. The water was still, and the tiled bottom was as white and clean as a bathtub. I was timid about going in alone, so I sat on the side of the pool to wait for others.

I had not been there long when in came a big bruiser of a boy, probably eighteen years old. He had thick hair on his chest. He was a beautiful physical specimen, with legs and arms that showed rippling muscles. He yelled, "Hi, Skinny! How'd you like to be ducked?"

Sub questions

Question Number : 189 Question Id : 640653609301 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 “water wings”?

Options :

6406532035115. ✘ Metal rings filled with air

6406532035116. ✘ Plastic rings filled with water

6406532035117. ✓ Plastic rings filled with air

6406532035118. ✘ Metal rings filled with water

Question Number : 190 Question Id : 640653609302 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 passage, where is the pool located?

Options :

6406532035119. ✘ Oklahoma

6406532035120. ✓ Yakima

6406532035121. ✘ Texas

6406532035122. ✘ Florida

Question Number : 191 Question Id : 640653609303 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

Select true or false for the following statement.

The Y.M.C.A. pool was only four or five feet deep at the shallow end.

Options :

6406532035123. ✘ True

6406532035124. ✓ False

Question Number : 192 Question Id : 640653609304 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

Select true or false for the following statement.

The narrator developed an aversion to water when he was three or four years old.

Options :

6406532035125. ✓ True

6406532035126. ✘ False

Question Number : 193 Question Id : 640653609305 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 "misadventure"?

Options :

6406532035127. ✘ A peaceful event

6406532035128. ✓ An unlucky event

6406532035129. ✘ An exciting event

6406532035130. ✘ A happy event

Question Number : 194 Question Id : 640653609306 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 one of the following words is the antonym of the word “brave”?

Options :

6406532035131. ✘ Bold

6406532035132. ✘ Daring

6406532035133. ✓ Timid

6406532035134. ✘ Heroic

Question Number : 195 Question Id : 640653609307 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

At which place did the narrator develop an aversion to water?

Options :

6406532035135. ✘ New York

6406532035136. ✘ Massachusetts

6406532035137. ✘ New Jersey

6406532035138. ✓ California

**Question Number : 196 Question Id : 640653609308 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 "aping"?

Options :

6406532035139. ✘ To laugh

6406532035140. ✘ To faint

6406532035141. ✘ To cry

6406532035142. ✓ To imitate

**Question Number : 197 Question Id : 640653609309 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 "bruiser"?

Options :

6406532035143. ✘ A person who is jovial

6406532035144. ✓ A person who is aggressive

6406532035145. ✘ A person who is spiritual

6406532035146. ✘ A person who is calm

Question Number : 198 Question Id : 640653609310 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

Read the passage and select true or false for the following statement.

A girl tossed the narrator into the deep end of the pool.

Options :

6406532035147. ✘ True

6406532035148. ✓ False

Question Id : 640653609311 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 208)

Question Label : Comprehension

Listen to the audio sample and answer the given subquestions.



885_640653_0_1984128_hs1001etqe1s2q1mq.mp3

Sub questions

Question Number : 199 Question Id : 640653609312 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 *hominin*?

Options :

6406532035149. ✓ 3

6406532035150. ✘ 6

6406532035151. ✘ 9

6406532035152. ✘ 12

Question Number : 200 Question Id : 640653609313 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 *throughout*?

Options :

6406532035153. ✘ 1

6406532035154. ✓ 2

6406532035155. ✘ 3

6406532035156. ✘ 4

Question Number : 201 Question Id : 640653609314 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 has a similar meaning to the word to *coexist*?

Options :

6406532035157. ✘ Fight

6406532035158. ✘ Make war

6406532035159. ✓ Harmonious living

6406532035160. ✘ Squabbling

Question Number : 202 Question Id : 640653609315 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 close antonym of the word *sequence*?

Options :

6406532035161. ❌ String

6406532035162. ❌ Chain

6406532035163. ❌ Arrangement

6406532035164. ✓ Disorder

Question Number : 203 Question Id : 640653609316 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

Svante Pääbo found a way to extract genetic material from _____ hominin species.

Options :

6406532035165. ✓ Extinct

6406532035166. ❌ Excited

6406532035167. ❌ Exit

6406532035168. ❌ Entitled

Question Number : 204 Question Id : 640653609317 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 hominin species mentioned in the audio are _____.

Options :

6406532035169. ✘ Neanderthal

6406532035170. ✘ Denisovan

6406532035171. ✓ Both Neanderthal and Denisovan

6406532035172. ✘ Neither Neanderthal nor Denisovan

Question Number : 205 Question Id : 640653609318 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

Homo sapiens in no part of the world coexisted or interbred with Neanderthals and Denisovans.

Options :

6406532035173. ✘ True

6406532035174. ✓ False

Question Number : 206 Question Id : 640653609319 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 discovery of 'ancient flow of genes' between Neanderthals and Denisovans with Homo sapiens helps us better understand which among the following?

Options :

6406532035175.

* The friendships between the hominins

6406532035176. * The family trees of Neanderthals just before they got extinct

6406532035177. * The physiology of Denisovans and how they came to live in trees

6406532035178. ✓ The physiology of modern humans in terms of diseases and how they are tackled

Question Number : 207 Question Id : 640653609320 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 *development*?

Options :

6406532035179. * First

6406532035180. ✓ Second

6406532035181. * Third

6406532035182. * Fourth

Question Number : 208 Question Id : 640653609321 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 *sequence*?

Options :

6406532035183. ✓ First

6406532035184. * Third

6406532035185. * Fifth

6406532035186. * Second

Sub-Section Number :	3
Sub-Section Id :	64065387595
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653609322 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 : (209 to 213)

Question Label : Comprehension

Read the following telephone conversation and answer the given subquestions:

Rita – Hello Tina!

Tina – Oh Rita! (i)_____

Rita – I am fine, what about you?

Tina – (ii)_____.

Rita – (iii)_____

Tina – Well, I have started my undergraduate studies in English Honours at St. Xaviers College in Mumbai.

Rita – Wow! You finally got to study the subject you loved the most in school.

Tina- Yes! I am glad that I chose this subject. (iv)_____

Rita- I have started my undergraduate studies in Psychology Honours at Saint Paul's college, Ranchi.

Sub questions

Question Number : 209 Question Id : 640653609323 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

Fill in the blank (i) with an appropriate response?

Options :

6406532035187. ✘ Who are you?

6406532035188. ✓ How are you?

6406532035189. ✘ Where are you?

Question Number : 210 Question Id : 640653609324 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

Fill in the blank (ii) with an appropriate response?

Options :

6406532035190. ✓ I'm good too

6406532035191. ✘ I'm in Mumbai too

6406532035192. ✘ I am in Chennai too

Question Number : 211 Question Id : 640653609325 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

Fill in the blank (iii) with an appropriate response?

Options :

6406532035193. ✘ How are you?

6406532035194. ✘ Who are you?

6406532035195. ❖ Where is your family?

6406532035196. ✓ What are you doing now?

Question Number : 212 Question Id : 640653609326 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

Fill in the blank (iv) with an appropriate response?

Options :

6406532035197. ✓ What are you doing?

6406532035198. ❖ How are you?

6406532035199. ❖ Are you sick?

6406532035200. ❖ Where is your sister ?

Question Number : 213 Question Id : 640653609327 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 conversation between Rita and Tina is

Options :

6406532035201. ❖ Formal

6406532035202. ✓ Informal

Question Id : 640653609334 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 : (214 to 218)

Question Label : Comprehension

Listen to the audio and answer the given subquestions:



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Sub questions

Question Number : 214 Question Id : 640653609335 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 appropriate pause for the following sentence as you hear in the audio:

But at the same time I believe we have a precious opportunity to step back and ask some searching questions about what kind of country we want to be here at home too

Options :

6406532035223. ✓ //But at the same time I believe we have a precious opportunity/ to step back/ and ask some searching questions about what kind of country we want to be here at home too//

6406532035224. ✗ //But at the same time I believe we have a precious opportunity/ to step back/ and ask some searching questions/ about what kind of country we want to be/ here at home too//

6406532035225. ✗ //But at the same time I believe we have a precious opportunity to step back/ and ask some searching questions about what kind of country we want to be/ here at home too//

6406532035226. ✗ //But at the same time I believe/ we have a precious opportunity to step back/ and ask some searching questions about what kind of country we want to be/ here at home too//

Question Number : 215 Question Id : 640653609336 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 word '*meritocratic*' is stressed on the _____ syllable.

Options :

6406532035227. ✘ First syllable

6406532035228. ✘ Third syllable

6406532035229. ✓ Fourth syllable

6406532035230. ✘ Fifth syllable

Question Number : 216 Question Id : 640653609337 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 word '*ambitious*' is stressed on the_____ syllable.

Options :

6406532035231. ✘ First syllable

6406532035232. ✓ Second syllable

6406532035233. ✘ Third syllable

6406532035234. ✘ No syllables receive stress

Question Number : 217 Question Id : 640653609338 Question Type : MCQ Is Question

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

Correct Marks : 2

Question Label : Multiple Choice Question

Identify the number of syllables in the word '*frustration*'.

Options :

6406532035235. ✘ 1

6406532035236. ✘ 2

6406532035237. ✓ 3

6406532035238. ✘ 4

Question Number : 218 Question Id : 640653609339 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

There is a long vowel in the word '*precious*'.

Options :

6406532035239. ✘ True

6406532035240. ✓ False

Question Id : 640653609340 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 : (219 to 223)

Question Label : Comprehension

Match Column A with suitable options in Column B. (Hint: Word Collocation)

A	B
A. Wedding	1. Congestion
B. Health	2. Appliances
C. Mountain	3. Ceremony
D. Kitchen	4. Insurance
E. Traffic	5. Peak

Based on the above data answer the given subquestions.

Sub questions

Question Number : 219 Question Id : 640653609341 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

Wedding _____

Options :

6406532035241. ❌ Congestion

6406532035242. ❌ Appliances

6406532035243. ✓ Ceremony

6406532035244. ❌ Insurance

6406532035245. ❌ Peak

Question Number : 220 Question Id : 640653609342 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

Health _____

Options :

6406532035246. ❌ Congestion

6406532035247. ❌ Appliances

6406532035248. ❌ Ceremony

6406532035249. ✓ Insurance

6406532035250. ❌ Peak

Question Number : 221 Question Id : 640653609343 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

Mountain _____

Options :

6406532035251. ❌ Congestion

6406532035252. ❌ Appliances

6406532035253. ❌ Ceremony

6406532035254. ❌ Insurance

6406532035255. ✓ Peak

Question Number : 222 Question Id : 640653609344 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

Kitchen _____

Options :

6406532035256. ❌ Congestion

6406532035257. ✓ Appliances

6406532035258. ❌ Ceremony

6406532035259. ❌ Insurance

6406532035260. ❌ Peak

Question Number : 223 Question Id : 640653609345 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

Traffic _____

Options :

6406532035261. ✓ Congestion

6406532035262. ❌ Appliances

6406532035263. ❌ Ceremony

6406532035264. ❌ Insurance

6406532035265. ❌ Peak

Sub-Section Number : 4

Sub-Section Id : 64065387596

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609328 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 : (224 to 227)

Question Label : Comprehension

Read the following excerpt from an article, and fill in the blanks using the appropriate options in the given subquestions.

(i)_____, each one glances over at the central figure in the room, Berkeley biochemist Jennifer Doudna. (ii)_____ Doudna sits quietly toward the front of the table scanning her open laptop, her presence looms large. Students find their way over (iii)_____ a few precious minutes of her time, chatting about projects or papers with an almost reverent tone. Doudna is the executive director of the IGI, an academic initiative run by UC Berkeley and UC San Francisco (iv)_____ fulfilling the promise of CRISPR, the powerful genome-editing tool that she helped discover.

Sub questions

Question Number : 224 Question Id : 640653609329 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

Select the correct option to fill in the blank at (i)

Options :

6406532035203. ✘ About time

6406532035204. ✘ When I asked

6406532035205. ✓ As people enter

6406532035206. ✘ Meaning

Question Number : 225 Question Id : 640653609330 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

Select the correct option to fill in the blank at (ii)

Options :

6406532035207. ✘ Despite

6406532035208. ✓ Although

6406532035209. ✘ Notice

6406532035210. ✘ Meanwhile

Question Number : 226 Question Id : 640653609331 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

Select the correct option to fill in the blank at (iii)

Options :

6406532035211. ✘ Meet

6406532035212. ✘ Keep

6406532035213. ✘ Feel

6406532035214. ✓ Steal

Question Number : 227 Question Id : 640653609332 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

Select the correct option to fill in the blank at (iv)

Options :

6406532035215. ✓ With the aim of

6406532035216. ✗ In order to

6406532035217. ✗ Because of

6406532035218. ✗ Albeit

Sub-Section Number : 5

Sub-Section Id : 64065387597

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 228 Question Id : 640653609333 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Simplify the sentence '*There is a need for more careful inspection of all teacher preparation programs.*'

Select all possible correct answers.

Options :

6406532035219. ✓ We must inspect all teacher preparation programs more carefully.

6406532035220. ✓ Teacher preparation programs must be inspected more carefully.

6406532035221. ✗ It is absolutely required that teacher preparation programs are inspected more carefully.

6406532035222. ✗ It is exceedingly essential that all teacher preparation programs be carefully inspected.

Sub-Section Number : 6

Sub-Section Id : 64065387598

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 229 Question Id : 640653609346 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 /ei/ sound.

Options :

6406532035266. ❌ Kate

6406532035267. ❌ Cat

6406532035268. ❌ Weight

6406532035269. ✓ Both Kate and Weight

Question Number : 230 Question Id : 640653609347 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 the underlined noun.

The police were effective in dispersing the crowd.

Options :

6406532035270. ❌ Common noun

6406532035271. ✓ Collective noun

6406532035272. ❌ Abstract noun

6406532035273. ❌ Proper noun

Question Number : 231 Question Id : 640653609348 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

Read the sentences carefully and find which part of speech the underlined word is. Indicate your response accordingly.

This is his pen.

Options :

6406532035274. ❌ Possessive pronoun

6406532035275. ✓ Possessive adjective

6406532035276. ❌ Adverb

6406532035277. ❌ Verb

Question Number : 232 Question Id : 640653609349 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

Are you looking forward _____ Nikhil again?

Options :

6406532035278. ❌ Seeing

6406532035279. ❌ To see

6406532035280. ❌ To be seeing

6406532035281. ✓ To seeing

Question Number : 233 Question Id : 640653609350 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

Their idea of a holiday _____ at a luxury resort.

Options :

6406532035282. ❌ Is relaxed

6406532035283. ❌ Is to relaxing

6406532035284. ❌ Is relax

6406532035285. ✓ Is relaxing

Question Number : 234 Question Id : 640653609351 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 blanks with the appropriate articles.

She was reading _____ book on _____ life of Mother Teresa who was ____ inspiration to all.

Options :

6406532035286. ✓ a, the, an

6406532035287. ❌ the, an, a

6406532035288. ❌ an, the, a

Question Number : 235 Question Id : 640653609352 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

Select the right meaning of the following idiom/phrase.

Hornet's nest.

Options :

6406532035289. ❌ A busy house

6406532035290. ✓ A violent situation

6406532035291. ❌ A bee's house

Question Number : 236 Question Id : 640653609353 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

Select the most appropriate idiom of the given meaning.

Not working properly.

Options :

6406532035292. ❌ Out of fashion

6406532035293. ❌ Out of the blue

6406532035294. ✓ Out of order

6406532035295. ❌ Out of this world

Question Number : 237 Question Id : 640653609354 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.

Don't trust him, he always _____ his word.

Options :

6406532035296. ✘ Gets over

6406532035297. ✘ Gets around

6406532035298. ✓ Goes back on

6406532035299. ✘ Goes back

Question Number : 238 Question Id : 640653609355 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 appropriate option.

There are plenty of oranges in the fridge. You _____ buy any.

Options :

6406532035300. ✘ May not

6406532035301. ✘ Mustn't

6406532035302. ✘ Should not

6406532035303. ✓ Needn't

Question Number : 239 Question Id : 640653609356 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

Hundred books _____ in that library.

Options :

6406532035304. ✓ Were arranged

6406532035305. ✗ Was arranged

6406532035306. ✗ Was not arranged

6406532035307. ✗ Will arranged

Question Number : 240 Question Id : 640653609357 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

Select true/false for the following statement.

The sentence '*I'm looking for a research associate*' is an example of present progressive tense.

Options :

6406532035308. ✓ True

6406532035309. ✗ False

Question Number : 241 Question Id : 640653609358 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

My parents are abroad. Most probably, they will come to visit me ____ December.

Options :

6406532035310. ✗ On

6406532035311. ✗ At

6406532035312.

✓ In

6406532035313. ✘ With

Question Number : 242 Question Id : 640653609359 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

Either John or Mary _____ with my daughter.

Options :

6406532035314. ✘ Fight

6406532035315. ✓ Fights

6406532035316. ✘ Are fighting

Question Number : 243 Question Id : 640653609360 Question Type : MCQ Is Question

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

Correct Marks : 1

Question Label : Multiple Choice Question

In the sentence '*Shyam goes to college*', the tense and agreement is in the word _____.

Options :

6406532035317. ✘ College

6406532035318. ✘ Shyam

6406532035319. ✓ Goes

6406532035320. ✘ To college

Question Number : 244 Question Id : 640653609361 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 :

6406532035321. ❌ Fifty rupees are not a big sum.

6406532035322. ✓ Fifty rupees is not a big sum.

Question Number : 245 Question Id : 640653609362 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 :

6406532035323. ❌ Children likes toys.

6406532035324. ✓ Children like toys.

Question Number : 246 Question Id : 640653609363 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 :

6406532035325. ❌ I will meet him when he will come.

6406532035326. ✓ I will meet him when he comes.

Question Number : 247 Question Id : 640653609365 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

'Christmas is always on December.' This sentence is grammatically correct.

Options :

6406532035331. ✘ True

6406532035332. ✓ False

Sub-Section Number : 7

Sub-Section Id : 64065387599

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 248 Question Id : 640653609364 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

What are the three main elements of a good presentation?

Options :

6406532035327. ✓ Slides

6406532035328. ✓ Delivery

6406532035329. ✓ Message

6406532035330. ✘ Character

Appdev2

Section Id :	64065341252
Section Number :	9
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	33
Number of Questions to be attempted :	33
Section Marks :	100
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387600
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 249 Question Id : 640653609366 Question Type : MCQ Is Question

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

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : MODERN APPLICATION DEVELOPMENT 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 :

6406532035333. ✓ YES

6406532035334. ✗ NO

Sub-Section Number : 2

Sub-Section Id : 64065387601

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 250 Question Id : 640653609367 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 below HTML document.

index.html:

```
<table id ="table_id">
  <tr>
    <th>Name</th>
    <th>Standard</th>
  </tr>

  <tr>
    <td id = "cell_id_1">Abhishek</td>
    <td id = "cell_id_2">10th</td>
  </tr>
  <tr>
    <td id = "cell_id_3">Narendra</td>
    <td id = "cell_id_4">11th</td>
  </tr>
</table>

<script>
document.getElementById("table_id").addEventListener("click", () =>
console.log("Table Clicked !!"), true);

document.getElementById("cell_id_1").addEventListener("click", () =>
console.log("Cell Clicked !!"), true);
</script>
```

Suppose you open the “index.html” file in a browser, and click on the table cell with the text “Abhishek”. Which of the following shows the correct sequence of output?

Options :

Cell Clicked !!
6406532035335. ❌ Table Clicked !!

Table Clicked !!
6406532035336. ✓ Cell Clicked !!

6406532035337. ❌ Cell Clicked !!
6406532035338. ❌ Table Clicked !!

Question Number : 251 Question Id : 640653609368 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 below HTML document.

index.html:

```
<table id = "table_id">
    <tr>
        <th>Name</th>
        <th>Standard</th>
    </tr>

    <tr>
        <td id = "cell_id_1">Abhishek</td>
        <td id = "cell_id_2">10th</td>
    </tr>
    <tr>
        <td id = "cell_id_3">Narendra</td>
        <td id = "cell_id_4">11th</td>
    </tr>
</table>

<script>
document.getElementById("table_id").addEventListener("click", () =>
console.log("Table Clicked !!"));

document.getElementById("cell_id_1").addEventListener("click", () =>
console.log("Cell Clicked !!"));
</script>
```

Suppose you open the “index.html” file in a browser, and click on the table cell with the text “Abhishek”. Which of the following shows the correct sequence of output?

Options :

6406532035339.

Cell Clicked !!

✓ Table Clicked !!

Table Clicked !!

6406532035340. ✖ Cell Clicked !!

6406532035341. ✖ Cell Clicked !!

6406532035342. ✖ Table Clicked !!

Question Number : 252 Question Id : 640653609369 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 JavaScript program, and predict the output if executed.

```
var first = 1;
obj1 = {
    'first' : 2,
    'second' : function some () {
        console.log(this.first);
    }
}
obj2 = {
    'first' : 3,
    'second' : function some () {
        console.log("Function Invoked !!");
        this.second();
    }
}
obj2.second.call(obj1);
```

Options :

6406532035343. ✖

Function Invoked !!

1

Function Invoked !!

6406532035344. ✓ 2

Function Invoked !!

6406532035345. ✗ 3

6406532035346. ✗ The program will cause an infinite loop and keep printing the message "Function Invoked !!"

Question Number : 253 Question Id : 640653609371 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

Match the Vue directives / constructs with their function.

Vue Directive / Construct	Function
1. v-bind	A. Used to hide uncompiled mustache bindings until the instance is ready
2. v-model	B. used to achieve 2-way data binding
3. v-cloak	C. used to bind an HTML attribute to data in the Vue instance
4. v-on	D. used to bind events with HTML elements

Options :

6406532035351. ✗ 1-A, 2-B, 3-C, 4-D

6406532035352. ✗ 1-C, 2-B, 3-D, 4-A

6406532035353.

* 1-C, 2-D, 3-A, 4-B

6406532035354. ✓ 1-C, 2-B, 3-A, 4-D

Question Number : 254 Question Id : 640653609374 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 below Vue application with markup file “index.html” and javascript file “app.js”.

index.html:

```
<div id = "app">
  <router-view></router-view>
</div>
<script src = "app.js"> </script>
```

app.js:

```
const First = Vue.component("first", {
  template: `<div>Hello First Component !!</div>`
})

const Second = Vue.component("second", {
  template: `<div>Hello Second Component !!</div>`
})

const router = new VueRouter({
  base: '/myapp/',
  routes: [
    {
      path: "/endpoint1",
      component: First,
    },
    {
      path: "/endpoint2",
      component: Second,
    },
  ],
});
const app = new Vue({
  el: '#app',
  router,
  data: {},
  methods: {}
});
```

Suppose the application is deployed under a subdirectory named “/myapp/” of a domain named “<https://appdev2-may2023.com>”, and you want to navigate to a page that renders “Hello Second Component !!”. What should be the correct URL to get the desired output?

Options :

6406532035363. ✖ <https://appdev2-may2023.com/myapp/#/>

6406532035364. ✖ <https://appdev2-may2023.com/myapp/#/endpoint1>

6406532035365. ✓ <https://appdev2-may2023.com/myapp/#/endpoint2>

6406532035366. ✖ <https://appdev2-may2023.com/#/endpoint1>

Question Number : 255 Question Id : 640653609375 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 below Vue application with markup file “index.html” and javascript file “app.js”.

index.html:

```
<div id = "app">
  <router-link to="/endpoint1">Home</router-link>
  <router-view></router-view>
</div>
<script src = "app.js"> </script>
```

app.js:

```
const First = Vue.component("first", {
  template: `<div>Hello First Component !!</div>`,
  mounted() {
    this.$router.push("/endpoint2");
  }
})

const Second = Vue.component("second", {
  template: `<div>Hello Second Component !!</div>`
})

const router = new VueRouter({
  routes: [
    {
      path: "/endpoint1",
      component: First,
    },
    {
      path: "/endpoint2",
      component: Second,
    },
  ]
});

const app = new Vue({
  el: '#app',
  router,
  data: {},
  methods: {}
});
```

Suppose you open the “index.html” file in a browser, and click on the link with the text “Home”. What will be rendered by the browser except the router links in the navigation menu?

Options :

6406532035367. ✘ Hello First Component !!

6406532035368. ✓ Hello Second Component !!

6406532035369. ✘ 404

6406532035370. ✘ Blank Page

Question Number : 256 Question Id : 640653609382 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 below javascript program, and predict the output, if executed.

```
new Promise((reject, resolve) => {
    if ("iitm".split("iitm").length == 3)
        resolve("Promise is rejected")
    else
        reject("Promise is resolved")

}).then(data => console.log("Promise Rejected :", data),
       data => console.log("Promise Resolved :", data))
.then(data => {
    console.log("Value received from previous block :", data)
    return 34
}).catch(error => console.log("Error caused :", error)).finally(data => {
    console.log("In Finally Block :", data)
    return 39
}).then(data => console.log("Value received from previous block :", data))
```

Options :

Promise Resolved : Promise is resolved

Value received from previous block : undefined

In Finally block : undefined

6406532035395. ✘ Value received from previous block : 39

Promise Resolved : Promise is rejected

Value received from previous block : undefined

In Finally block : 34

6406532035396. ✘ Value received from previous block : 39

Promise Resolved : Promise is rejected
Value received from previous block : undefined
In Finally block : undefined

6406532035397. ✓ Value received from previous block : 34

Promise Rejected : Promise is resolved
Value received from previous block : undefined
In Finally block : undefined

6406532035398. ✗ Value received from previous block : 34

Question Number : 257 Question Id : 640653609391 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 flask application.

app.py:

```
from flask import Flask
from flask_caching import Cache
import time

config = {
    "DEBUG": True,
    "CACHE_TYPE": "RedisCache",
    "CACHE_REDIS_URL": "redis://localhost:6379/1",
    "CACHE_DEFAULT_TIMEOUT": 300
}
app = Flask(__name__)
app.config.from_mapping(config)
cache = Cache(app)

@app.get('/name/<name>')
@cache.cached(timeout=100)
def get_name(name):
    time.sleep(30)
    return name

if __name__ == '__main__':
    app.run()
```

Suppose the application is running on “<http://localhost:5000>”. If the client makes two requests (one after another) to URL “<http://localhost:5000/name/mohan>” within 50 seconds. What will be the approximate absolute difference between their latencies?

Options :

6406532035431. ✓ 30 Seconds

6406532035432. ✗ 40 Seconds

6406532035433. ✗ 0 Seconds

6406532035434. ✗ None of these

Question Number : 258 Question Id : 640653609393 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 javascript code.

```
function promoter(cgpa) {
  return new Promise((res, rej) => {
    if (cgpa > 9.0) {
      res()
    } else {
      rej()
    }
  })
}

promoter(8)
  .then(
    () => {
      console.log('Promoted')
    },
    () => {
      console.log('Not Promoted')
    }
  )
  .finally(() => {
    console.log('Job Done')
  })
}
```

Options :

6406532035439. ❌ Not Promoted

6406532035440. ❌ Promoted

Not Promoted

6406532035441. ✓ Job Done

Promoted
6406532035442. ✶ Job Done

Question Number : 259 Question Id : 640653609395 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 below Vue application with markup file “index.html” and javascript file “app.js”.

index.html:

```
<div id="app"></div>
```

app.js:

```
new Vue({  
  el: '#app',  
  template: `<div>{{message}}</div>`,  
  data: {  
    message: null,  
  },  
  created() {  
    this.message = 'Hello from created'  
  },  
  mounted() {  
    this.message = 'Hello from mounted'  
  },  
})
```

Suppose the application is running on “<http://localhost:8080>”. What will be rendered by the browser in the div of the template?

Options :

6406532035447. ✶ Hello from created

6406532035448. ✓ Hello from mounted

6406532035449. ✘ null

6406532035450. ✘ None of these

Question Number : 260 Question Id : 640653609398 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 Vue application

index.html:

```
<div id="app"></div>
```

app.js:

```

const Home = {
  template: `<div> This is home <router-view /></div>` ,
}

const NotFound = {
  template: `<div>Not Found</div>` ,
}

const Students = {
  template: `<ul><li v-for='student in students'>{{student.name}}</li></ul>` ,
  data() {
    return {
      students: [
        { id: 1, name: 'std1', course: 'mad1' },
        { id: 2, name: 'std2', course: 'mad2' },
        { id: 3, name: 'std3', course: 'mad1' },
      ],
    }
  },
}
const Student = {
  template: `<div>Name: {{student.name}}, Course: {{student.course}}</div>` ,
  props: ['id'],
  computed: {
    student() {
      return Students.data().students.find((std) => {
        return std.id == (this.id % 3) + 1
      })
    },
  },
}
const router = new VueRouter({
  routes: [
    {
      path: '/',
      component: Home,
      children: [
        { path: '', component: Students },
        { path: 'student/:id', component: Student, props: true },
        { path: '*', component: NotFound },
      ],
    },
  ],
})
new Vue({
  el: '#app',
  template: `<div><router-view /></div>` ,
  router,
})

```

Suppose the application is running on "<http://localhost:8080>". What will be rendered by the browser inside the "router-view" component of "Home" Component for the URL "<http://localhost:8080/students>"?

Options :

6406532035459. ✘ Name: std1, Course: mad1

6406532035460. ✘ Name: std2, Course: mad2

6406532035461. ❌ Name: std3, Course: mad1

6406532035462. ✓ Not Found

Sub-Section Number :	3
Sub-Section Id :	64065387602
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 261 Question Id : 640653609370 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following is/are example(s) of ephemeral state?

Options :

6406532035347. ✓ Currently selected tab/page in a multi page/tab document

6406532035348. ❌ User Preferences

6406532035349. ✓ Loading Icons

6406532035350. ❌ Shopping Cart

Question Number : 262 Question Id : 640653609381 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statement(s) is/are false in general?

Options :

6406532035391. ❌ As an application developer, it is not possible to hide javascript from the user.

6406532035392. ✓ “Denial of Service” is an attack that injects malicious client side scripts.

6406532035393. ✗ CORS is a mechanism used to control and manage cross-origin requests in a web application

6406532035394. ✓ The terms “privacy” and “security” are the same when it comes to web applications.

Question Number : 263 Question Id : 640653609383 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statement(s) is/are correct regarding the execution context in JavaScript?

Options :

6406532035399. ✓ Global execution context is created when the script starts to run.

6406532035400. ✗ Function execution context is created when the script starts to run.

6406532035401. ✓ A function execution context is created when the function is called.

6406532035402. ✗ All of these.

Question Number : 264 Question Id : 640653609384 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements is/are correct regarding the prototype in javascript?

Options :

6406532035403. ✓ Every object in JavaScript has a prototype.

6406532035404. ✓ Prototype of an object can be null.

6406532035405. ❌ Prototype of an object cannot be null.

6406532035406. ❌ None of these.

Question Number : 265 Question Id : 640653609386 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements is/are correct?

Options :

6406532035411. ✓ Memoization term is used for a special kind of caching where the return value of a function is cached based on its parameters value.

6406532035412. ✓ Redis database can be used to cache data.

6406532035413. ❌ Caching can only be done at the browser level.

6406532035414. ❌ All of these

Question Number : 266 Question Id : 640653609390 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements is/are true regarding the celery in python?

Options :

6406532035427. ✓ Celery is a task queue.

6406532035428. ✓ Celery typically runs the tasks asynchronously.

6406532035429. ❌ Celery typically runs the tasks synchronously.

6406532035430. ❌ None of these.

Sub-Section Number :	4
Sub-Section Id :	64065387603
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 267 Question Id : 640653609372 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 are true regarding async and await?

Options :

6406532035355. ✘ The “await” can only be used inside an async function, except browser console.

6406532035356. ✘ The “await” keyword is typically used to wait for a promise and get its fulfilment value.

6406532035357. ✘ The “await” keyword pauses the execution of code of the async function till the promise is in pending state, and executes the code outside the function, in the meantime.

6406532035358. ✓ All of these

Question Number : 268 Question Id : 640653609380 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 true regarding HTTP and fetch API?

Options :

6406532035387. ✘ A fetch call is capable of sending image data.

6406532035388. ✘ The “Accept” HTTP header is used by HTTP clients to tell the server which type of content they expect/prefer as response.

6406532035389. ❌ A fetch call allows a developer to add custom headers in the request.

6406532035390. ✅ All of these

Sub-Section Number : 5

Sub-Section Id : 64065387604

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 269 Question Id : 640653609373 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following Vue application with markup “index.html” and javascript file “app.js”.

index.html:

```
<div id = "app">
  <input v-model = "name" @input = "do_something">
  <p> {{age}} </p>
</div>
<script scr = "app.js"></script>
```

app.js:

```
new Vue({
  el: "#app",
  data: {
    name: "",
    age: 0,
  },
  mounted() {
    try {
      localStorage.setItem("age", localStorage.getItem("age") +
localStorage.getItem("age"))
      this.name += localStorage.getItem("age")
      this.name, this.age = localStorage.getItem("name").split(" ");
    }
    catch {
      this.name = "Default";
      this.age = "Default";
    }
  },
  methods: {
    do_something() {
      localStorage.setItem("name", this.name);
      localStorage.setItem("age", this.age);
    }
  }
})
```

Suppose you open “index.html” file in a browser, and type the text “App Dev II” in the text box shown (after removing the previous text, if any), and hard refresh the page twice, without clicking anywhere. What will be the value shown in the text box, and the “age” placeholder, respectively?

Options :

Text Box: Default
6406532035359. ❗ Age Placeholder: Default

Text Box: DefaultDefaultDefaultDefault

6406532035360. ❌ Age Placeholder: Default

Text Box: DefaultDefaultDefaultDefault

6406532035361. ✓ Age Placeholder: ["App", "Dev", "II"]

Text Box: DefaultDefault

6406532035362. ❌ Age Placeholder: ["App", "Dev", "II"]

Question Number : 270 Question Id : 640653609377 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the below flask app, and an HTML file named “index.html”.

app.py:

```
from flask import Flask
import time

app = Flask(__name__)

@app.route("/endpoint1")
def method1():
    time.sleep(20)
    return "Endpoint 1 Accessed", 200, {'Access-Control-Allow-Origin' : '*'}

@app.route("/endpoint2")
def method2():
    time.sleep(30)
    return "Endpoint 2 Accessed", 200, {'Access-Control-Allow-Origin' : '*'}

if __name__ == "__main__":
    app.run(threaded = False)
```

index.html:

```
<div>
    Hello World !!

    <script>
        const data1 = fetch("http://127.0.0.1:5000/endpoint1").then(res =>
        res.json()).then(data => console.log(data))

        const data2 = fetch("http://127.0.0.1:5000/endpoint2").then(res =>
        res.json()).then(data => console.log(data))
    </script>
</div>
```

Suppose you open the “index.html” in a browser. What will be the approximate time taken by the second fetch call (i.e., “http://127.0.0.1:5000/endpoint2”) to complete and log the data on the console?

Options :

6406532035375. ✖ 20 seconds

6406532035376. ✘ 30 seconds

6406532035377. ✘ 10 seconds

6406532035378. ✓ 50 seconds

Question Number : 271 Question Id : 640653609392 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following flask application.

app.py:

```
from flask import Flask
from flask_caching import Cache
import time

config = {
    "DEBUG": True,
    "CACHE_TYPE": "RedisCache",
    "CACHE_REDIS_URL": "redis://localhost:6379/1",
    "CACHE_DEFAULT_TIMEOUT": 300
}

app = Flask(__name__)
app.config.from_mapping(config)
cache = Cache(app)

@app.get('/name/<name>')
@cache.cached(timeout=100)
def get_name(name):
    time.sleep(30)
    return name

if __name__ == '__main__':
    app.run()
```

Suppose the application is running on "<http://localhost:5000>". If the client makes two requests to URL "<http://localhost:5000/name/mohan>" and "<http://localhost:5000/name/sohan>" within 50 seconds. What will be the approximate absolute difference between their latencies?

Options :

6406532035435. ❌ 30 Seconds

6406532035436. ❌ 40 Seconds

6406532035437. ✓ 0 Seconds

6406532035438. ❌ None of these

Question Number : 272 Question Id : 640653609394 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the below Vue application with markup file “index.html” and javascript file “app.js”.

index.html:

```
<div id="app"></div>
```

app.js:

```
new Vue({
  el: '#app',
  template: `<div>
    Enter a point: <input v-model='point' />
    <div id='content'>{{isOnCircle?"On the circle":"Not on the circle"}</div>
  </div>`,
  data: {
    point: null,
  },
  computed: {
    isOnCircle() {
      if (!this.point) {
        return false
      }
      const [x, y] = this.point.split(',')
      return x ** 2 + y ** 2 == 25
    },
  },
})
```

If the application is running on “<http://localhost:8080>”. What will be rendered by the browser in div with id “content” when user enters “3,4” in the input box?

Options :

6406532035443. ✓ On the circle

6406532035444. ❌ Not on the circle

6406532035445.

* true

6406532035446. * False

Question Number : 273 Question Id : 640653609396 Question Type : MCQ Is Question

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

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the below Vue application with markup file “index.html” and javascript file “app.js”.

index.html:

```
<div id="app"></div>
```

app.js:

```

const Home = {
  template: `<div> This is home <router-view /></div>` ,
}

const NotFound = {
  template: `<div>Not Found</div>` ,
}

const Students = {
  template: `<ul><li v-for='student in students'>{{student.name}}</li></ul>` ,
  data() {
    return {
      students: [
        { id: 1, name: 'std1', course: 'mad1' },
        { id: 2, name: 'std2', course: 'mad2' },
        { id: 3, name: 'std3', course: 'mad1' },
      ],
    }
  },
}
const Student = {
  template: `<div>Name: {{student.name}}, Course: {{student.course}}</div>` ,
  props: ['id'],
  computed: {
    student() {
      return Students.data().students.find((std) => {
        return std.id == (this.id % 3) + 1
      })
    },
  },
}
const router = new VueRouter({
  routes: [
    {
      path: '/',
      component: Home,
      children: [
        { path: '', component: Students },
        { path: 'student/:id', component: Student, props: true },
        { path: '*', component: NotFound },
      ],
    },
  ],
})
new Vue({
  el: '#app',
  template: `<div><router-view /></div>` ,
  router,
})

```

Suppose the application is running on "<http://localhost:8080>". What will be rendered by the browser inside the "router-view" component of "Home" Component for the URL "<http://localhost:8080/>"?

Options :

6406532035451. * Name: std1, Course: mad1

6406532035452.

✖ Name: std2, Course: mad2

6406532035453. ✖ Name: std3, Course: mad1

std1

std2

6406532035454. ✓ std3

Question Number : 274 Question Id : 640653609397 Question Type : MCQ Is Question

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

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the Vue application

index.html:

```
<div id="app"></div>
```

app.js:

```

const Home = {
  template: `<div> This is home <router-view /></div>` ,
}

const NotFound = {
  template: `<div>Not Found</div>` ,
}

const Students = {
  template: `<ul><li v-for='student in students'>{{student.name}}</li></ul>` ,
  data() {
    return {
      students: [
        { id: 1, name: 'std1', course: 'mad1' },
        { id: 2, name: 'std2', course: 'mad2' },
        { id: 3, name: 'std3', course: 'mad1' },
      ],
    }
  },
}
const Student = {
  template: `<div>Name: {{student.name}}, Course: {{student.course}}</div>` ,
  props: ['id'],
  computed: {
    student() {
      return Students.data().students.find((std) => {
        return std.id == (this.id % 3) + 1
      })
    },
  },
}
const router = new VueRouter({
  routes: [
    {
      path: '/',
      component: Home,
      children: [
        { path: '', component: Students },
        { path: 'student/:id', component: Student, props: true },
        { path: '*', component: NotFound },
      ],
    },
  ],
})
new Vue({
  el: '#app',
  template: `<div><router-view /></div>` ,
  router,
})

```

Suppose the application is running on "<http://localhost:8080>". What will be rendered by the browser inside the "router-view" of "Home" component for the URL "<http://localhost:8080/student/20>"?

Options :

6406532035455. ✖ Name: std1, Course: mad1

6406532035456. ✖ Name: std2, Course: mad2

6406532035457. ✓ Name: std3, Course: mad1

std1

std2

6406532035458. ✘ std3

Sub-Section Number : 6

Sub-Section Id : 64065387605

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 275 Question Id : 640653609376 Question Type : MSQ Is Question

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

Correct Marks : 4.5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the below Vue component and a Vuex store implementation.

```

const store = new Vuex.Store({
  state: {
    count: 0,
    total_cost: 0,
    products: [],
  },
  mutations: {
    update_total_cost : Placeholder2
  }
})

Vue.component("product", {
  template : `<div>
    Assume some code
    </div>` ,
  methods : {
    update_store_cost : function (count, price) {
      Placeholder1

    },
  }
})

```

You are supposed to invoke the mutation function “update_total_cost” from the method named “update_store_cost” of the Vue component “product”. The “update_total_cost” mutation function should update the store data variable “total_cost” with an appropriate value. The cost is the product of “count” and “price” parameters of the function “update_store_cost”. Assume that both these parameters are of Numeric type, and need not be typecasted.

Which of the following is/are the possible replacements for “placeholder1” and “placeholder2”?

Options :

Placeholder1 : this.\$store.commit("update_total_cost", count * price);
 Placeholder 2: function (state, total_cost) {
 state.total_cost = total.cost;
 }

6406532035371. ✓

6406532035372. ❌

```
Placeholder1 : this.$store.commit("update_total_cost", count, price);
Placeholder 2: function (state, count, price) {
    state.total_cost = count * price;
}
```

```
Placeholder1 : this.$store.commit("update_total_cost", {"count" : count, "price" : price});
Placeholder 2: function (state, payload) {
    state.total_cost = payload.count * payload.price;
}
```

6406532035373. ✓

```
Placeholder1 : this.$store.commit("update_total_cost", count, price);
Placeholder 2: function (count, price) {
    total_cost = count * price;
}
```

6406532035374. ✗

Question Number : 276 Question Id : 640653609378 Question Type : MSQ Is Question

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

Correct Marks : 4.5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the given 2 implementations.

Approach 1:

driver code:

```
import tasks
def generate_reports():
    users = User.query.all()
    for user in users:
        tasks.job_report.delay(user)
```

celery job:

```
@celery.task
def job_report(user):
    ...
    This function fetches the statistics of a given user and generates an
HTML report
    ...
```

Approach 2:

driver code:

```
import tasks
def generate_reports():
    tasks.job_report.delay()
```

celery job:

```
@celery.task
def job_report():
    users = User.query.all()
    for user in users:
        ...
        This loop fetches the statistics of a given user and generates an HTML
report
        ...
```

Suppose there are currently 1000 users in the database, and the application is supposed to generate 1000 HTML reports. Which of the following statement(s) is/are false (assuming there are more than 1 worker available in the celery system)?

Options :

6406532035379. ❌ Approach 1 will finish the task in less time than approach 2.

6406532035380. ✓ Approach 2 will finish the task in less time than approach 1.

6406532035381. ✓ Both the approaches will be comparable.

6406532035382. ❌ Both the approaches will be comparable if there is only 1 worker available.

Sub-Section Number : 7

Sub-Section Id : 64065387606

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 277 Question Id : 640653609379 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statement(s) is/are false regarding flask_caching and caching in general?

Options :

6406532035383. ❌ The cache decorator does not include the function parameters in the cache key.

6406532035384. ✓ The memoize decorator does not include the function parameters in the cache key.

6406532035385. ✓ The requests without request bodies are generally not cacheable.

6406532035386. ❌ Hard refreshing a web page clears the browser cache for that specific web page.

Question Number : 278 Question Id : 640653609385 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements is/are true?

Options :

The CORS mechanism allows a server to indicate which origins can load resources
6406532035407. ✓ from the server.

A server with address <http://example.com> will always allow scripts loaded from origin
6406532035408. ✗ <http://first.example.com> to load resources by default.

A server with address <http://example.com> will always allow scripts loaded from origin
6406532035409. ✓ <http://example.com/first> to load resources by default.

6406532035410. ✗ All of these

Question Number : 279 Question Id : 640653609387 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Suppose an application stores the scores of all the players in the "scores" table. The "scores" table has 3 columns namely, player_name, player_country and score. Suppose the URL "/scores/countries/<country_name>" returns the total score scored by all the players of a country with name "country_name". Which of the following strategies can be used to improve the performance of application?

Options :

6406532035415. ✓ Caching the total score by all players of a country on a backend server.

6406532035416. ✓ Caching the total score by all players of a country in the user's browser.

6406532035417. ✗ Caching will not improve the performance.

6406532035418. ✗ None of these.

Question Number : 280 Question Id : 640653609388 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statement(s) is/are true regarding short polling?

Options :

6406532035419. ✓ The client repeatedly sends a request to the server after a fixed interval of time.

6406532035420. ✓ The server sends the response immediately, even if the requested data is not available.

6406532035421. ✓ The response from server may be empty.

6406532035422. ✗ The response from the server cannot be empty.

Question Number : 281 Question Id : 640653609389 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements is/are true in context of lighthouse?

Options :

6406532035423. ✗ "First contentful paint" for a webpage is the size of the smallest visible element on a webpage.

6406532035424. ✓ "First contentful paint" for a webpage is the time the browser takes to paint the first visible content on the webpage.

6406532035425. ✓ "Largest contentful paint" for a webpage is the time the browser takes to paint the largest visible content on the webpage.

6406532035426. ❖ "Largest contentfull paint" for a webpage is the size of the largest visible content on the webpage.

MLP

Section Id :	64065341253
Section Number :	10
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	100
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387607
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 282 Question Id : 640653609399 Question Type : MCQ Is Question

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

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : MACHINE LEARNING PRACTICE (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 :

6406532035463. ✓ YES

6406532035464. ✗ NO

Sub-Section Number : 2

Sub-Section Id : 64065387608

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 283 Question Id : 640653609400 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 will be the output of the following code:

```
from sklearn.preprocessing import MaxAbsScaler
a = [[-3],[ 0],[-2],[ 2],[-1],[-4]]
mas = MaxAbsScaler()
scaled_a = mas.fit_transform(a)
print(scaled_a.min())
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Question Number : 284 Question Id : 640653609406 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 will be the numerical value in the output array of the following code:

```
import numpy as np
from sklearn.preprocessing import StandardScaler
from sklearn.impute import SimpleImputer
from sklearn.pipeline import Pipeline

X_train = [[1],[2],[3],[np.nan], [4], [np.nan], [5]]
pipe = Pipeline(steps = [('impute', SimpleImputer(strategy='mean')), ('scale', StandardScaler())])
pipe.fit(X_train)

print(pipe[0].statistics_)
```

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 : 64065387609

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 285 Question Id : 640653609401 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

Given below a y_train list which consists of coffee order's preference by the customers in a cafe.

```
y_train = [['large', 'cold'],
           ['small', 'cold'],
           ['small', 'hot'],
           ['large', 'hot']]
```

MultiLabelBinarizer from sklearn library has been used to convert the y_train into numbers, so which of the following option matches with the output of the following code ?

```
from sklearn.preprocessing import MultiLabelBinarizer
mlb = MultiLabelBinarizer(classes=['cold', 'hot', 'large', 'small'])
print(mlb.fit_transform(y_train))
```

Options :

6406532035466. ✓ [[1 0 1 0],[1 0 0 1],[0 1 0 1],[0 1 1 0]]

6406532035467. ✗ [[0 0],[1 0],[0 1],[1 1],[1 0],[0 0],[0 0],[0 0]]

6406532035468. ✗ [[1 0 1 0 0 1 0 0],[1 0 0 1 1 0 0 0]]

6406532035469. ✗ [[1 0][1 0],[1 0] [0 1],[0 1] [0 1],[0 1][1 0]]

Question Number : 286 Question Id : 640653609414 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following Python code snippet that demonstrates the use of GaussianNB from scikit-learn:

```
from sklearn.naive_bayes import GaussianNB
import numpy as np

X = np.array([[1.0, 2.0],
              [2.5, 3.5],
              [3.0, 5.0]])

y = np.array([0, 1, 0])

classifier = GaussianNB()
classifier.fit(X, y)

new_data = np.array([[2.0, 3.0]])

predicted_proba = classifier.predict_proba(new_data)
```

In the context of the code above, what information does the array predicted_proba contain?

Options :

6406532035506. ✘ The predicted classes for the new data points.

6406532035507. ✘ The decision boundary values for the classes.

6406532035508. ✓ The posterior probabilities of the classes for the new data points.

6406532035509. ✘ The likelihood estimates for the new data points.

Question Number : 287 Question Id : 640653609421 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 output of the following code?

```
corpus=['Bias is actually the error rate of the training data',
        'The difference between train and test error is called variance.']
from sklearn.feature_extraction.text import CountVectorizer
vectorizer = CountVectorizer()
vectors = vectorizer.fit_transform(corpus)
print (vectors.shape)
```

Options :

6406532035531. ✘ (15,2)

6406532035532. ✘ (2,3)

6406532035533. ✓ (2,15)

6406532035534. ✘ (15,3)

Question Number : 288 Question Id : 640653609427 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

You're working on a dataset containing customer purchase data, and you want to segment the customers into distinct groups based on their purchasing behavior. Each data point represents a customer and includes features like "Total Amount Spent" and "Number of Items Purchased."

Which algorithm is suitable for this scenario?

Options :

6406532035553. ✘ Linear Regression

6406532035554. ✘ Decision Tree

6406532035555. ✓ K-means Clustering

6406532035556. ✘ Support Vector Machine

Question Number : 289 Question Id : 640653609428 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

You're working with a dataset of geographical locations and want to group similar locations together based on their distances. The dataset includes latitude and longitude coordinates for each location. Which linkage method would be most appropriate for this

scenario?

Options :

6406532035557. ✓ Complete Linkage

6406532035558. ✗ Ward's Linkage

6406532035559. ✗ Single Linkage

6406532035560. ✗ Average Linkage

Question Number : 290 Question Id : 640653609429 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

You're analyzing a dataset of customer transaction histories. Each transaction includes the purchase amount and timestamp. You want to identify groups of customers based on their spending behavior. Which clustering approach would be most appropriate for this scenario?

Options :

6406532035561. ✓ Distribution-based Clustering

6406532035562. ✗ Density-based Clustering

Sub-Section Number : 4

Sub-Section Id : 64065387610

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 291 Question Id : 640653609404 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Given the following code snippet, which statement is true regarding the use of LabelEncoder?

```
from sklearn.preprocessing import LabelEncoder  
  
data = ["cat", "dog", "fish", "cat", "bird", "dog", "bird"]  
  
encoder = LabelEncoder()  
encoded_data = encoder.fit_transform(data)  
  
print(encoded_data)
```

Options :

6406532035478. ✓ encoded_data will contain only the values 0, 1, 2, and 3.

If ["elephant"] is passed to encoder.transform(), it will be successfully transformed to an integer.

6406532035479. ✗ LabelEncoder assigns higher integer values to more frequently occurring labels.

6406532035481. ✓ After calling encoder.inverse_transform([2]), the result will be "dog".

Question Number : 292 Question Id : 640653609417 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following estimators can implement the partial_fit method ?

Options :

6406532035515. ✓ MultinomialNB

6406532035516. ✗ RandomForestRegressor

6406532035517. ❌ LogisticRegressor

6406532035518. ✓ SGDRegressor

Question Number : 293 Question Id : 640653609420 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following option(s) are correct regarding regularization?

Options :

6406532035527. ❌ It is a technique used to minimize the adjusted loss function and avoid underfitting.

6406532035528. ✓ It helps in increasing the bias of the training model.

6406532035529. ❌ It determines the rows to be selected as a training dataset.

6406532035530. ✓ Elastic net regularization is a combination of L1 and L2 regularization both.

Sub-Section Number : 5

Sub-Section Id : 64065387611

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 294 Question Id : 640653609402 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

Given the following code snippet that preprocesses a dataset with both continuous and categorical features using sklearn.preprocessing tools, what will be the first row of the X transformed array after preprocessing?

```
import numpy as np
from sklearn.preprocessing import MinMaxScaler, OneHotEncoder
from sklearn.compose import ColumnTransformer

X = np.array([[2.0, 'apple'],
              [5.0, 'banana'],
              [1.0, 'apple'],
              [4.0, 'cherry']])

preprocessor = ColumnTransformer(
    transformers=[('num', MinMaxScaler(), [0]),
                  ('cat', OneHotEncoder(), [1])])

X_transformed = preprocessor.fit_transform(X)
print(X_transformed[0])
```

Options :

6406532035470. ✓ [0.25, 1, 0, 0]

6406532035471. ✗ [0.5, 0, 1, 0]

6406532035472. ✗ [0, 1, 0, 0]

6406532035473. ✗ [1, 0, 0, 1]

Question Number : 295 Question Id : 640653609403 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 code snippet:

```
from sklearn.datasets import fetch_california_housing
from sklearn.decomposition import PCA
from sklearn.preprocessing import StandardScaler, PolynomialFeatures
from sklearn.pipeline import Pipeline, FeatureUnion

data = fetch_california_housing()
X = data.data

polynomial_transform = PolynomialFeatures(degree=2, include_bias=False)
pca_transform = PCA(n_components=5)
scaler = StandardScaler()

combined_features = FeatureUnion([ ('poly', polynomial_transform),
    ('pca', pca_transform)])

pipeline = Pipeline([ ('features', combined_features),
    ('scaler', scaler)])

X_transformed = pipeline.fit_transform(X)
print(X_transformed.shape)
```

If the shape of X is (20640, 8), what will be the shape of X_transformed?

Options :

6406532035474. ✘ (20640, 8)

6406532035475. ✘ (20640, 5)

6406532035476. ✘ (20640, 44)

6406532035477. ✓ (20640, 49)

Question Number : 296 Question Id : 640653609405 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 main principle behind a dummy regressor's prediction strategy?

Options :

6406532035482. ✓ Predict the mean or median of the target variable for all instances.

6406532035483. ✗ Fit a complex mathematical function to the data.

6406532035484. ✗ Randomly shuffle the target variable values to make predictions.

6406532035485. ✗ Predict the sum of the input features for each instance.

Question Number : 297 Question Id : 640653609407 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 Python code snippet that demonstrates the use of StandardScaler from scikit-learn:

```
from sklearn.preprocessing import StandardScaler
import numpy as np

data = np.array([[2.0, 5.0],
                [4.0, 8.0],
                [6.0, 12.0]])

scaler = StandardScaler()
scaled_data = scaler.fit_transform(data)

print("Original data:\n", data)
print("\nScaled data:\n", scaled_data)
```

What does the code above achieve?

Options :

6406532035487. ✗ It converts the numerical values in the data array to categorical labels.

6406532035488. ✓ It standardizes the features in the data array to have zero mean and unit variance.

6406532035489. ✗ It applies a logarithmic transformation to the values in the data array.

6406532035490. ✗ It removes the mean and scales the features in the data array to a specific range.

Question Number : 298 Question Id : 640653609408 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

Choose the correct output of the following code?

```
data = [[1, 3],  
        [2, 4]]  
from sklearn.preprocessing import PolynomialFeatures  
pf = PolynomialFeatures(degree=3, interaction_only=True)  
print(pf.fit_transform(data))
```

Options :

6406532035491. ❌ [[1, 2, 3, 2, 4],
[1, 2, 4, 6, 8]]

6406532035492. ✓ [[1, 1, 3, 3],
[1, 2, 4, 8]]

6406532035493. ❌ [[1, 1, 3, 1, 3, 9, 1, 3, 9, 27],
[1, 2, 4, 4, 8, 16, 8, 16, 32, 64]]

6406532035494. ❌ [[1, 1, 2, 2, 3, 3, 4, 4],
[1, 1, 4, 4, 9, 9, 16, 16]]

Question Number : 299 Question Id : 640653609411 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 code snippet that employs LogisticRegression from sklearn on a feature matrix X and corresponding label vector y:

```
from sklearn.linear_model import LogisticRegression  
model = LogisticRegression(class_weight='balanced', C=0.5)  
model.fit(X, y)
```

Given the code above, which of the following statements is true?

Options :

The logistic regression model will give equal importance to both classes in an
6406532035497. ✘ imbalanced dataset.

6406532035498. ✘ The model does not use any regularization because the parameter C is set.

The model will perform equally well on both imbalanced and balanced datasets
6406532035499. ✘ due to the class_weight parameter.

6406532035500. ✓ The value of C indicates that the model will apply a regularization.

Question Number : 300 Question Id : 640653609412 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

After training a LogisticRegression model from sklearn.linear_model on a dataset, which of the following attributes gives the coefficients of the features in the decision function?

Options :

6406532035501. ✓ model.coef_

6406532035502. ✘ model.params_

6406532035503. ✘ model.intercept_

6406532035504. ✘ model.feature_weights_

Question Number : 301 Question Id : 640653609415 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

You're working on a binary classification problem where the dataset is relatively small, and you suspect that a linear decision boundary will work well due to distinct class separation. Additionally, you want to perform logistic regression with L1 regularization for improved feature selection. Which solver is most appropriate for this scenario?

Options :

6406532035510. ✘ Newton-CG

6406532035511. ✘ SGD

6406532035512. ✘ LBFGS

6406532035513. ✓ Liblinear

Question Number : 302 Question Id : 640653609430 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

You're building an 'MLPClassifier' for a dataset with a large number of features. The goal is to predict whether an online user will purchase a product based on their browsing behavior. You're trying to decide the appropriate number of neurons in the hidden layers of the neural network. Which statement about adjusting the hidden_layer_sizes parameter is correct?

Options :

6406532035563. ✘ Increasing the number of neurons in hidden layers will always lead to better model performance.

6406532035564. ✘ Decreasing the number of neurons in hidden layers reduces the model's capacity to capture complex patterns.

6406532035565. ✘ The number of neurons in hidden layers does not significantly affect the model's performance.

6406532035566. ✓ Finding the optimal number of neurons is a trial-and-error process and may require experimentation.

Question Number : 303 Question Id : 640653609431 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

You're designing an 'MLPClassifier' for an image recognition task. The dataset consists of grayscale images of animals. You want to introduce non-linearity to the neural network's architecture. Which element of the neural network architecture would you adjust to incorporate non-linearity in the model?

Options :

6406532035567. ✘ Number of hidden layers

6406532035568. ✘ Number of neurons in input layer

6406532035569. ✘ Learning rate

6406532035570. ✓ Activation function

Question Number : 304 Question Id : 640653609433 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

You're working on a binary classification task using the 'MLPClassifier' to predict whether a customer will make a purchase based on their browsing behavior. You're concerned about overfitting due to the complexity of the model. You decide to increase the 'alpha' parameter to control overfitting. The following code snippet shows the application of 'MLPClassifier':

```
from sklearn.neural_network import MLPClassifier
import numpy as np

data = np.array([[10, 3], [20, 5], [5, 1], [15, 4], [8, 2]])

# Corresponding target labels (0: No Purchase, 1: Purchase)
target = np.array([0, 1, 0, 1, 0])

# Initialize MLPClassifier with alpha parameter
clf = MLPClassifier(alpha=0.01, random_state=42)
clf.fit(data, target)

# Predict class labels
predicted_labels = clf.predict(data)
```

By setting the 'alpha' parameter to 0.01, how are you affecting the neural network model's behavior?

Options :

6406532035575. ❌ Increasing the model's complexity to fit the training data more closely.

6406532035576. ✓ Adding a stronger regularization term to the loss function, discouraging complex models.

6406532035577. ❌ Making the model more sensitive to outliers and noise in the data.

6406532035578. ❌ Adjusting the learning rate to control convergence speed.

Sub-Section Number : 6

Sub-Section Id : 64065387612

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 305 Question Id : 640653609409 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

For LinearRegression with equation $Y = W_0X_0 + W_1X_1 + W_2X_2 + \epsilon$

and given that $W_2 = \frac{5}{7} * W_1$ and $\epsilon = 0$. What will be the value of the W_1 for the below code? (Write 3 digits after the decimal)

Where X_1 and X_2 are column1 and column2 respectively and W_1 and W_2 are weights associated to the respected columns while fitting

```
from sklearn.linear_model import LinearRegression
X_train = [[0,0], [2,1.43], [4,2.86], [6,4.29]]
y_train = [0,1,2,3]
reg = LinearRegression(fit_intercept=False) #intercept=0
reg.fit(X_train,y_train)
print(reg.coef_[0])
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.327 to 0.333

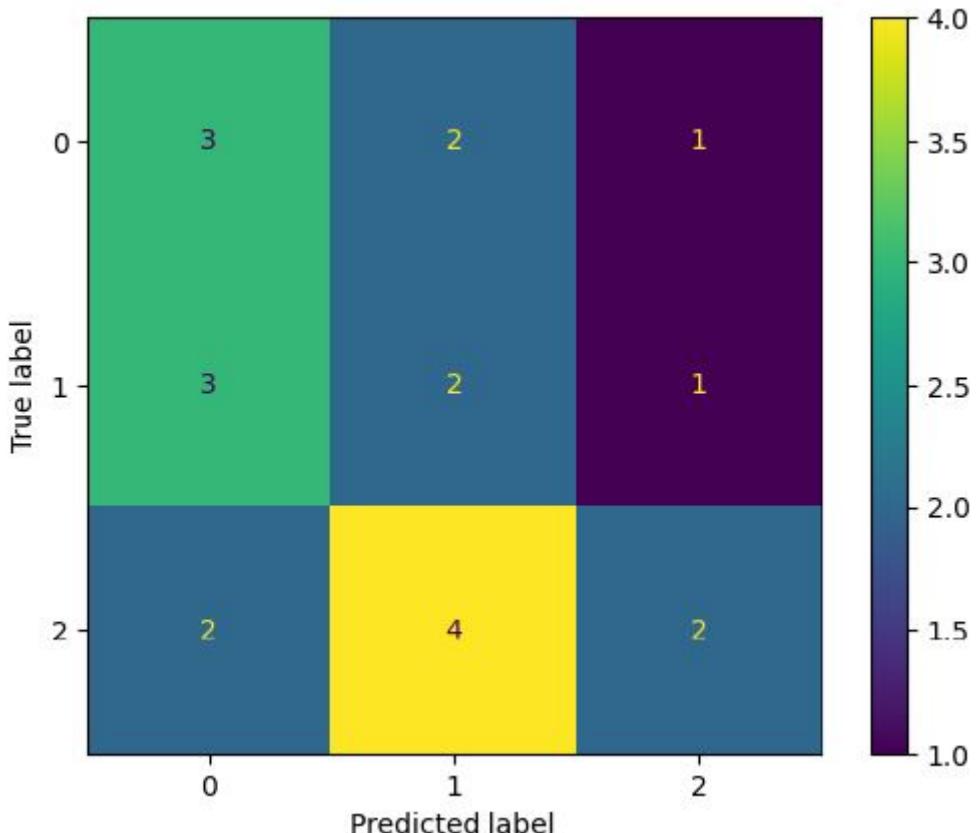
Question Number : 306 Question Id : 640653609410 Question Type : SA Calculator : None

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

Correct Marks : 3

Question Label : Short Answer Question

Using the confusion matrix given below. What is the precision score for the label (class) 1 ?



Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

0.25

Question Number : 307 **Question Id :** 640653609413 **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 output of the following code snippet?

```
from sklearn.linear_model import Perceptron
# Sample data
X = [[0, 0], [0, 1], [1, 0], [1, 1]]
y = [0, 0, 0, 1]

clf = Perceptron(tol=None, shuffle=False)
clf.fit(X, y)

print(clf.predict([[1, 1]]))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 308 **Question Id :** 640653609416 **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 code?

```
from sklearn.neighbors import KNeighborsClassifier
X = [[2,3], [5,6], [10, 11], [15,16], [20,21]]
y = [0, 1, 1, 1, 2]
knn = KNeighborsClassifier(n_neighbors=3,
                           metric='euclidean',
                           weights='uniform')

knn.fit (X, y)
print (knn.predict ([ [8,9]]))
```

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Sub-Section Number :	7
Sub-Section Id :	64065387613
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 309 Question Id : 640653609419 Question Type : MSQ Is Question

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

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements are true?

Options :

6406532035523. ✓ KNeighborsClassifier with low values of n_neighbors produces complex decision boundaries.

6406532035524. ✗ KNeighborsClassifier with low values of n_neighbors produces smooth decision boundaries.

6406532035525. ✓ In KNeighborsClassifier the scale of the features(columns) can impact the decision boundaries.

6406532035526. ✗ None of these

Sub-Section Number :	8
Sub-Section Id :	64065387614
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 310 Question Id : 640653609418 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Fill in the missing parameter value in the following estimator that can be used to classify the data

```
from sklearn.svm import SVC  
clf = SVC(kernel = _____)  
clf.fit(X, y)
```

Options :

6406532035519. ✘ 'lasso'

6406532035520. ✓ 'linear',

6406532035521. ✓ 'rbf',

6406532035522. ✘ 'scale'

Sub-Section Number : 9

Sub-Section Id : 64065387615

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 311 Question Id : 640653609422 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 code snippet where two decision trees are trained on the same dataset:

```
from sklearn.tree import DecisionTreeClassifier
from sklearn.datasets import load_iris

data = load_iris()
X, y = data.data, data.target

tree_1 = DecisionTreeClassifier(max_depth=None, min_samples_split=2,
                                min_samples_leaf=1)
tree_1.fit(X, y)

tree_2 = DecisionTreeClassifier(max_depth=3, min_samples_split=20,
                                min_samples_leaf=10)
tree_2.fit(X, y)
```

Given the configurations of tree_1 and tree_2, which decision tree is more likely to overfit the training data?

Options :

6406532035535. ✓ tree_1

6406532035536. ✗ tree_2

Question Number : 312 Question Id : 640653609423 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

Given the following code using BaggingClassifier with KNeighborsClassifier as the base estimator:

```
from sklearn.ensemble import BaggingClassifier
from sklearn.neighbors import KNeighborsClassifier

base_knn = KNeighborsClassifier(n_neighbors=5)

bag_clf = BaggingClassifier(base_knn, n_estimators=50, max_samples=0.5,
                            bootstrap=True, n_jobs=-1)
```

Which of the following statements is correct?

Options :

6406532035537. ✘ Bag_clf will throw an error as it only accepts decision tree classifiers as base classifiers.

6406532035538. ✘ Each base KNN classifier will be trained on the entire dataset.

6406532035539. ✓ The `max_samples=0.5` parameter means each base estimator in the ensemble is trained on 50% of the training samples.

6406532035540. ✘ The ensemble will use sequential computation due to `n_jobs=-1`.

Question Number : 313 Question Id : 640653609424 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

You're using a `RandomForestClassifier` from `sklearn` for a multi-class classification problem. You want to ensure diversity among the trees to avoid overfitting and increase robustness. Which combination of parameter settings would contribute MOST to achieving this objective?

Options :

6406532035541. ✘ Setting `n_estimators` to 10, `max_depth` to 3, and using `criterion='entropy'`.

6406532035542. ✘ Increasing the value of `n_estimators`, setting `max_features` to a value less than the total number of features, and setting `bootstrap` to False.

6406532035543. ✓ Setting `n_estimators` to a high value, using `criterion='gini'`, and setting `max_samples` to a value less than the total number of samples.

Setting `max_depth` to None, `min_samples_split` to 2, and `min_samples_leaf` to 1.

6406532035544. ✘

Question Number : 314 Question Id : 640653609425 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

You're using a `DecisionTreeClassifier` from `sklearn.tree` to build a classification model. Which of the following statements is MOST accurate regarding the parameters and attributes of this classifier?

Options :

The `max_depth` parameter ensures that the tree is pruned to have a maximum depth, while the `tree_.max_depth` attribute retrieves the depth of the actual tree that was built.

6406532035545. ✓

Setting `min_samples_split` to a value greater than 2 can prevent the tree from splitting on features that have very minimal influence, but this guarantees that all leaf nodes will contain fewer samples than this value.

6406532035546. ✘

The `criterion='entropy'` parameter means that the decision tree will split nodes to maximize information gain, while the `tree_.impurity` attribute retrieves the impurity of the root node.

6406532035547. ✘

If the `class_weight` parameter is set to 'balanced', the decision tree will always have balanced classes in its leaf nodes.

6406532035548. ✘

Question Number : 315 Question Id : 640653609426 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**

You're aiming to optimize an AdaBoostClassifier that uses a DecisionTreeClassifier as its base estimator. You decide to use GridSearchCV from sklearn.model_selection to search for the best hyperparameters. In the given parameter grids for GridSearchCV, parameters n_estimators and learning_rate are meant for the 'AdaBoost Classifier', while the others are for the 'DecisionTreeClassifier'. Which of the following sets of parameters is the MOST comprehensive in testing the capabilities of both the 'AdaBoost- Classifier' and its base estimator?

Options :

{'AdaBoostClassifier_n_estimators': [50, 100, 150],
 'AdaBoostClassifier_learning_rate': [0.01, 0.1, 1]}

6406532035549. ✘

{'max_depth': [1, 2, 3],
 'n_estimators': [50, 100],
 'learning_rate': [0.01, 0.1, 1]}

6406532035550. ✘

{'DecisionTreeClassifier_criterion': ['gini', 'entropy'],
 'DecisionTreeClassifier_splitter': ['best', 'random'],
 'n_estimators': [50, 100],
 'learning_rate': [0.1, 1]}

6406532035551. ✘

{'base_estimator__max_depth': [1, 2, 3],
 'base_estimator__criterion': ['gini', 'entropy'],
 'n_estimators': [30, 50],
 'learning_rate': [0.05, 0.1, 0.5]}

6406532035552. ✓

Question Number : 316 Question Id : 640653609432 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

You're working with a dataset of customer purchase behavior, including attributes "Total Amount Spent" and "Number of Items Purchased." You decide to use K-means clustering to segment customers into groups based on these features. The following code snippet demonstrates the K-means clustering process:

```
from sklearn.cluster import KMeans
import numpy as np

data = np.array([[150, 6], [300, 12], [50, 2], [250, 8], [80, 3]])

# Initialize KMeans with 3 clusters
kmeans = KMeans(n_clusters=3)
kmeans.fit(data)

# Predict cluster labels
labels = kmeans.labels_

# Centroid coordinates of clusters
centroids = kmeans.cluster_centers_
```

Based on the given code and the nature of the dataset, what does the variable 'labels' represent?

Options :

6406532035571. ✘ The total amount spent by each customer.

6406532035572. ✓ The cluster assignments indicating which group each customer belongs to.

6406532035573. ✘ The number of items purchased by each customer.

6406532035574. ✘ The centroid coordinates of the clusters formed.

TDS

Section Id :	64065341254
Section Number :	11
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	62
Number of Questions to be attempted :	62

Section Marks :	70
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387616
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 317 Question Id : 640653609434 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "[DIPLOMA LEVEL : TOOLS IN DATA SCIENCE \(COMPUTER BASED EXAM\)](#)"

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 :

6406532035579. ✓ YES

6406532035580. ✗ NO

Sub-Section Number :	2
Sub-Section Id :	64065387617
Question Shuffling Allowed :	Yes

Is Section Default? :

null

Question Number : 318 Question Id : 640653609435 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 dataset consists of geographic, demographic information about countries and their respective GDPs. You would like to visualize this data and study the relationship between the location of countries and their GDPs. You decide to use Power BI to visualize the dataset. But you would also like to generate a summary of the data. Choose the most suitable answer among the given options.

Options :

6406532035581. ❌ The summary can be generated using Quill and this is possible because Quill can be used as an extension in Power BI.

6406532035582. ❌ Quill can only be used for visualization. Therefore a summary of the dataset cannot be generated.

6406532035583. ❌ Power BI does not support generation of summary. Therefore using other visualization tools such as Tableau would work.

6406532035584. ✓ None of the options are appropriate for the generation of summary for the given question.

Question Number : 319 Question Id : 640653609436 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

Your project requires you to study the districts and their respective health indicators. You have a shapefile with you that provides the required details. The objective of the project is to identify and carve out districts that present high levels of health indicators. Choose the most suitable answer

among the given options.

Options :

6406532035585. ✓ QGIS can be used to create the shapefiles for districts with high levels of health indicators.

6406532035586. ✗ While QGIS can be used to create shapefiles for the requirement, it cannot be used to identify the districts with high levels of health indicators.

6406532035587. ✗ QGIS cannot be used to meet the objectives of the project.

6406532035588. ✗ None of the options are suitable to meet the objectives of the project.

Question Number : 320 Question Id : 640653609437 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

What are the two outputs provided by the Excel Azure Machine Learning plugin?

Options :

6406532035589. ✗ Percentage, Score

6406532035590. ✗ Sentiment, Percentage

6406532035591. ✓ Sentiment, Score

6406532035592. ✗ Score, Labels

Question Number : 321 Question Id : 640653609440 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 dataset consists of year, annual cotton production, annual rainfall, loan interest rates and fuel prices. You would like to compute the correlation coefficient between annual cotton production

and other variables in the dataset to analyze the effects of various variables on the target variable. Choose the most suitable option among the following choices:

Options :

6406532035601. ❌ Excel cannot be used to compute correlation coefficients. Although we can use excel to visualize the data using scatter plots to study the relationships.

6406532035602. ❌ The CORREL() function in Excel is not suitable for this analysis because it doesn't take more than two variables as inputs.

6406532035603. ❌ Correlation coefficients cannot be computed for continuous variables.

6406532035604. ✓ None of the options are appropriate.

Question Number : 322 Question Id : 640653609441 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

You would like to prepare your dataset before analysis. You choose python pandas-profiling library to perform exploratory analysis. Choose the most suitable option among the given choices:

Options :

6406532035605. ❌ Your choice of pandas-profiling library is not appropriate because it does not provide information about outliers.

6406532035606. ✓ Your choice is appropriate because the pandas-profiling library provides information about outliers.

6406532035607. ❌ pandas-profiling library is appropriate because it helps build models.

Question Number : 323 Question Id : 640653609443 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

Comicgen is a useful tool in narrating data stories using comics. Which of the following is not a function of comicgen?

Options :

6406532035612. ❌ Comicgen creates comic characters

6406532035613. ❌ Comicgen provides options to custom create different comic characters and their emotions and pose

6406532035614. ❌ Comicgen can be easily integrated into Google sheets or Excel to narrate your data stories

6406532035615. ✓ You can type in your data story into comicgen to get your comic in return

Question Number : 324 Question Id : 640653609444 Question Type : MCQ Is Question

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

Correct Marks : 1

Question Label : Multiple Choice Question

A very large Matrix **A** has a lot of zero entries in it. Which function from the *scipy* library is useful in efficient storage of such a matrix **A**?

Options :

6406532035616. ❌ compressed_mat

6406532035617. ❌ comp_mat

6406532035618. ✓ csr_matrix

6406532035619. ❌ zip_mat

Question Number : 325 Question Id : 640653609445 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 libraries has functions and tools that are useful in the analysis of large graphs?

Options :

6406532035620. ✓ scikit-network

6406532035621. ✗ pandas-network

6406532035622. ✗ numpy-network

6406532035623. ✗ pd-network

Question Number : 326 Question Id : 640653609446 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

Kumu is a tool that allows you to:

Options :

6406532035624. ✗ Visualize project management charts

6406532035625. ✗ create stunning dashboards for large projects

6406532035626. ✗ merge Comicgen characters into a comic

6406532035627. ✓ Visualize complex network data

Question Number : 327 Question Id : 640653609447 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 libraries has functions extensively written to extract data from Wikipedia pages?

Options :

6406532035628. ✘ BeautifulSoup

6406532035629. ✘ wikimedia

6406532035630. ✓ wikipedia

6406532035631. ✘ wiki_scrape

Question Number : 328 Question Id : 640653609448 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A dataset provided to you has information about countries and respective populations. You plan to visualize the data in Tableau using the map representation. But you are unable to do so because the map representation is not activated for you to choose. What might be the issue?

Provided below is a snapshot of the dataset column names and types. Choose the most appropriate option that would solve the problem.

Column Name	Column Type
Country	String
Population	Integer

Options :

6406532035632. ✘ The provided dataset is incomplete

6406532035633. ✘ We also need Latitude and Longitude information to activate the map representation

6406532035634. ✓ There might be column type incompatibility issues

6406532035635. ✘ The given information provided would not have caused any issues. It is sufficient for map representation

Question Number : 329 Question Id : 640653609450 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

_____ is helpful to understand the structure of (or inspect) a website before writing a scraping script.

Options :

6406532035638. ❌ BeautifulSoup

6406532035639. ✓ Developer Tools

6406532035640. ❌ Airflow

6406532035641. ❌ Pycaret

Question Number : 330 Question Id : 640653609451 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

_____ library has tools to get a webpage's html contents into Python.

Options :

6406532035642. ❌ BeautifulSoup

6406532035643. ❌ numpy

6406532035644. ✓ requests

6406532035645. ❌ get

Question Number : 331 Question Id : 640653609453 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

Type of location (tourist/historic/etc.) can be retrieved using Nominatim in Python

Options :

6406532035650. ✓ TRUE

6406532035651. ✗ FALSE

Question Number : 332 Question Id : 640653609454 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 delimiters cannot be used in text-to-column function in Excel?

Options :

6406532035652. ✗ Comma (,)

6406532035653. ✗ Tab (\t)

6406532035654. ✗ Semi colon (;)

6406532035655. ✗ Tilde (~)

6406532035656. ✓ None of these

Question Number : 333 Question Id : 640653609455 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

What is the y-axis in autocorrelation plot?

Options :

6406532035657. ✓ Correlation

6406532035658. ✗ Covariance

6406532035659. ✗ Standard deviation

6406532035660. ✗ Variance

6406532035661. ✗ None of these

Question Number : 334 Question Id : 640653609456 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 tools cannot be used for anonymising the data?

Options :

6406532035662. ✗ Anonimatron

6406532035663. ✗ ARX anonymization tool

6406532035664. ✓ PowerBI

6406532035665. ✗ Amnesia

6406532035666. ✗ sdcMicro

Question Number : 335 Question Id : 640653609457 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

For a one-time anonymization, static anonymization is sufficient. Is this statement true or false?

Options :

6406532035667.

✓ TRUE

6406532035668. ✗ FALSE

Question Number : 336 Question Id : 640653609462 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

We have a variable X, which can take values AA, BB, or CC. The first 4 values of this variable in a dataset are CC, AA, BB, AA. This information is represented as shown below.

AA	BB	CC
0	0	1
1	0	0
0	1	0
1	0	0

To convert a variable to this format in Python, one can use:

Options :

6406532035681. ✓ `pandas.get_dummies`

6406532035682. ✗ `from sklearn.preprocessing import BinaryEncoder`

6406532035683. ✗ `import numpy as np`

6406532035684.

* import seaborn as sb

Question Number : 337 Question Id : 640653609463 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

k-means is typically influenced by the start values. What option in sklearn.cluster.KMeans helps reduce the impact?

Options :

6406532035685. ✘ verbose

6406532035686. ✘ algorithm

6406532035687. ✓ n_init

6406532035688. ✘ init

Question Number : 338 Question Id : 640653609464 Question Type : MCQ Is Question

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

Correct Marks : 1

Question Label : Multiple Choice Question

A Pandas dataframe *DF* has a column named *salary_range* which contains the salary details of 10000 employees of a firm binned as *medium*, *high*, and *very high*. You are interested in finding out the number of employees in each category of *salary_range*. Which of the following commands will help you to achieve this goal?

Options :

6406532035689. ✘ DF['salary_range'].bin_count()

6406532035690. ✓ DF['salary_range'].value_counts()

6406532035691. ✘ DF\$'salary_range.bin_count()'

6406532035692. ✘ DF\$'salary_range.value_counts()

Question Number : 339 Question Id : 640653609465 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

Scikit-learn has a DecisionTreeClassifier module that is useful in building decision tree classifiers. Suppose, our dataset is imbalanced in class. Which feature in the DecisionTreeClassifier() will help us tackle this problem?

Options :

6406532035693. ✘ random_state

6406532035694. ✘ min_sample_split

6406532035695. ✘ class_balance

6406532035696. ✓ class_weight

Question Number : 340 Question Id : 640653609466 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

We have predictions (y_{hat}) on a train dataset of 100 records. Let y be the true value. We are interested in calculating $\text{Sum}_{i=1 \text{ to } 100} |y_i - y_{\text{hat},i}| / 100$. Which of the following functions will help you in achieving this easily?

Options :

6406532035697. ✓ from sklearn.metrics import mean_absolute_error

6406532035698. ✘ from sklearn.metrics import median_absolute_error

6406532035699. ✘ from sklearn.metrics import median_absolute_percentage_error

6406532035700. ✘ from sklearn.metrics import average_absolute_percentage_error

Question Number : 341 Question Id : 640653609467 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

We are interested in fitting an ARIMA model to our time series data. Specifically, we are interested in a moving average model of 0, setting a lag value of 4 for autoregression, and a difference order of 1. Which of the following gives you such a model?

Options :

6406532035701. ✘ ARIMA(..., trend = (4,1,0))

6406532035702. ✓ ARIMA(..., order = (4,1,0))

6406532035703. ✘ ARIMA(..., order = (0,4,1))

6406532035704. ✘ ARIMA(..., trend = (0,4,1))

Question Number : 342 Question Id : 640653609468 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

pycaret is a

Options :

6406532035705. ✘ Visualization tool

6406532035706. ✘ Dashboard helper

6406532035707. ✓ low-code machine learning library

6406532035708. ✘ Data cleaning solution

Question Number : 343 Question Id : 640653609469 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

subjectivity and *polarity* are two properties returned by the sentiment function of library:

Options :

6406532035709. ❌ TextBulb

6406532035710. ❌ NLPtext

6406532035711. ✓ TextBlob

6406532035712. ❌ NLP

Question Number : 344 Question Id : 640653609470 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A subjectivity score of 0.8 means that the text statement:

Options :

6406532035713. ❌ has a positive sentiment

6406532035714. ❌ has a negative sentiment

6406532035715. ✓ is more of an opinion statement

6406532035716. ❌ is more of a factual statement

Question Number : 345 Question Id : 640653609471 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 1

Question Label : Multiple Choice Question

A *polarity* score of negative 0.5 means that the text statement:

Options :

6406532035717. ✘ has a positive sentiment

6406532035718. ✓ has a negative sentiment

6406532035719. ✘ is more of an opinion statement

6406532035720. ✘ is more of a factual statement

Question Number : 346 Question Id : 640653609472 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

You are working on a piece of code that classifies different fruits into its respective groups (citrus, berries, melons, apples & pears, and tropical & exotic). Which of the following loss functions from Keras would you pick for the task?

Options :

6406532035721. ✘ binary_crossentropy

6406532035722. ✓ categorical_crossentropy

6406532035723. ✘ mean_squared_error

6406532035724. ✘ mean_absolute_error

Question Number : 347 Question Id : 640653609473 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

classification_report function from the `sklearn.metrics` module

Options :

6406532035725. ✘ builds a decision tree classifier and prints the accuracy of the classifier

6406532035726. ✘ reports the root mean square error of the model

6406532035727. ✘ runs different classification models and compares the results

6406532035728. ✓ builds a text report displaying the main classification metrics

Question Number : 348 Question Id : 640653609474 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

csr_matrix from the `scipy` library:

Options :

6406532035729. ✘ always helps reduce matrix space

6406532035730. ✓ helps reduce matrix space when there are a lot of zero entries in the matrix

6406532035731. ✘ helps reduce matrix space when there are a lot of negative entries in the matrix

6406532035732. ✘ makes matrix multiplication more meaningful and powerful

Question Number : 349 Question Id : 640653609476 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

Google Studio is a tool that allows you to

Options :

6406532035737.

* merge Comicgen characters into a comic

6406532035738. * visualize complex network data

6406532035739. ✓ create dashboards for small scale projects

6406532035740. * Edit photographs and videos

Question Number : 350 Question Id : 640653609477 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 tabs is used to identify API calls in the Inspect element in any browser?

Options :

6406532035741. ✓ Network

6406532035742. * Elements

6406532035743. * Console

6406532035744. * Sources

Question Number : 351 Question Id : 640653609478 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 libraries is used to construct API urls?

Options :

6406532035745. ✓ Urllib

6406532035746. * BeautifulSoup

6406532035747.

❖ Requests

6406532035748. ❖ Pandas

Question Number : 352 Question Id : 640653609479 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 final output from the BBC Weather Location Service API is in JSON format:

Options :

6406532035749. ✓ TRUE

6406532035750. ❖ FALSE

Question Number : 353 Question Id : 640653609480 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 excel charts is the most suitable for detecting outliers in the data?

Options :

6406532035751. ❖ Bar chart

6406532035752. ❖ Line chart

6406532035753. ✓ Box and Whisker chart

6406532035754. ❖ Histogram

Question Number : 354 Question Id : 640653609482 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 features in excel enables you to scrape data from websites?

Options :

6406532035757. ❌ Data Analysis Toolpak

6406532035758. ❌ Connections

6406532035759. ❌ Data Validation

6406532035760. ✓ None of these

Question Number : 355 Question Id : 640653609483 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

Assume the data provided to you has a column that consists of sales dates. You would want to extract the week number from the column for further analysis.

Which among the following excel function enables you to perform the above-mentioned task?

Options :

6406532035761. ❌ WEEKGET()

6406532035762. ❌ GETWEEKNUM()

6406532035763. ✓ WEEKNUM()

6406532035764. ❌ NUMWEEK()

Question Number : 356 Question Id : 640653609484 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 data consists of caloric intake, weight and BMI of individuals. To compute the correlation coefficients between these three variables, excel 'data analysis toolpak' requires you to specify the input variables and target variables.

Options :

6406532035765. ✘ TRUE

6406532035766. ✓ FALSE

Question Number : 357 Question Id : 640653609485 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

What is the purpose of using the "find" method in Beautiful Soup?

Options :

6406532035767. ✘ To locate all instances of a particular HTML tag in a document.

6406532035768. ✘ To retrieve the text content of a specific HTML element.

6406532035769. ✘ To extract the value of a particular attribute of an HTML tag.

6406532035770. ✓ To search for a tag with a specific name or id within an HTML document.

Question Number : 358 Question Id : 640653609486 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 is true about the k-means clustering algorithm?

Options :

6406532035771. ✘ It is a supervised learning algorithm.

6406532035772. ✘ It is only applicable for datasets with a small number of features.

6406532035773. ✓ It is sensitive to the initial choice of centroids.

6406532035774. ✘ It is not suitable for datasets with categorical variables.

Question Number : 359 Question Id : 640653609488 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

Nominatim api can be used to find the type of place for a given latitude and longitude.

Options :

6406532035779. ✓ TRUE

6406532035780. ✘ FALSE

Question Number : 360 Question Id : 640653609489 Question Type : MCQ Is Question

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

Correct Marks : 1

Question Label : Multiple Choice Question

A time series with a significant autocorrelation at lag 1 implies that:

Options :

6406532035781. ✓ The current observation is correlated with the previous observation

6406532035782. ✘ The current observation is correlated with the observation two time steps ago

6406532035783. ✘ The current observation is correlated with the observation three time steps ago

6406532035784. ✘ None of these

Question Number : 361 Question Id : 640653609490 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 sentiment analysis function in TextBlob

Options :

6406532035785. ✘ Classifies text as either positive or negative

6406532035786. ✘ Classifies text into multiple categories of sentiment

6406532035787. ✓ Calculates a numerical score for the sentiment of the text

6406532035788. ✘ None of these

Question Number : 362 Question Id : 640653609491 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

From the below options identify the correct one that provides explanation of the file structure in Tableau

1. worksheet	a. contains a sequence of worksheets or dashboards that work together to convey information.
2. dashboard	b. contains a single view along with shelves, legends, and the Data pane.
3. story	c. is a collection of views from multiple worksheets.

Options :

6406532035789. ✘ 1a,2b,3c

6406532035790. ✓ 1b,2c,3a

6406532035791. ✘ 1c,2a,3b

6406532035792. ✘ 1a,3c,2b

Question Number : 363 Question Id : 640653609492 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 join used below



Options :

6406532035793. ✘ Outer

6406532035794. ✘ Left

6406532035795. ✓ Inner

6406532035796. ✘ Right

Question Number : 364 Question Id : 640653609494 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 attribute does not belong to the category of data while categorizing data based on specifics of the disclosure risks from which a dataset is to be protected?

Options :

6406532035801. ✘ Identifying attributes

6406532035802. ✘ Quasi-identifying attributes

6406532035803. ✘ Sensitive attributes

6406532035804. ✘ Insensitive attributes

6406532035805. ✓ Non identifying attributes

Question Number : 365 Question Id : 640653609495 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

One of the methods of removing outliers for continuous data is:

Options :

6406532035806. ✓ IQR analysis

6406532035807. ✘ EQR analysis

6406532035808. ✘ OQR analysis

6406532035809. ✘ None of these

Question Number : 366 Question Id : 640653609496 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

You decided to encode a categorical variable using one-hot encoding. What happens to your dataframe when it is done:

Options :

6406532035810. ✓ Number of columns will increase

6406532035811. ✘ Number of rows will increase

6406532035812. ✘ Both rows and columns will increase

6406532035813. ✘ None of these

Question Number : 367 Question Id : 640653609497 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

_____ table in Excel is a way of quickly summarizing your data

Options :

6406532035814. ✓ Pivot table

6406532035815. ✘ Pilot table

6406532035816. ✘ Summary table

6406532035817. ✘ Summarize table

Sub-Section Number : 3

Sub-Section Id : 64065387618

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 368 Question Id : 640653609438 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

Provided below is an incomplete code snippet that enables you to compute distance between two locations. Choose the most appropriate option that can be used in place of <missing line> to compute the distance. Assume the coordinates of location one is stored in the variable "location1" and the coordinates of location 2 is stored in the variable "location2".

Code Snippet:

```
distances_km = []

for row in df.itertuples(index=False):
    distances_km.append(
        <missing line>
    )
df['Distance'] = distances_km
df.head(10)
```

Options :

6406532035593. ✘ geopy.distance(location1, location2).km

6406532035594. ✘ geopy.distance(location1, location2)

6406532035595. ✓ geopy.distance.distance(location1, location2).km

6406532035596. ✘ geopy.distance.distance.distance(location1_coord, location2_coord).km

Question Number : 369 Question Id : 640653609439 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

Provided below is a snippet of the code block of HTML tags from a website providing weather forecast. Your goal is to scrape the high and low values for the 10-day temperature forecast.

```
<div class="wr-day-temperaturehigh">
    <span class="wr-day-temperature__high-label wr-hide-visually">High</span>
        <span class="wr-day-temperature__high-value">
            <span class="wr-value--temperature ">
                <span class="wr-value--temperature--c">31°</span>
                <span class="wr-hide"> </span>
                <span class="wr-value--temperature--f">87°</span>
            </span>
        </span>
    </div>
<div class="wr-day-temperaturelow">
    <span class="wr-day-temperature__low-label wr-hide-visually">Low</span>
        <span class="wr-day-temperature__low-value">
            <span class="wr-value--temperature ">
                <span class="wr-value--temperature--c">21°</span>
                <span class="wr-hide"> </span>
                <span class="wr-value--temperature--f">71°</span>
            </span>
        </span>
    </div>
```

Also provided below, is the python code to extract values from the tags. But the tags represented as <A> and are missing. Choose the most appropriate tag that will get you the high and low values for the 14-day temperature forecast.

```
#Daily High Values
daily_high_values = soup.find_all('span', attrs={'class': '<B>'})
```

```
#Daily Low Values
daily_low_values = soup.find_all('span', attrs={'class': '<A>'})
```

Options :

6406532035597. ✘ <A> = wr-value--temperature--f
6406532035597. ✘ = wr-value--temperature--c

6406532035598. ✘ <A> = wr-value--temperature--c
6406532035598. ✘ = wr-value--temperature--c

6406532035599. ✓ <A> = wr-day-temperaturelow
6406532035599. ✓ = wr-day-temperaturehigh

<A> = low-label wr-hide-visually

6406532035600. ❌ = high-label wr-hide-visually

Question Number : 370 Question Id : 640653609442 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 given piece of code extracts and displays details of **9 scheduled airlines** in India. Identify which block of code executes without any errors.

Options :

```
import requests

import pandas as pd

from bs4 import BeautifulSoup
website_url =
requests.get('https://web.archive.org/web/20220603020500/https://en.
wikipedia.org/wiki/List_of_airlines_of_India').text

soup = BeautifulSoup(website_url,'html.parser')

required_table = soup.find_all('table')[0]
df = pd.read_html(str(required_table))

df=pd.DataFrame(df[0])

df
```

6406532035608. ✓

6406532035609. ❌

```
import requests
import pandas as pd

from bs4 import BeautifulSoup
website_url =
requests.get('https://web.archive.org/web/20220603020500/https://en.
wikipedia.org/wiki/List_of_airlines_of_India').text

required_table = soup.find_all('table')[1]

df = pd.read_html(str(required_table))

df=pd.DataFrame(df[0])

df
```

```
import get

import pandas as pd

from bs4 import BeautifulSoup
website_url = get.requests
('https://web.archive.org/web/20220603020500/https://en.wikipedia.or
g/wiki/List_of_airlines_of_India').text

soup = BeautifulSoup(website_url,'html.parser')

df = pd.read_html(str(required_table))

df=pd.DataFrame(df[0])
```

6406532035610. ✖ df

```
import requests
import pandas as pd

from bs4 import BeautifulSoup

soup = BeautifulSoup(website_url,python.html')

required_table = soup.find_all('table')[0]

df = pd.read_html(str(required_table))

df=pd.DataFrame(df[0])
```

6406532035611. ✖ df

Question Number : 371 Question Id : 640653609449 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

Logical calculations in tableau helps to determine if a certain condition is true or false. Is the following expression valid ?

```
IF [Profit] > 0 THEN 'Profitable' ELSEIF [Profit] = 0 THEN  
'Breakeven' ELSE 'Loss'
```

Options :

6406532035636. ✘ TRUE

6406532035637. ✓ FALSE

Question Number : 372 Question Id : 640653609452 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 code blocks will get you the latitude and longitude of "IIT Madras"?

Assume the Nominatim library is imported using the command given below:

```
from geopy.geocoders import Nominatim
```

Options :

```
location = locator.geocode("IIT Madras, Chennai, India")  
print("Latitude = {}, Longitude = {}".format(location.latitude,  
6406532035646. ✘ location.longitude))
```

```
locator = Nominatim(user_agent="myGeocoder")  
location = locator.geocode("IIT Madras, Chennai, India")  
6406532035647. ✘ print("Latitude = {}, Longitude = {}")
```

```
locator = Nominatim(user_agent="myGeocoder")
location = locator.geocode("IIT Madras, Chennai, India")
print("Latitude = {}, Longitude =
6406532035648. ✓ {}".format(location.latitude, location.longitude))
```

```
locator = Nominatim(user_agent="myGeocoder")
print("Latitude = {}, Longitude =
6406532035649. ✗ {}".format(location.latitude, location.longitude))
```

Question Number : 373 Question Id : 640653609461 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

We have a variable X, which can take values AA, BB, or CC. The first 4 values of this variable in a dataset are CC, AA, BB, AA. The format of representing this information as shown in the table below is called:

AA	BB	CC
0	0	1
1	0	0
0	1	0
1	0	0

Options :

6406532035677. ✗ multi - col format

6406532035678. ✓ one - hot encoding

6406532035679. ✗ long format

6406532035680. ✗ integer

Question Number : 374 Question Id : 640653609481 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

Provided below is a snapshot of the dataset which consists of movie reviews and respective labels.

	A	B
1	review	sentiment
2	One of the other reviewers has	positive
3	A wonderful little production. <	positive
4	I thought this was a wonderful v	positive
5	Basically there's a family where	negative
6	Petter Mattei's "Love in the Tim	positive
7	Probably my all-time favorite m	positive
8	I sure would like to see a resurr	positive
9	This show was an amazing, fresh	negative
10	Encouraged by the positive com	negative
11	If you like original gut wrenchin	positive

To compute the sentiment scores the Azure Machine Learning add-in requires input and output values. In the figure provided below the input and output cells need to be populated with appropriate values to obtain sentiment scores.

2. PREDICT

Input: input1

Type range or click button to select 

My data has headers

[Use sample data](#)



Output: output1

Enter output cell (e.g. A20)

Include headers

Choose the most appropriate option that enables you to predict sentiment scores using the Excel Azure Machine Learning add-in.

Options :

Input: Sheet1!A1:A11

6406532035755. ✓

Output: Sheet!C1

Input: Sheet1!B1:B11

6406532035756. ✗

Output: Sheet!C1

Question Number : 375 Question Id : 640653609493 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 Streamlit, how do you create the following image

[assumption : import streamlit as st]

Hobbies:

Dancing

Dancing

Reading

Sports

Options :

6406532035797. ✓ st.selectbox("Hobbies: ",['Dancing','Reading','Sports'])

6406532035798. ✗ st.selectbox("Hobbies: ",{'Dancing','Reading','Sports'})

6406532035799. ✗ st.write("Hobbies: ",['Dancing','Reading','Sports'])

6406532035800. ✗ None of these

Sub-Section Number : 4

Sub-Section Id : 64065387619

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 376 Question Id : 640653609475 Question Type : MSQ Is Question

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

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

scikit-network package contains functions for (Select all correct sentences):

Options :

6406532035733. ✗ analysis of faults in a computer network

6406532035734. ✓ social network analysis

6406532035735. ✓ analysis of large graphs

6406532035736. ✘ enhancing one's social network

Question Number : 377 Question Id : 640653609487 Question Type : MSQ Is Question

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

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following are methods of the BeautifulSoup object?

Options :

6406532035775. ✓ find()

6406532035776. ✘ get()

6406532035777. ✓ find_all()

6406532035778. ✓ prettify()

Sub-Section Number : 5

Sub-Section Id : 64065387620

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609458 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 : (378 to 379)

Question Label : Comprehension

Answer the given subquestions.

Sub questions

Question Number : 378 Question Id : 640653609459 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

We are analyzing how much the number of lecture hours attended by students affects their exam scores. Which Excel function would you use as a starting point in this analysis?

Options :

6406532035669. ❌ STDEV.P()

6406532035670. ❌ STDEV.S()

6406532035671. ✓ SLOPE()

6406532035672. ❌ EXACT()

Question Number : 379 Question Id : 640653609460 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 previous question, we plan to run a regression analysis after the preliminary analysis. Which of the following features provide you with the capability to do this?

Options :

6406532035673. ✓ Data Analysis Toolpak

6406532035674. ❌ Regression Analyzer

6406532035675. ❌ Regression ToolBokz

6406532035676. ❌ OptSol finder

MLF

Section Id : 64065341255

Section Number : 12

Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	18
Number of Questions to be attempted :	18
Section Marks :	50
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387621
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 380 Question Id : 640653609498 Question Type : MCQ Is Question

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

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : MACHINE LEARNING FOUNDATIONS (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 :

6406532035818. ✓ YES

6406532035819. * NO

Question Number : 381 Question Id : 640653609499 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

Discrete random variables:

Distribution	PMF ($f_X(k)$)	CDF ($F_X(x)$)	$E[X]$	$\text{Var}(X)$
Uniform(A) $A = \{a, a+1, \dots, b\}$	$\frac{1}{n}, \quad x = k$ $n = b - a + 1$ $k = a, a+1, \dots, b$	$\begin{cases} 0 & x < 0 \\ \frac{k-a+1}{n} & k \leq x < k+1 \\ & k = a, a+1, \dots, b-1, b \\ 1 & x \geq n \end{cases}$	$\frac{a+b}{2}$	$\frac{n^2-1}{12}$
Bernoulli(p)	$\begin{cases} p & x = 1 \\ 1-p & x = 0 \end{cases}$	$\begin{cases} 0 & x < 0 \\ 1-p & 0 \leq x < 1 \\ 1 & x \geq 1 \end{cases}$	p	$p(1-p)$
Binomial(n, p)	${}^n C_k p^k (1-p)^{n-k}, \quad k = 0, 1, \dots, n$	$\begin{cases} 0 & x < 0 \\ \sum_{i=0}^k {}^n C_i p^i (1-p)^{n-i} & k \leq x < k+1 \\ & k = 0, 1, \dots, n \\ 1 & x \geq n \end{cases}$	np	$np(1-p)$
Geometric(p)	$(1-p)^{k-1} p, \quad k = 1, \dots, \infty$	$\begin{cases} 0 & x < 0 \\ 1 - (1-p)^k & k \leq x < k+1 \\ & k = 1, \dots, \infty \end{cases}$	$\frac{1}{p}$	$\frac{1-p}{p^2}$
Poisson(λ)	$\frac{e^{-\lambda} \lambda^k}{k!}, \quad k = 0, 1, \dots, \infty$	$\begin{cases} 0 & x < 0 \\ e^{-\lambda} \sum_{i=0}^k \frac{\lambda^i}{i!} & k \leq x < k+1 \\ & k = 0, 1, \dots, \infty \end{cases}$	λ	λ

Continuous random variables:

Distribution	PDF ($f_X(k)$)	CDF ($F_X(x)$)	$E[X]$	$\text{Var}(X)$
Uniform $[a, b]$	$\frac{1}{b-a}, a \leq x \leq b$	$\begin{cases} 0 & x \leq a \\ \frac{x-a}{b-a} & a < x < b \\ 1 & x \geq b \end{cases}$	$\frac{a+b}{2}$	$\frac{(b-a)^2}{12}$
Exp(λ)	$\lambda e^{-\lambda x}, x > 0$	$\begin{cases} 0 & x \leq 0 \\ 1 - e^{-\lambda x} & x > 0 \end{cases}$	$\frac{1}{\lambda}$	$\frac{1}{\lambda^2}$
Normal(μ, σ^2)	$\frac{1}{\sigma\sqrt{2\pi}} \exp\left(\frac{-(x-\mu)^2}{2\sigma^2}\right), -\infty < x < \infty$	No closed form	μ	σ^2
Gamma(α, β)	$\frac{\beta^\alpha}{\Gamma(\alpha)} x^{\alpha-1} e^{-\beta x}, x > 0$		$\frac{\alpha}{\beta}$	$\frac{\alpha}{\beta^2}$
Beta(α, β)	$\frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1} (1-x)^{\beta-1}$ $0 < x < 1$		$\frac{\alpha}{\alpha+\beta}$	$\frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$

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

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

6. Maximum likelihood (ML) estimation:

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

Options :

6406532035820. ✓ Useful Data has been mentioned above.

6406532035821. ❌ This data attachment is just for a reference & not for an evaluation.

Sub-Section Number : 2

Sub-Section Id : 64065387622

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 382 Question Id : 640653609500 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements accurately describes the key difference between classification and regression models?

Options :

6406532035822. ❌ In classification, the output variable is continuous and real-valued, while in regression, it is categorical.

6406532035823. ❌ Regression models are used for predicting probabilities, whereas classification models focus on predicting absolute values.

6406532035824. ✓ Classification models aim to find decision boundaries to separate data into classes, while regression models seek to predict a numeric value.

6406532035825. ✓ In regression, the commonly used loss function is mean squared error, while in classification, 0 - 1 loss is typically employed.

Sub-Section Number :	3
Sub-Section Id :	64065387623
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653609501 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 : (383 to 384)

Question Label : Comprehension

Consider the function $f(x, y, z) = x^2 + 2y^2 - 3z^2$.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 383 Question Id : 640653609502 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 directional derivative of f at $P_0 = (1, 1, 1)$ in the direction of

$$v = \frac{1}{\sqrt{3}}\hat{i} + \frac{1}{\sqrt{3}}\hat{j} - \frac{1}{\sqrt{3}}\hat{k}.$$

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Question Number : 384 Question Id : 640653609503 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 rate of change in the direction where f increases most rapidly at P_0 . 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 :

7.44 to 7.52

Sub-Section Number : 4

Sub-Section Id : 64065387624

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 385 Question Id : 640653609504 Question Type : MCQ Is Question

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

Correct Marks : 3

Question Label : Multiple Choice Question

Let $A = \begin{bmatrix} 1 & 2 & 1 & 0 & 0 \\ 1 & 2 & 2 & 2 & 3 \\ -1 & -2 & 0 & 2 & 3 \end{bmatrix}$. Find the condition on b_1, b_2, b_3 such that $Ax = \begin{bmatrix} b_1 \\ b_2 \\ b_3 \end{bmatrix}$ has a solution.

Options :

6406532035828. ✘ $b_1 - b_2 + b_3 = 0$

6406532035829. ✘ $b_1 + b_2 + b_3 = 0$

6406532035830. ✓ $2b_1 - b_2 + b_3 = 0$

6406532035831. ✘ $2b_1 + b_2 + b_3 = 0$

Question Number : 386 Question Id : 640653609512 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

A consumer wants to maximize his utility subject to some constraints. He consumes two goods g_1 and g_2 and the utility function is the sum of g_1 and g_2 . His budget is Rs.100. The per unit price of goods g_1 and g_2 are Rs.3 and Rs.4 respectively. Choose the correct optimization problem.

Options :

6406532035855. ✓ maximize $g_1 + g_2$ subject to $3g_1 + 4g_2 \leq 100$

6406532035856. ✘ maximize g_1g_2 subject to $3g_1 + 4g_2 \leq 100$

6406532035857. ✘ maximize g_1g_2 subject to $3g_1 + 4g_2 \geq 100$

6406532035858. ✘ maximize $g_1 + g_2$ subject to $3g_1 + 4g_2 \geq 100$

Sub-Section Number : 5

Sub-Section Id : 64065387625

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 387 Question Id : 640653609505 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Let $A, B \in \mathbb{R}^{n \times n}$ be two orthogonal matrices, then which among the following statements are correct?

Options :

6406532035832. ❌ $A - I$ (where I is the identity matrix of the same size) is also orthogonal.

6406532035833. ✓ Both AB and BA are orthogonal.

6406532035834. ✓ A^n and B^n are orthogonal for every $n > 1$.

6406532035835. ❌ A and B are also symmetric matrices.

Question Number : 388 Question Id : 640653609507 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 4 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements is/are true for a real symmetric matrix A ?

Options :

6406532035840. ✓ $A^T A$ and AA^T have the same rank.

6406532035841. ✓ $A^T A$ and AA^T have the same eigenvalues

6406532035842. ❌ $A^T A$ and AA^T have the same eigenvectors.

6406532035843. ✓ $A^T A$ and AA^T have the same singular values.

Sub-Section Number : 6

Sub-Section Id : 64065387626

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 389 Question Id : 640653609506 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following matrices is/are Unitary but not Hermitian?

Options :

6406532035836. ✓ $\begin{bmatrix} 0 & i \\ i & 0 \end{bmatrix}$

6406532035837. ✗ $\begin{bmatrix} \frac{i}{\sqrt{2}} & \frac{1}{\sqrt{2}} \\ \frac{1}{\sqrt{2}} & \frac{i}{\sqrt{2}} \end{bmatrix}$

6406532035838. ✗ $\begin{bmatrix} \frac{1}{\sqrt{2}} & \frac{i}{\sqrt{2}} \\ \frac{i}{\sqrt{2}} & \frac{1}{\sqrt{2}} \end{bmatrix}$

6406532035839. ✓ $\begin{bmatrix} \frac{i}{\sqrt{2}} & \frac{1}{\sqrt{2}} \\ \frac{1}{\sqrt{2}} & \frac{i}{\sqrt{2}} \end{bmatrix}$

Question Number : 390 Question Id : 640653609508 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which among the following is true for PCA?

Options :

6406532035844. ✓ The first principal component represents the direction along which the

variance of the dataset is maximized.

6406532035845. ✘ The first principal component represents the direction along which the variance of the dataset is minimized.

6406532035846. ✘ The first principal component is the eigenvector corresponding to the smallest eigenvalue of the covariance matrix.

6406532035847. ✓ The first principal component is the eigenvector corresponding to the largest eigenvalue of the covariance matrix.

Question Number : 391 Question Id : 640653609510 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following statements regarding gradient descent is/are correct?

Options :

6406532035849. ✓ If the step size is chosen as 1, we may “not always” arrive as close to the optimal solution even after many number of iterations.

6406532035850. ✓ Solution obtained for optimization problem is the local minimum of its objective function.

6406532035851. ✘ Solution obtained for optimization problem is the global minimum of its objective function.

6406532035852. ✓ Gradient descent converges to the global optimum in the case of convex functions.

6406532035853. ✘ Gradient descent does not converge to the global optimum in the case of convex functions.

Question Number : 392 Question Id : 640653609514 Question Type : MSQ Is Question

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

Time : 0

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Suppose a fair coin is tossed twice. Let A denote the event that the first toss is a tail. Let B denote the event that the second toss is a tail. Let C denote the event that out of the first two tosses, either both are heads or both are tails. Which among the following options are true? Select all that apply.

Options :

6406532035864. ❌ A, B and C are independent.

6406532035865. ✓ A, B and C are dependent.

6406532035866. ✓ A, B and C are pairwise independent.

6406532035867. ✓ $P(A) = P(B) = P(C) = 1/2$

Sub-Section Number : 7

Sub-Section Id : 64065387627

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 393 Question Id : 640653609509 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 will be the value of $f(x_1, x_2) = 8x_1^2 + 2x_1x_2 - x_2^2$ with an initial guess of $(0, 1)$, after two iterations of gradient descent algorithm? Take step size as 0.5.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

Sub-Section Number :	8
Sub-Section Id :	64065387628
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 394 Question Id : 640653609511 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 minimum distance from the surface $x^2 - y^2 - z^2 = 1$ to the origin.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1

Question Number : 395 Question Id : 640653609516 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 $X = \begin{pmatrix} X_1 \\ X_2 \end{pmatrix} \sim \text{Normal}(\mu, \Sigma)$, where $\mu = \begin{pmatrix} 4 \\ 5 \end{pmatrix}$ and $\Sigma = \begin{pmatrix} 16 & a \\ a & 25 \end{pmatrix}$.

Define

$$Y_1 = 2X_1 + 2X_2 + 1$$

$$Y_2 = 3X_1 - 2X_2 - 2$$

Find the value of a for which Y_1 and Y_2 are independent.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

40

Question Number : 396 **Question Id :** 640653609517 **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 average life (in years) of an electric bulb follows exponential distribution with parameter $\lambda = 0.4$. Using Weak Law of large numbers, find a lower bound on the probability that the mean life of a random sample of 50 such bulbs falls between 1.5 and 3.5 years. Enter your 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 :

0.870 to 0.880

Sub-Section Number : 9

Sub-Section Id : 64065387629

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 397 **Question Id :** 640653609513 **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

Using Karush-Kuhn-Tucker conditions, solve the following problem.

$$\text{minimize } f(x, y) = 3x + 2y$$

$$\text{subject to } x - y + 3 \leq 0, -5x + 3y + 7 \leq 0, \text{ & } x, y \geq 0$$

The global minimum is at

Options :

6406532035859. ✘ (9, 13)

6406532035860. ✘ (0, 3)

6406532035861. ✓ (8, 11)

$$6406532035862. ✘ \left(\frac{7}{5}, 0\right)$$

6406532035863. ✘ None of these

Question Number : 398 Question Id : 640653609515 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

Let $X_1, X_2 \sim \text{i.i.d. Exponential}(2)$. Consider the transformations $Y_1 = X_1 + X_2$ and $Y_2 = X_2$.

Find the joint PDF of Y_1 and Y_2 .

Options :

$$6406532035868. ✓ g_{Y_1 Y_2}(y_1, y_2) = \begin{cases} 4e^{-2y_1}, & y_1 > y_2 > 0 \\ 0, & \text{otherwise} \end{cases}$$

6406532035869. ✘

$$g_{Y_1 Y_2}(y_1, y_2) = \begin{cases} 4e^{-2y_2}, & y_1 > y_2 > 0 \\ 0, & \text{otherwise} \end{cases}$$

6406532035870. *

$$g_{Y_1 Y_2}(y_1, y_2) = \begin{cases} 4e^{-4y_1}, & y_1 > y_2 > 0 \\ 0, & \text{otherwise} \end{cases}$$

6406532035871. *

$$g_{Y_1 Y_2}(y_1, y_2) = \begin{cases} 4e^{-4y_2}, & y_1 > y_2 > 0 \\ 0, & \text{otherwise} \end{cases}$$

Appdev1

Section Id :	64065341256
Section Number :	13
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	33
Number of Questions to be attempted :	33
Section Marks :	100
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387630
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 399 Question Id : 640653609518 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : MODERN APPLICATION DEVELOPMENT 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 :

6406532035874. ✓ YES

6406532035875. ✗ NO

Sub-Section Number : 2

Sub-Section Id : 64065387631

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 400 Question Id : 640653609519 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 three components of a todo list app based on an MVC architecture.

A - stores a list of all the tasks that the user has submitted along with attributes like completion status.

B - can display which tasks were completed, which tasks are pending, receive new tasks from the user etc.

C - can set a task in the list of tasks as completed, add a new task to the list of tasks, delete old tasks, retrieve a list of pending tasks and so on.

Given the above capabilities of the different components, choose the correct option:

Options :

6406532035876. ✓ model - A, view - B, controller - C

6406532035877. ✗ model - B, view - A, controller - C

6406532035878. ✗ model - C, view - B, controller - A

6406532035879. ✗ model - A, view - C, controller - B

Question Number : 401 Question Id : 640653609520 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/are correct?

Statement 1: In client-server architecture, the client and the server MUST be on separate machines

Statement 2: In peer-to-peer architecture, the network is always more fault-tolerant

Options :

6406532035880. ✗ Both statement 1 and statement 2 are correct.

6406532035881. ✗ Statement 1 is correct but statement 2 is incorrect.

6406532035882. ✗ Statement 2 is correct but statement 1 is incorrect.

6406532035883. ✓ Neither statement 1 nor statement 2 is correct.

Question Number : 402 Question Id : 640653609527 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 relational databases, a column stores (1) _____ and a row stores (2) _____.

Options :

6406532035908. ❌ a field, multiple entries

6406532035909. ✓ a field, a single entry

6406532035910. ❌ a single entry, a field

6406532035911. ❌ multiple entries, a field

Question Number : 403 Question Id : 640653609531 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 helps us to create custom HTML elements?

Options :

6406532035924. ❌ SVG

6406532035925. ✓ Web Components

6406532035926. ❌ Web API

6406532035927. ❌ None of these

Question Number : 404 Question Id : 640653609535 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 git command will remove a file from the staged area but keeps the file in the directory?

Options :

6406532035940. ✘ `git rm <filename>`

6406532035941. ✓ `git rm --cached <filename>`

6406532035942. ✘ `git del <filename>`

6406532035943. ✘ `git del --cached <filename>`

Sub-Section Number : 3

Sub-Section Id : 64065387632

Question Shuffling Allowed : Yes

Is Section Default? : null

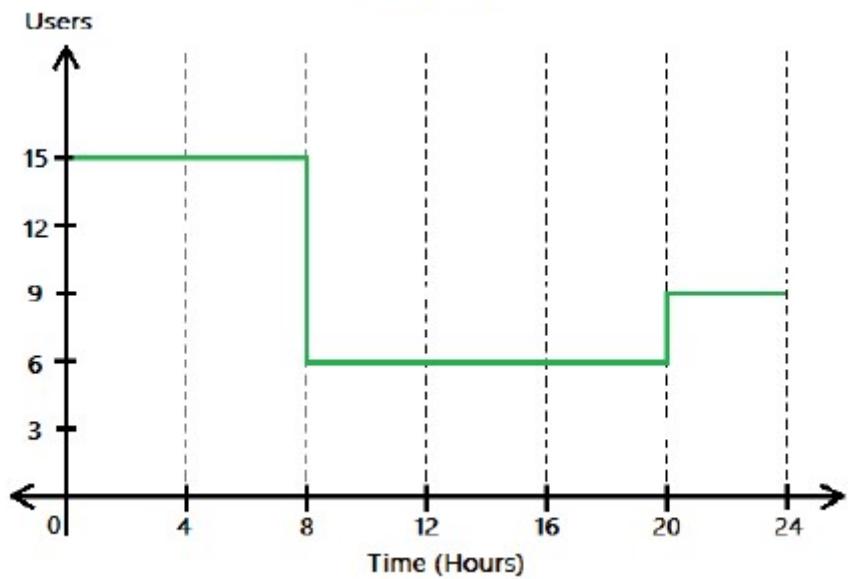
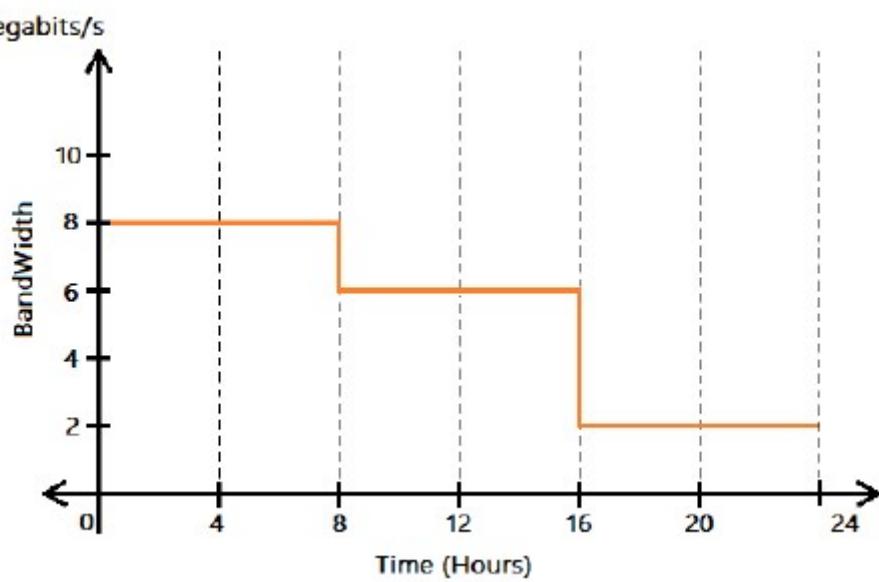
Question Number : 405 Question Id : 640653609521 Question Type : MCQ Is Question

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

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following graph that represents the variation in bandwidth and number of users connected to a network for an entire day (24 hours). What will be the total data consumed (in Gigabytes) by the user that is connected to the internet network throughout the day?



Options :

6406532035884. ✘ 5.216

6406532035885. ✘ 52.16

6406532035886. ✓ 6.52

6406532035887. ✘ 65.20

Sub-Section Number : 4

Sub-Section Id : 64065387633

Question Shuffling Allowed : Yes

Is Section Default? : null

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider a client 'C' and a server 'S', separated by distance 'D' are connected by a fictitious medium in which the speed of light is 'v' m/sec. If 'N' is the number of consecutive requests that can be made in a second by the client 'C' (i.e. A new request can be made only after receiving the response from the previous request.), Which of the following changes would double the number 'N'?

Options :

6406532035888. ❌ A change of medium where the speed of light is $v/2$ m/sec.

6406532035889. ✓ A change of medium where the speed of light is $2v$ m/sec.

6406532035890. ✓ Reduce the distance between C and S from D to $D/2$.

6406532035891. ❌ Increase the distance between C and S from D to $2D$.

Question Number : 407 Question Id : 640653609528 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following flask app.

```
from flask import Flask, abort, redirect, url_for, render_template
app = Flask(__name__)

@app.route('/home/<path:directory>')
def find_course(directory):
    if "ML" in directory:
        return f"Welcome to online course on Data Science!"
    else:
        abort(404)

@app.errorhandler(404)
def page_not_found(error):
    return "<h2>Sorry, No course found!</h2>"

app.run()
```

If the application is running locally on <http://127.0.0.1:5000>, select the correct options.

Options :

For the URL:

http://127.0.0.1:5000/home/course/data_science?course=ML

The browser will render:

Sorry, No course found!

6406532035912. ✓

For the URL:

http://127.0.0.1:5000/home/course/data_science_DL?course=DL

The browser will render:

Welcome to online course on Data Science!

6406532035913. ✓

For the URL:

<http://127.0.0.1:5000/home/course/programming?course=DBMS>

The browser will render:

Welcome to online course on Programming!

6406532035914. ❌

For the URL:

```
http://127.0.0.1:5000/home/course/DBMS?course=Data_structures
```

The browser will render:

Sorry, No course found!

6406532035915. ✘

Question Number : 408 Question Id : 640653609533 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following is/are a correct way to use for loop in jinja?

Options :

```
from jinja2 import Template
t=Template("numbers divisible by 2: {% for n in range (0,10,2) %}
{{n}}""{% endfor %}")
print(t.render())
```

6406532035932. ✓

```
<ul>
{% for item in seq %}
    <li>{{ item }}</li>
{% endfor %}
</ul>
```

6406532035933. ✓

```
from jinja2 import Template
t=Template("My favourite numbers are: {% for n in [2,4,6] {{n}},""%
endfor %}")
print(t.render())
```

6406532035934. ✘

6406532035935. ✓

```
from jinja2 import Template
my_statement = Template("The special series is:{% for n in
range(1,15) -%} {{n%3}}" "%- endfor %}")
out = my_statement.render()
print(out)
```

Question Number : 409 Question Id : 640653609547 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following TodoSimple resource class created using flask_restful.

```
from flask import Flask, request
from flask_restful import Resource, Api

app = Flask(__name__)
api = Api(app)

class TodoSimple(Resource):
    def get(self, todo_id):
        return {"todo_id": todo_id}

    def put(self):
        todo_id = request.args.get("todo_id")
        return {"todo_id": todo_id}

app.run()
```

Which of the following statements given below will correctly map the resource URLs with the TodoSimple resource class.

Options :

6406532035985. ✘ `api.add_resource(TodoSimple, "/api")`

6406532035986. ✘ `api.add_resource(TodoSimple, "/api/<int:todo_id>")`

6406532035987. ✓ api.add_resource(TodoSimple, "/api/<int:todo_id>", "/api")

6406532035988. ✓ api.add_resource(TodoSimple, "/<int:todo_id>", "/api")

Sub-Section Number : 5

Sub-Section Id : 64065387634

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 410 Question Id : 640653609523 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 HTML Document.

```
<!DOCTYPE html>
<head>
    <title>Test Document</title>
    <style>
        h4, span {
            display: inline-block;
            width: 200px;
        }
    </style>
</head>
<body>
    <h4>Statement 1 from Document.</h4>
    <h4>Statement 2 from Document.</h4>
    <span>Statement 3 from Document.</span>
    <span>Statement 4 from Document.</span>
</body>
</html>
```

How will the browser render the HTML document given above?

Options :

Statement 1 from Document.

Statement 2 from Document.

6406532035892. ✖ Statement 3 from Document. Statement 4 from Document.

Statement 1 from Document. Statement 2 from Document.

Statement 3 from Document.

Statement 4 from Document.

6406532035893. ✖

Statement 1 from Document.

Statement 2 from Document.

Statement 3 from Document.

Statement 4 from Document.

6406532035894. ✖

Statement 1 from Document. Statement 2 from Document. Statement 3 from Document. Statement 4 from Document.

6406532035895. ✓

Question Number : 411 Question Id : 640653609524 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 numbers $N_1 = 113_a$ and $N_2 = 365_b$ where a and b are the bases. If the decimal equivalent of N_1 is numerically greater than the decimal equivalent of N_2 , then the possible values of a and b would be.

Options :

6406532035896. ✘ a = 10, b = 8

6406532035897. ✘ a = 8, b = 10

6406532035898. ✓ a = 16, b = 8

6406532035899. ✘ a = 16, b = 10

Question Number : 412 Question Id : 640653609525 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 flask app and Jinja2 template.

app.py

```
from flask import Flask, render_template
app = Flask(__name__)

@app.route('/')
def index():
    return render_template("index.html", links=['hoME', 'PROfile',
'Contact', 'SITEMAP'])

app.run()
```

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>Macro</title>
</head>
<body>
    {% macro unordered_list(items)%}
        <ul>
            {% for item in items %}
                <li><a href="/{{item}}">{{item|capitalize}}</a></li>
            {% endfor %}
        </ul>
    {% endmacro %}
    {{ unordered_list(links) }}
</body>
</html>
```

If the flask app is running locally on <http://127.0.0.1:5000>. What will be the output on the browser for the base URL?

Options :

- [Home](#)
- [Profile](#)
- [Contact](#)
- [Sitemap](#)

6406532035900. ✓

- [home](#)
- [profile](#)
- [contact](#)
- [sitemap](#)

6406532035901. ✘

- [HoME](#)
- [PROfile](#)
- [Contact](#)
- [SITEMAP](#)

6406532035902. ✘

6406532035903. ✘

- [HOME](#)
- [PROFILE](#)
- [CONTACT](#)
- [SITEMAP](#)

Question Number : 413 Question Id : 640653609529 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 Python code snippet.

file.py

```
import sys

courses = {
    1: "App Dev I",
    2: "App Dev II",
    3: "Machine Learning",
    4: "Deep learning"
}

arguments = sys.argv

if courses[int(sys.argv[2])] in "App Dev II":
    print("course found",courses[int(sys.argv[2])])
else:
    print("No course found!")
```

What will be output on the terminal for the command python file.py courses 1?

Options :

6406532035916. *

course found App Dev II

6406532035917. ✓

course found App Dev I

No course found!

6406532035918. ✘

IndexError: list index out of range

6406532035919. ✘

Question Number : 414 Question Id : 640653609530 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 function to be tested and test functions given in the Python code snippet below.

```
def sample_function(x):
    ser = []
    for i in range(x):
        ser.append((i)**2)
    return ser

def test_func1():
    assert 36 in sample_function(7)

def test_func2():
    assert 64 in sample_function(8)

def sample_test3():
    assert 81 in sample_function(11)
```

What will be the summary of the output for the command
pytest file.py on the terminal?

Options :

```
===== 1 failed, 2 passed in 0.30s =====
```

6406532035920. ✘

```
===== 2 failed, 1 passed in 0.30s =====
```

6406532035921. ✘

```
===== 3 failed in 0.30s =====
```

6406532035922. ✘

```
===== 1 failed, 1 passed in 0.30s =====
```

6406532035923. ✓

Question Number : 415 Question Id : 640653609532 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 Python code snippet.

log.py

```
import logging
import sys

logging.basicConfig(level=logging.WARNING,
                    format='%(asctime)s - %(levelname)s - %(message)s')

def check_val(value):
    if value < 0:
        raise ValueError("Invalid value: Please enter a positive value.")
    else:
        logging.info("Value added: %s", value)

try:
    input_value = int(sys.argv[1])
    check_val(input_value)
except ValueError as ve:
    logging.exception("Exception occurred: %s", str(ve))
```

What will be the output on the terminal for the command: python log.py 34 ?

Options :

6406532035928. ✘

2023-08-14 21:01:05,684 - INFO - Value added: 34

6406532035929. ✘

2023-08-14 21:01:05,684 - WARNING - Value added: 34

6406532035930. ✘

ValueError: Invalid value: Please enter a positive value.

6406532035931. ✓ None.

Question Number : 416 Question Id : 640653609536 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 code below and match the conditions in Column A with respect to the coverage types in Column B.

```
int foo(int x, int y)
{
    int z = 0;
    if((x > 0) && (y > 0))
    {
        z = x;
    }
    return z;
}
```

Column A	Column B
1. Test invokes foo() at least once	a. Condition coverage
2. foo(1,1)	b. Branch coverage
3. foo(1,1) and foo(1,0)	c. Function coverage
4. foo(0,1) and foo(1,0)	d. Statement coverage

Options :

6406532035944. ✘ 1-d, 2-a, 3-b, 4-c

6406532035945. ✘ 1-c, 2-d, 3-a, 4-b

6406532035946. ✓ 1-c, 2-d, 3-b, 4-a

6406532035947. ✘ 1-b, 2-d, 3-c, 4-a

Question Number : 417 Question Id : 640653609537 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

Match the following types of testing with their functionality.

A. Regression testing	1. Beta Testing
B. User Acceptance testing	2. One step beyond integration Testing
C. System testing	3. Simulates actual user interaction, allows to script browser
D. System testing Automation	4. Type of testing that runs after every change to ensure that the change introduces no unintended breaks.

Which of the following is the correct matching?

Options :

6406532035948. ✘ A → 1, B → 2, C → 3, D → 4

6406532035949. ✘ A → 4, B → 3, C → 2, D → 1

6406532035950. ✓ A → 4, B → 1, C → 2, D → 3

6406532035951. ✘ A → 3, B → 2, C → 1, D → 4

Question Number : 418 Question Id : 640653609540 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 table “emp” created in SQLite database corresponding to model class “Employee” using flask_sqlalchemy.

Id	Name	Designation	Gender	Salary
1	Raji	Headmaster	Female	4500
2	Ram	Teacher	Male	5000
3	Raveena	Teacher	Female	3000
4	Reshma	Technical staff	Female	2000
5	Ravi	Teacher	Male	1000

Which of the following code snippets will change the designation of male teachers to professor and will increase their salaries to 6000 correctly when typed in the Python console?

Options :

```
>>> emp = Employee.query.filter_by(Designation = 'Teacher').all()
>>> for staff in emp:
...     staff.Designation="Professor"
...     staff.Salary = 6000
...
...>>> db.session.commit()
```

6406532035957. ❌

```
>>>emp = Employee.query.filter_by(Designation="Teacher",Gender="Male").all()
>>> for staff in emp:
...     staff.Designation="Professor"
...     staff.Salary +=6000
...
...>>> db.session.commit()
```

6406532035958. ❌

```
>>>
emp=Employee.query.filter_by(Designation="Teacher",Gender="Male").all()
>>> for staff in emp:
...     staff.Designation="Professor"
...     staff.Salary=6000
...
...>>> db.session.commit()
```

6406532035959. ✓

6406532035960. ❌

```
>>> emp = Employee.query.filter_by(Designation = 'Teacher').all()
>>> for staff in emp:
... staff.Designation="Professor"
... staff.Salary += 6000
...
>>> db.session.commit()
```

Question Number : 419 Question Id : 640653609542 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 python code snippet app.py, the html files, base.html and home.html residing in "templates" folder.

app.py

```
from flask import Flask, render_template
app = Flask(__name__)
@app.route('/')
def home():
    return render_template('home.html')
app.run(debug=True)
```

home.html

```
{% extends "base.html" %}
{% block content %}
<h3>Welcome to MAD I</h3>
{% endblock %}
```

base.html

```
<!DOCTYPE html>
<html lang="en">
<head>
    <title>IITM</title>
</head>
<body>
    <h1 style="color: violet;"> IITM BS Degree </h1>
    {% block content %}
    {% endblock %}
</body>
</html>
```

What will be the rendered output for base URL if flask app is running locally on
<http://localhost:5000>

Options :

6406532035965. ✖ **Welcome to MAD I**

IITM BS Degree

6406532035966. ✓ **Welcome to MAD I**

Welcome to MAD I

6406532035967. ✖ **IITM BS Degree**

6406532035968. ✖ Error

Question Number : 420 Question Id : 640653609549 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 SQL create statement.

```

CREATE TABLE car (
    car_id INTEGER NOT NULL,
    model INTEGER NOT NULL,
    name VARCHAR(50),
    mfd_date DATETIME NOT NULL,
    description VARCHAR,
    PRIMARY KEY (car_id),
    UNIQUE (model),
    UNIQUE (name)
)

```

Which of the following `flask_sqlalchemy` models will create exactly the same table as created by the above SQL command?

Options :

```

class Car(db.Model):
    car_id = db.Column(db.Integer(), unique = True, nullable = False)
    model = db.Column(db.Integer(), autoincrement = True)
    name = db.Column(db.String(50), unique = True, nullable = True)
    mfd_date = db.Column(db.DateTime(), nullable = False)
    description= db.Column(db.String())

```

6406532035993. ✘

```

class Car(db.Model):
    car_id = db.Column(db.Integer(), primary_key = True)
    model = db.Column(db.Integer(), unique = True, nullable = True)
    name = db.Column(db.String(50), unique = False)
    mfd_date = db.Column(db.DateTime(), nullable = False)
    description= db.Column(db.String())

```

6406532035994. ✘

```

class Car(db.Model):
    car_id = db.Column(db.Integer(), primary_key = True)
    model = db.Column(db.Integer(), unique = True, nullable = False)
    name = db.Column(db.String(50), unique = True, nullable = True)
    mfd_date = db.Column(db.DateTime(), nullable = False)
    description= db.Column(db.String())

```

6406532035995. ✓

6406532035996. ✘

```

class Car(db.Model):
    car_id = db.Column(db.Integer(), primary_key = True)
    model = db.Column(db.Integer(), unique = True, nullable = False)
    name = db.Column(db.String(), unique = True, nullable = True)
    mfd_date = db.Column(db.DateTime())
    description = db.Column(db.String(50))

```

Sub-Section Number : 6

Sub-Section Id : 64065387635

Question Shuffling Allowed : Yes

Is Section Default? : null

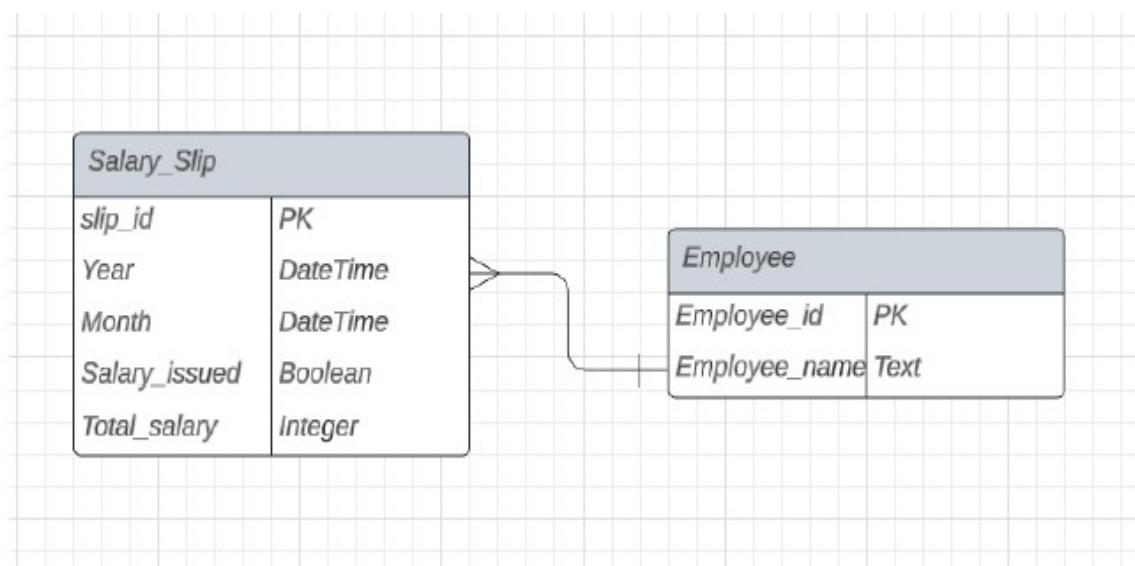
Question Number : 421 Question Id : 640653609526 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

What can be inferred from the Entity-Relationship Diagram below:



Options :

6406532035904. ✓ An employee can exist without having any salary slips

6406532035905. ✗ A salary slip can exist without belonging to any employee

6406532035906.

* An employee needs to have at least one salary slip

6406532035907. ✓ A salary slip must belong to one and only one employee

Question Number : 422 Question Id : 640653609543 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider a typical Amazon Alexa device. Which of the following would constitute the view of the application behind such a device?

Options :

6406532035969. ✓ The AI voice

6406532035970. ✓ The LED light around the device

6406532035971. * The body of the device

6406532035972. * None of these

Question Number : 423 Question Id : 640653609544 Question Type : MSQ Is Question

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

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following is true of “cold storage” like Amazon Glacier?

Options :

6406532035973. * They have high cost and low durability.

6406532035974. ✓ They have low cost and high durability.

6406532035975. * Latency of retrieval is very low.

6406532035976. ✓ Latency of retrieval is very high.

Sub-Section Number :	7
Sub-Section Id :	64065387636
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 424 Question Id : 640653609534 Question Type : MSQ Is Question

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

Correct Marks : 4.5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Consider the following flask application.

app.py

```
from flask import Flask, render_template, request
app = Flask(__name__)
@app.route('/', methods=['GET'])
def my_form():
    if request.method == 'GET':
        if(request.args.get('name') == None):
            return """
                <form method="GET" action="/">
                    <label for="name">Enter a name: </label>
                    <input type="text" name="name" id="name"></input>
                    <input type="submit" name="bttnum"
                        id="bttnum"></input>
                </form>
            """
        elif(request.args.get('name') == ''):
            return "<h1>Invalid name</h1>"
        else:
            name = request.args.get('name')
            return f"<h2>My name is {name}</h2>"
```

app.run()

If this flask app is running locally on <http://localhost:5000>, then which of the following statements is/are incorrect?

Options :

For <http://127.0.0.1:5000/?name=Will+Smith&bttnnum=Submit> the rendered output is:

My name is Will Smith

6406532035936. ✘

If the form rendered at <http://127.0.0.1:5000/> is submitted with value “Will Smith”, then the rendered output is:

My name is Will

6406532035937. ✓

6406532035938. ✓ For the URL <http://127.0.0.1:5000/?name>, the app will redirect to the base URL.

If the form rendered at base URL is submitted with all the fields empty, then it will throw “Not

6406532035939. ✓ Found” error.

Question Number : 425 Question Id : 640653609550 Question Type : MSQ Is Question

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

Correct Marks : 4.5 Max. Selectable Options : 0

Question Label : Multiple Select Question

Follow the code given below

```

from flask import Flask, request
from flask_restful import Resource, Api, fields, marshal, marshal_with

app = Flask(__name__)
api = Api(app)

class User:
    def __init__(self, id, username, email):
        self.id=id
        self.username=username
        self.email=email

output={"id": fields.Integer,"username": fields.String,"email": fields.String}

#== Resource Class Here =====

api.add_resource(Userapi, '/')
if __name__ == '__main__':
    app.run()

```

What code should be written in place of #== Resource Class Here =====, so that we get;

```
{
    "id": 1,
    "username": "iitm",
    "email": "bs@ds.study.iitm.ac.in"
}
```

as output on running the command curl -X GET '<http://127.0.0.1:5000>' in the terminal?

Options :

```

class Userapi(Resource):
    @marshal_with(output)
    def get(self):
        user=User(1,"iitm", "bs@ds.study.iitm.ac.in")
        return user

```

6406532035997. ✓

```

class Userapi(Resource):
    def get(self):
        user=User(1,"iitm", "bs@ds.study.iitm.ac.in")
        return marshal(user, output)

```

6406532035998. ✓

```
@marshal_with(output)
class Userapi(Resource):
    def get(self):
        user=User(1,"iitm", "bs@ds.study.iitm.ac.in")
        return user
```

6406532035999. *

```
class Userapi(Resource):
    def get(self):
        user=User(1,"iitm", "bs@ds.study.iitm.ac.in")
        return user
```

6406532036000. *

Sub-Section Number : 8

Sub-Section Id : 64065387637

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 426 Question Id : 640653609538 Question Type : SA Calculator : None

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

Correct Marks : 3

Question Label : Short Answer Question

Consider the following flask application.

```

from flask import Flask, render_template, request
app = Flask(__name__)

@app.route('/')
def out():
    val = request.args

    if val['num'] == '':
        return "<h1>Enter a valid number</h1>"
    elif val['num'].isalpha()==True:
        return "<h1>Invalid number</h1>"
    else:
        out = (val['num']) + (val['num'])
    return f'<h1>{out}</h1>'

if(__name__ == "__main__"):
    app.run(debug=True)

```

If this flask app is running locally on <http://localhost:5000>, what is the output for the following URL?

For input: <http://localhost:5000/?num=121>

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

121121

Sub-Section Number : 9

Sub-Section Id : 64065387638

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 427 **Question Id :** 640653609539 **Question Type :** MCQ **Is Question**

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

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following python code snippet. What will be the rendered output?

```
from jinja2 import Template
persons=[
    {"Gender":"Male", "Age":40, "Name":"John"},  

    {"Gender":"Female", "Age":16, "Name":"Samantha"},  

    {"Gender": "Male", "Age":20, "Name":"Kim"}  

]  
  
t="""
<ul>
{% for group in persons|groupby('Gender') %}
    <li>
        {{ group.grouper }}
        <ul>
            {% for person in group.list %}
                <li>{{ person.Name }} is {{ person.Age }} years old</li>
            {% endfor %}
        </ul>
    </li>
{% endfor %}
</ul>
"""
temp=Template(t)
print(temp.render(persons=persons))
```

Options :

- Male
 - John is 40 years old
- Female
 - Samantha is 16 years old
- Male
 - Kim is 20 years old

6406532035953. ✘

- Female
 - Samantha is 16 years old
- Male
 - John is 40 years old
 - Kim is 20 years old

6406532035954. ✓

- Male
 - John is 40 years old
 - Kim is 20 years old
- Female
 - Samantha is 16 years old

6406532035955. *

- Female
 - Samantha is 16 years old
- Male
 - John is 40 years old
- Male
 - Kim is 20 years old

6406532035956. *

Question Number : 428 Question Id : 640653609541 Question Type : MCQ Is Question

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

Time : 0

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider a function func, and a set of test cases given below.

Filename: test_file.py

```
import pytest
def func(x,y):
    out = x+y**2
    return out

class Test_class0():
    def test_case1(self):
        assert func(1,2) == 5

    def case_test2(self):
        assert func(2,3) == 10

    def test_case3(self):
        assert func(6,2) == 8

class Test_class1():
    def test_case1(self):
        assert func(5,2) == 9

    def case_test2(self):
        assert func(4,3) == 14
```

What will be the output on the terminal for the command below?

```
pytest test_file.py -k Test_class0
```

Options :

6406532035961. ✘ == 2 failed, 1 passed in 0.17s ===

6406532035962. ✓ == 1 failed, 1 passed, 1 deselected in 0.17s ===

6406532035963. ✘ == 2 failed, 1 deselected in 0.17s ===

6406532035964. ✘ == 1 failed, 2 passed in 0.17s ===

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

Correct Marks : 4.5

Question Label : Multiple Choice Question

What will be the output of the following Python code snippet?

```
def decor(func):
    def wrapper(x):
        y=func(x)
        return x*y
    return wrapper

@decor
def output(x, optional="hello world!"):
    return x, optional

print(output(5))
```

Options :

6406532035977. ✖ ('hello world!', 'hello world!', 'hello world!', 'hello world!',
'hello world!')

6406532035978. ✖ (5, 5, 5, 5, 5)

6406532035979. ✖ 25

6406532035980. ✓ (5, 'hello world!', 5, 'hello world!', 5, 'hello world!', 5,
'hello world!', 5, 'hello world!')

Question Number : 430 Question Id : 640653609546 Question Type : MCQ Is Question

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

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following flask application.

```
from flask import Flask
app = Flask(__name__)

@app.route('/user/<username>')
def show_user(username):
    return f'Hello {username} !'

@app.route("/hello/user")
def hello():
    return "Hello, user!"

@app.route("/user/")
def index():
    return "Hello user"
if __name__ == "__main__":
    app.run(debug=True)
```

If the application is running locally on <http://127.0.0.1:5000> then map the URLs in Column A with their rendered outputs in Column B.

	Column A		Column B
a	http://localhost:5000/hello/ user	1	User hello !
b	http://localhost:5000/user/h ello	2	Hello user !
c	http://localhost:5000/user/u ser	3	Hello hello !
d	http://localhost:5000/user//	4	Hello user
		5	Hello, user!
		6	Not Found

Options :

6406532035981. ✘ a-2, b-1, c-5, d-6

6406532035982. ✘ a-5, b-1, c-2, d-6

6406532035983. ✓ a-5, b-3, c-2, d-4

6406532035984.

* a-2, b-3, c-4, d-6

Question Number : 431 Question Id : 640653609548 Question Type : MCQ Is Question

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

Correct Marks : 4.5

Question Label : Multiple Choice Question

Consider the following sorting algorithm which sorts any given unsorted array of numbers in ascending order. What would be its time complexity? (Assume appending and deleting an element from an array does not affect time complexity)

Step 1: Create an empty array.

Step 2: Find the element in the unsorted array with the minimum value.

Step 3: Append this element to the array created in step 1.

Step 4: Delete this element from the unsorted array.

Step 5: Repeat steps 1 to 4 until the unsorted array is empty.

Options :

6406532035989. * $O(\log N)$

6406532035990. * $O(N)$

6406532035991. * $O(N \log N)$

6406532035992. ✓ $O(N^2)$

BDM

Section Id : 64065341257

Section Number : 14

Section type : Online

Mandatory or Optional : Mandatory

Number of Questions : 15

Number of Questions to be attempted :	15
Section Marks :	40
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387639
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 432 Question Id : 640653609551 Question Type : MCQ Is Question

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

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : BUSINESS DATA MANAGEMENT (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 :

6406532036001. ✓ YES

6406532036002. ✘ NO

Sub-Section Number : 2

Sub-Section Id : 64065387640

Question Shuffling Allowed :	Yes
Is Section Default? :	null
Question Number : 433 Question Id : 640653609552 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 "range_lookup" parameter in the VLOOKUP function control?	
Options :	
6406532036003. ❌ The range of data in which the Vertical look-up function should operate on.	
6406532036004. ❌ The search direction (up or down) for the lookup value.	
6406532036005. ❌ Whether the function should perform a case-sensitive lookup.	
6406532036006. ✓ Whether the function should perform an approximate or exact match lookup.	
Sub-Section Number :	3
Sub-Section Id :	64065387641
Question Shuffling Allowed :	Yes
Is Section Default? :	null
Question Number : 434 Question Id : 640653609553 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	
With the following data, determine which SKU has the minimum Average Days of Inventory.	

Stock Keeping Unit	Open Stock in Warehouse	Avg Daily Sales
A01	18.7	8.5
A02	31.2	6.3
A03	15.9	3.7
A04	12.4	2.9

Options :

6406532036007. ✓ A01

6406532036008. ✗ A02

6406532036009. ✗ A03

6406532036010. ✗ A04

Sub-Section Number : 4

Sub-Section Id : 64065387642

Question Shuffling Allowed : Yes

Is Section Default? : null

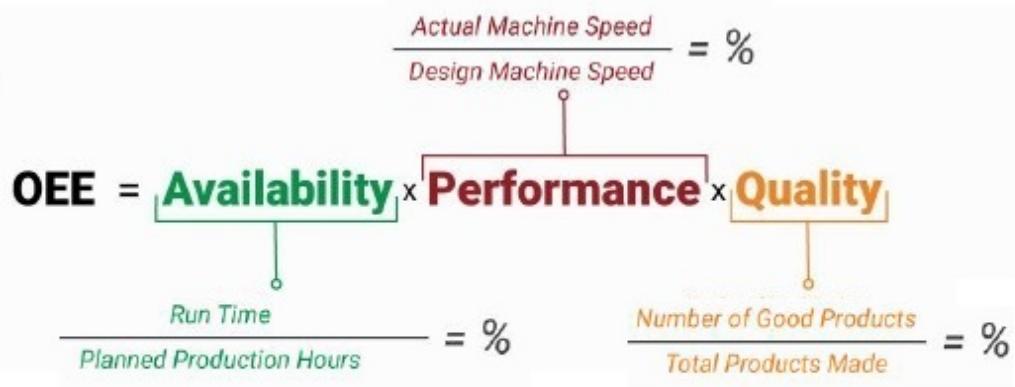
Question Number : 435 Question Id : 640653609554 Question Type : SA Calculator : None

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

Correct Marks : 4

Question Label : Short Answer Question

Calculate the Overall Equipment Effectiveness (OEE) of the Assembly Line Equipment for the month of July.



Parameters:

Planned Production Hours (PPH):	400
Lost Time (LOT):	30
Designed Assembly Speed from Equipment (DA) per Hour:	180
Actual Assembly Speed from Equipment (AA) per Hour:	160
Total Units Assembled (TU):	8000
Defective Units (DU):	320

Round the OEE to two decimal places

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.77 to 0.81

Sub-Section Number : 5

Sub-Section Id : 64065387643

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 436 **Question Id :** 640653609555 **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 company has 20 employees. In the last quarter, 5 employees left, and 3 new employees were hired. What is the employee quarterly attrition rate?

$$\frac{\text{(Number of employee departures)}}{\text{(Average number of employees)}} \times 100 = \text{Attrition rate (percentage)}$$

_____ %

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

25.5 to 27

Sub-Section Number : 6

Sub-Section Id : 64065387644

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609556 **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 : (437 to 438)

Question Label : Comprehension

You oversee the inventory management of gear assemblies in a manufacturing facility. The particulars of the inventory are as follows:

Starting Inventory: 100 units

Daily Usage: 5 units

Lead Time: 10 days

Safety Stock: 20 units

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 437 Question Id : 640653609557 Question Type : MCQ Is Question

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

Correct Marks : 1.5

Question Label : Multiple Choice Question

Based on this information, at what inventory level should you trigger a re-order for gear assemblies?

Options :

6406532036013. ✓ Initiate a re-order when the inventory level drops to 70 units

6406532036014. ✗ Initiate a re-order when the inventory level drops to 50 units

6406532036015. ✗ Initiate a re-order when the inventory level drops to 30 units

6406532036016. ✗ Initiate a re-order when the inventory level drops to 15 units

Question Number : 438 Question Id : 640653609558 Question Type : MCQ Is Question

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

Correct Marks : 1.5

Question Label : Multiple Choice Question

After how many days should you trigger a re-order

Options :

6406532036017. ✗ 17 Days

6406532036018. ✗ 14 Days

6406532036019. ✖ 10 Days

6406532036020. ✓ 6 Days

Sub-Section Number : 7

Sub-Section Id : 64065387645

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 439 Question Id : 640653609559 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 business analysis, the Pareto Principle is commonly used to:

Options :

6406532036021. ✖ Distribute resources evenly across all activities.

6406532036022. ✓ Focus efforts on a few vital factors that have the most significant impact.

6406532036023. ✖ Ignore data that doesn't follow the 80/20 distribution.

6406532036024. ✖ Achieve a perfect balance between inputs and outputs.

Question Number : 440 Question Id : 640653609560 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 scenarios aligns with the principles of Nudge economics?

Options :

6406532036025. ✖ A government bans the sale of sugary beverages.

6406532036026. ✓ A school provides nutritional information to students without altering the cafeteria options.

6406532036027. ✘ A company uses aggressive advertising to persuade customers to buy its products.

6406532036028. ✘ A city imposes fines for not recycling.

Sub-Section Number : 8

Sub-Section Id : 64065387646

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609561 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 : (441 to 443)

Question Label : Comprehension

Consider the following data set and answer the given suquestions.

Applicant	Income (\$1000s)	Credit Score	Loan Amount (\$1000s)
Applicant A	50	720	150
Applicant B	30	680	100
Applicant C	40	780	120
Applicant D	25	620	80
Applicant E	35	750	130

Sub questions

Question Number : 441 Question Id : 640653609562 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 applicant will face the most difficulty in repaying the loan?

Options :

6406532036029. ✘ Applicant A

6406532036030. ✘ Applicant B

6406532036031. ✘ Applicant C

6406532036032. ✘ Applicant D

6406532036033. ✓ Applicant E

Question Number : 442 Question Id : 640653609563 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

If any credit score of 700 and above is considered equally acceptable, then which applicant is the most risky for the lender?

Options :

6406532036034. ✓ Applicant A

6406532036035. ✘ Applicant B

6406532036036. ✘ Applicant C

6406532036037. ✘ Applicant D

6406532036038. ✘ Applicant E

Question Number : 443 Question Id : 640653609564 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

For a loan amount of \$120, which applicant has the lowest risk level?

Options :

6406532036039. ✘ Applicant A

6406532036040. ✘ Applicant B

6406532036041. ✓ Applicant C

6406532036042. ✘ Applicant D

6406532036043. ✘ Applicant E

Sub-Section Number : 9**Sub-Section Id :** 64065387647**Question Shuffling Allowed :** Yes**Is Section Default? :** null**Question Number : 444 Question Id : 640653609565 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

A company is analyzing the effectiveness of different recruitment channels for hiring new employees based on the number of applications received, the number of candidates shortlisted, and the ease of applying scores (on a scale of 1 (min) to 5 (max)) for each recruitment channel.

Please follow the instructions below to answer the question.

Make your selection based on your analysis of the effectiveness scores of the recruitment channels.

Recruitment Channel	Applications	Shortlisted	Ease of Applying (Scale: 1-5)
Linkedin	120	30	4
Referrals	80	40	5
External Agency	150	20	3
Internal Sourcing	100	25	4

Instructions:

- Normalize Ease of Applying Scores
- Calculate Effectiveness Score: Calculate the effectiveness score for each recruitment channel by multiplying the ratio of shortlisted candidates to applications by the normalized ease of applying score.
- Rank the Channels: Rank the recruitment channels based on their calculated effectiveness scores. The higher the effectiveness score, the more effective the channel.

Based on the provided data and your calculated effectiveness scores, which recruitment channel appears to be the most effective in terms of the ratio of shortlisted candidates to applications and the ease of applying?

Options :

6406532036044. ✘ LinkedIn

6406532036045. ✓ Referrals

6406532036046. ✘ External Agency

6406532036047. ✘ Internal Sourcing

Question Number : 445 Question Id : 640653609567 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

Rank the candidates based on the provided factors and choose the correct ranking from the options below:

Candidate	Years of Experience	Technical Skills	Number of Projects	Tenure in Current Role
Rajesh	6.5	4	3	5
Priya	7	3	2	4
Aman	4	2	1	2
Sanya	5.5	3	2	3

Consider the following dataset:

Options :

6406532036053. ✓ Rajesh > Priya > Sanya > Aman

6406532036054. ✗ Priya > Aman > Sanya > Rajesh

6406532036055. ✗ Sanya > Aman > Priya > Rajesh

6406532036056. ✗ Aman > Sanya > Priya > Rajesh

Sub-Section Number : 10

Sub-Section Id : 64065387648

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 446 Question Id : 640653609566 Question Type : MSQ Is Question

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

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

PayBuddy conducted an extensive A/B test to assess the impact of a new Cashback Rewards program on customer spending behavior. The control and test groups were carefully selected to ensure equal representation. The table below provides a detailed breakdown of transaction data before and after the introduction of the Cashback Rewards program. Based on the given data, which of the following statements are true? [Select all that apply]

Group	Average number of transactions per customer (Before Program)	Average transaction amount (\$) (Before Program)	Average number of transactions per customer (After Program)	Average transaction amount (\$) (After Program)
Control	10.5	85.2	11.2	87.6
Test	11.8	91.7	13.4	95.2

Options :

6406532036048. ✓ The new Cashback Rewards program significantly increased the average number of transactions for both control and test groups.

6406532036049. ✗ Both the control and test groups experienced a decrease in the average transaction amount after the introduction of the Cashback Rewards program.

6406532036050. ✓ The Cashback Rewards program had a more pronounced impact on increasing the average transaction amount in the test group compared to the control group.

6406532036051. ✗ The average transaction amount decreased in the control group but increased in the test group after the introduction of the Cashback Rewards program.

6406532036052. ✗ The increase in the average transaction amount was higher in the control group compared to the test group due to the Cashback Rewards program.

Sub-Section Number : 11

Sub-Section Id : 64065387649

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 447 Question Id : 640653609568 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

A cut in price from \$1.50 to \$1.20 sees demand for a product rise by 10%. What would the price elasticity of demand be for this product?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Set

Text Areas : PlainText

Possible Answers :

-0.5

0.5

Question Number : 448 **Question Id :** 640653609570 **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 price is changed from Rs 200 to Rs 150. The absolute value of price elasticity of demand is 1.2.

What is the ratio of the new and old quantities sold?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

1.25 to 1.35

Sub-Section Number : 12

Sub-Section Id : 64065387650

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 449 **Question Id :** 640653609569 **Question Type :** MCQ **Is Question**

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

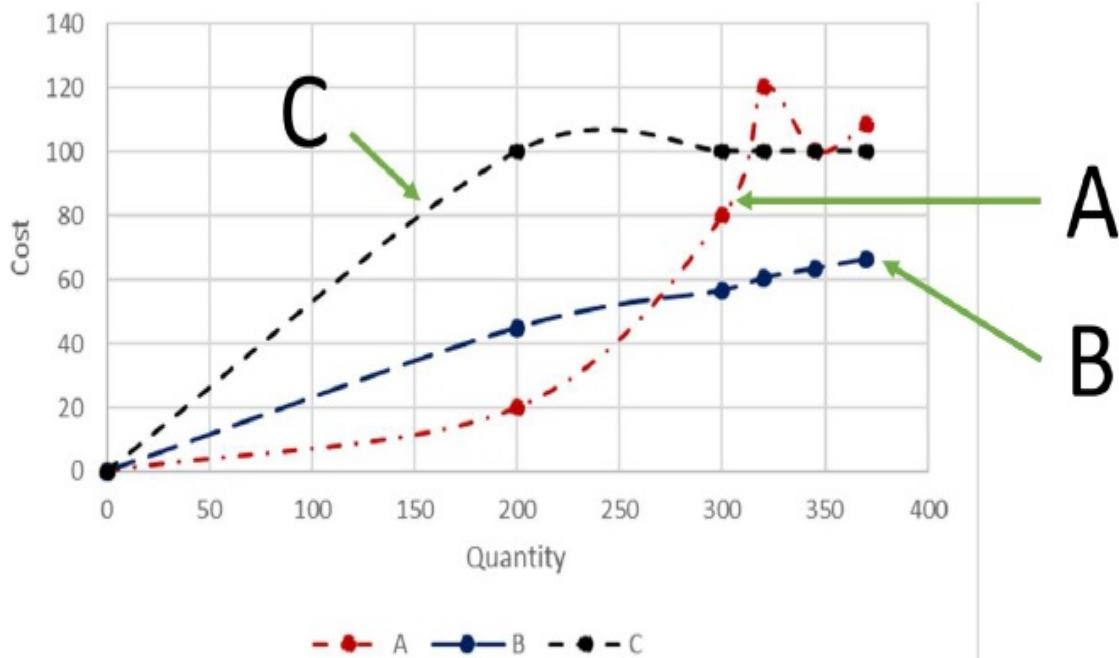
Correct Marks : 4

Question Label : Multiple Choice Question

Using the data in table and figure below, match the curve in column-A to its representative cost in

column-B (assume all units produced are sold).

Fixed Cost (Rs.)	Variable Cost (Rs./ unit)	Number of Units Produced (units)	Selling price (Rs./ unit)
5000	0	0	100
5000	20	200	100
5000	40	300	100
5000	45	320	100
5000	49	345	100
5000	53	370	100



Column-A	Column-B
I. Curve-A	a) Marginal cost
II. Curve-B	b) Marginal revenue
III. Curve-C	c) Avg. total cost
IV. None of the above	

Options :

6406532036058. ✘ I-(a), II-(c), III-(b)

6406532036059. ✘ II-(a), I-(c), III-(b)

6406532036060. ✘ III-(a), II-(c), I-(b)

6406532036061. ✓ IV-(a), II-(c), III-(b)

System Commands

Section Id :	64065341258
Section Number :	15
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	15
Number of Questions to be attempted :	15
Section Marks :	100
Display Number Panel :	Yes
Section Negative Marks :	0
Group All Questions :	No
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	64065387651
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 450 Question Id : 640653609571 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 0

Question Label : Multiple Choice Question

THIS IS QUESTION PAPER FOR THE SUBJECT "DIPLOMA LEVEL : SYSTEM COMMANDS (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 :

6406532036063. ✓ YES

6406532036064. ✘ NO

Sub-Section Number : 2

Sub-Section Id : 64065387652

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 451 Question Id : 640653609572 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

Select the correct statement from the options for the following command.

```
cat $(cat)
```

Options :

6406532036065. ✘ The command opens the file named "cat" in the current working directory.

6406532036066. ✘ The command takes standard input and prints the received standard input.

6406532036067. ✓ The command prints the contents of the file names obtained from the standard input

6406532036068. ✘ The command throws an error since no argument is given to the command `cat` in `\$(cat)`

Question Number : 452 Question Id : 640653609573 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

From `man bash`,

Process Substitution

Process substitution allows a process's input or output to be referred to using a filename. It takes the form of `<(list)` or `>(list)`. The process list is run asynchronously, and its input or output appears as a filename. This filename is passed as an argument to the current command as the result of the expansion. If the `>(list)` form is used, writing to the file will provide input for list. If the `<(list)` form is used, the file passed as an argument should be read to obtain the output of list. Process substitution is supported on systems that support named pipes (FIFOs) or the `/dev/fd` method of naming open files.

When available, process substitution is performed simultaneously with parameter and variable expansion, command substitution, and arithmetic expansion.

Example:

```
$ seq 2 5
2
3
4
5
$ diff <(seq 1 3) <(seq 2 5)
1d0
< 1
3a3,4
> 4
> 5
```

What does the command `echo <(seq 10)` output represent?

Options :

6406532036069. ✘ The standard output from the command `seq 10`

6406532036070. ✓ A file

6406532036071. ✘ A directory

6406532036072. ✘ Nothing will be printed

Question Number : 453 Question Id : 640653609575 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

Which of the option is the correct output of the following command?

```
echo 'alphabet
alpha
beta
gamma
omega
iota
nu' |
awk '/^alpha/,/^omega/ { print }' |
sed '1d; $d'
```

Options :

alphabet
alpha
beta
gamma
omega
iota
nu

6406532036077. ✘

6406532036078. ✘

alphabet

alpha

beta

gamma

omega

iota

nu

6406532036079. ❌

alpha

beta

gamma

6406532036080. ✓

Question Number : 454 Question Id : 640653609578 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

In a text file named "numbers.txt", multiple lines contain numbers. You want to delete all lines that have a number greater than 100. Which sed command would you use?

Hint: By default, SED uses the Basic Regular Expression Engine (BRE)

Options :

6406532036087. ✓ `sed '/[0-9]\{3,\}/d' numbers.txt`

6406532036088. ❌ `sed '/[0-9]\{3,\}/d' numbers.txt`

6406532036089. ❌ `sed '/[0-9]\{2,\}/d' numbers.txt`

6406532036090. ❌ sed '/[0-9]\{2,\}/d' numbers.txt

Question Number : 455 Question Id : 640653609584 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

Select the correct statement from the options for the following **SED** command.

```
sed '5~5{s/\b\(([a-z])/\u\1/g}' sample.txt
```

Options :

6406532036102. ❌ All characters in every fifth line of the text are capitalized

6406532036103. ❌ Starting character of every fifth line is capitalized

6406532036104. ❌ Starting character of each word is capitalized

6406532036105. ✓ Starting character of each word of every fifth line is capitalized

Question Number : 456 Question Id : 640653609587 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

Following entry is made to a crontab to run a script which generate system and process logs at designated time. When is the script `/home/Tisha/monitor_management.sh` scheduled to get executed.

```
0 4 4 * * /home/Tisha/log_management.sh
```

Hint: Below is the description of the sequence in the cron job command. It tells at what date/time periodically the job needs to be executed.

*	*	*	*	*	<Command(s) with argument>
					Command or Script to Execute
			Day of the Week(0-6)		
		Month of the Year(1-12)			
	Day of the Month(1-31)				
Hour(0-23)					
Min(0-59)					

Options :

6406532036114. ✘ 4th of each Month at 00:04 am

6406532036115. ✓ 4th of each Month at 04:00 am

6406532036116. ✘ 4th Month of each year at 04:00 am

6406532036117. ✘ 4th Month of each year at 00:04 am

Sub-Section Number : 3

Sub-Section Id : 64065387653

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 457 Question Id : 640653609580 Question Type : MSQ Is Question

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

Correct Marks : 6 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the incorrect answer to the question. If all the statements are correct, select "None of these".

1. What is a process in Linux?

- Answer: In Linux, a process is an instance of a running program. It represents the execution of a program and consists of the program code, data, and resources.

2. How can you view the list of running processes in Linux?

- Answer: You can use the "ps" command to view the list of running processes in Linux. The "ps" command provides information about active processes, including their process IDs (PIDs), resource usage, and status.

3. What is the difference between a foreground process and a background process?

- Answer: A foreground process is a process that runs in the foreground and interacts directly with the user through the terminal. It receives input from the user and displays output on the terminal. On the other hand, a background process runs in the background without user interaction and does not occupy the terminal.

4. How can you terminate a running process in Linux?

- Answer: You can terminate a running process in Linux using the "kill" command. The "kill" command sends a signal to a process, requesting it to terminate. The most commonly used signal is SIGTERM (signal number 15), which gracefully terminates the process.

Options :

6406532036095. ✘ 1

6406532036096. ✘ 2

6406532036097. ✘ 3

6406532036098. ✘ 4

6406532036099. ✓ None of these

Question Number : 458 Question Id : 640653609585 Question Type : MSQ Is Question

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

Correct Marks : 6 Max. Selectable Options : 0

Question Label : Multiple Select Question

Which of the following regular expression(s) are the **most appropriate** to capture the PAN card numbers in a file?

Note:

- A PAN (Permanent Account Number) typically follows the format of ABCTY1234D (All capital).
- The first three characters, "ABC" in this case, form an alphabetical series ranging from AAA to ZZZ.
- The fourth character, like 'T', indicates the status of the PAN holder, where 'T' stands for Trust, 'F' for Firm, 'H' for HUF, 'P' for Individual, and 'C' for Company.
- The fifth character, for instance, 'Y', represents the first letter of the PAN holder's last name.
- The subsequent four characters are sequential digits from 0001 to 9999.
- The tenth character, 'D', functions as an alphabetic check digit, ranging from A to Z.

Assume a Basic Regular Expression Engine (BRE)

Options :

6406532036106. ❌ [A-Za-z]\{3\}[TFHPIC][A-Za-z][0-9]\{4\}[A-Za-z]

6406532036107. ✓ [A-Z]\{3\}[TFHPIC][A-Z][0-9]\{4\}[A-Z]

6406532036108. ❌ [[:alpha:]]\{3\}[TFHPIC][[:alpha:]][[:digit:]]\{4\}[[:alpha:]]

6406532036109. ✓ [[:upper:]]\{3\}[TFHPIC][[:upper:]][[:digit:]]\{4\}[[:upper:]]

Sub-Section Number : 4

Sub-Section Id : 64065387654

Question Shuffling Allowed : Yes

Is Section Default? :

null

Question Number : 459 Question Id : 640653609574 Question Type : MSQ Is Question

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

Correct Marks : 7 Max. Selectable Options : 0

Question Label : Multiple Select Question

Select the command(s) that retrieves the first ten lines of all the files that only end with .md in the current working directory and its subfolders.

Note: All the directories and files do not have space in their names

Hint:

- -type f option searches only for the files.
- -name x* option searches for the filename with the pattern with wild card characters (not regex)

```
$ xargs --help
Usage: xargs [OPTION]... COMMAND [INITIAL-ARGS]...
Run COMMAND with arguments INITIAL-ARGS and more arguments read from input.

Mandatory and optional arguments to long options are also
mandatory or optional for the corresponding short option.

-0, --null           items are separated by a null, not whitespace;
                      disables quote and backslash processing and
                      logical EOF processing
-a, --arg-file=FILE   read arguments from FILE, not standard input
-d, --delimiter=CHARACTER items in input stream are separated by CHARACTER,
                           not by whitespace; disables quote and backslash
                           processing and logical EOF processing
-E END               set logical EOF string; if END occurs as a line
                      of input, the rest of the input is ignored
                      (ignored if -0 or -d was specified)
-e, --eof[=END]       equivalent to -E END if END is specified;
                      otherwise, there is no end-of-file string
-I R                 same as --replace=R
-i, --replace[=R]      replace R in INITIAL-ARGS with names read
                      from standard input, split at newlines;
                      if R is unspecified, assume {}
-L, --max-lines=MAX-LINES use at most MAX-LINES non-blank input lines per
                           command line
...
$ head --help
Usage: head [OPTION]... [FILE]...
Print the first 10 lines of each FILE to standard output.
With more than one FILE, precede each with a header giving the file name.
With no FILE, or when FILE is -, read standard input.
...
```

Options :

6406532036073. ✓ find . -type f -name '*.md' | xargs -L 1 head

6406532036074. ✓ head \$(find . -type f -name '*.md')

6406532036075. ✘ find . -type f -name '*.*md*' | xargs -L 1 head

6406532036076. ✘ find . type f | grep md | head

Sub-Section Number : 5
Sub-Section Id : 64065387655
Question Shuffling Allowed : Yes
Is Section Default? : null

Question Number : 460 Question Id : 640653609577 Question Type : MSQ Is Question

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

Correct Marks : 8 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the corner case(s) from stdin that makes this SED command fail to replace all the three-character month names with the corresponding numbers.

```
#!/bin/bash

# Associative array
declare -A month_to_number

month_to_number=(
    ["Jan"]=1 ["Feb"]=2 ["Mar"]=3 ["Apr"]=4
    ["May"]=5 ["Jun"]=6 ["Jul"]=7 ["Aug"]=8
    ["Sep"]=9 ["Oct"]=10 ["Nov"]=11 ["Dec"]=12
) # ([key]=value)

read -r line
for m in "${!month_to_number[@]}"; do
    # get from stdin
    [[ "$line" =~ $m ]] || continue
    echo "$line" | sed "s/$m/${month_to_number[$m]}/"
done
```

Options :

6406532036082. ✶ 12/Jan/2017

6406532036083. ✶ 22-Aug-1999 Morning

6406532036084. ✓ 17/Feb/1888, 7/May/1999

6406532036085. ✓ 18/jul/2047

6406532036086. ✶ 19 Sep 2023 18:00

Question Number : 461 Question Id : 640653609579 Question Type : MSQ Is Question

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

Correct Marks : 8 Max. Selectable Options : 0

Question Label : Multiple Select Question

Complete the script to print the name in the order of the given name and family name from the file `name_country.csv`. In some countries, people keep their family name as their first name and their given name as their last name.

Note: `name_country.csv` is a comma-separated file with first name, last name and country as field values. The file `family_name_first_countries.txt` has the country name where the family name is used as the first name.

```
#!/bin/bash

awk '
BEGIN {
    FS=","
}
FILENAME == "family_name_first_countries.txt" {
    family_name_first_countries[$0]++
}
# Fill here
' family_name_first_countries.txt name_country.csv
```

Options :

```
FILENAME == "name_country.csv" && $3 in family_name_first_countries {
    if ($3 in family_name_first_countries) {
        print $2, $1
    } else {
        print $1, $2
    }
}
```

6406532036091. ✘

```
FILENAME == "name_country.csv" {
    if ($3 in family_name_first_countries) {
        print $2, $1
    } else {
        print $1, $2
    }
}
```

6406532036092. ✓

```
FILENAME == "name_country.csv" && $3 in family_name_first_countries {  
    print $2, $1  
}  
FILENAME == "name_country.csv" && !($3 in family_name_first_countries) {  
    print $1, $2  
}
```

6406532036093. ✓

```
FILENAME == "name_country.csv" && !($3 in family_name_first_countries) {  
    print $2, $1  
}  
FILENAME == "name_country.csv" && $3 in family_name_first_countries {  
    print $1, $2  
}
```

6406532036094. ✘

Question Number : 462 Question Id : 640653609586 Question Type : MSQ Is Question

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

Correct Marks : 8 Max. Selectable Options : 0

Question Label : Multiple Select Question

A file contains data collected starting from 4th April 2004. The data is collected on 4th, 14th and 24th of April, May and June since then.

The text file, however, does not contain the date information in it. Now it is needed to add a column to this text file with the date format 4 April, 2004.

Identify which of the following command (using brace expansion and date command) will create a column to an empty file with the desired format starting from **4 April, 2004 to 24 June, 2005**.

Note:

The output of the command need not produce dates in temporal order.

Hint:

Use the following information.

```

$ echo {1..4}{b..d}
1b 1c 1d 2b 2c 2d 3b 3c 3d 4b 4c 4d
$ echo {1..4}";'{b..d}
1;b 1;c 1;d 2;b 2;c 2;d 3;b 3;c 3;d 4;b 4;c 4;d
$ echo 10 20
10 20
$ echo 10 20| tr ' ' '\n'
10
20
$ date -d '04/21/2002' +'%B %d,%Y'
April 21,2002
$ echo 04/21/2002 |xargs -I {} date -d {} +'%B %d,%Y'
April 21,2002

```

Options :

6406532036110. ✓ echo {4..6}"/{4,14,24}"/{2002,2005}| tr ' ' '\n'| xargs -I {} date -d {} +'d %B,%Y'

6406532036111. ✘ echo {4..6}"/{4,14,24}"/{2002,2005}"\n"| xargs -I {} date -d {} +'B %d,%Y'

6406532036112. ✘ echo -e {4..6}" "{June,July,August}","{2004..2005}"\n| xargs -I{} date -d {}+'B %d,%Y'

6406532036113. ✓ echo -e {4..6}"/{4..24..10}"/{2002,2005}"\n| xargs -I {} date -d {} +'d %B,%Y'

Sub-Section Number : 6

Sub-Section Id : 64065387656

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 463 Question Id : 640653609576 Question Type : SA Calculator : None

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

Correct Marks : 7

Question Label : Short Answer Question

```
#!/bin/bash

directory="$1"
tarball_name="$2"
tar -cvf "$tarball_name.tar" "$directory"
```

```
$ tar --help
Usage: tar [OPTION...] [FILE]...
GNU 'tar' saves many files together into a single tape or disk archive, and can
restore individual files from the archive.
```

Examples:

```
tar -cf archive.tar foo bar # Create archive.tar from files foo and bar.
tar -tvf archive.tar        # List all files in archive.tar verbosely.
tar -xf archive.tar        # Extract all files from archive.tar.
```

Main operation mode:

```
-A, --catenate, --concatenate  append tar files to an archive
-c, --create                  create a new archive
...
-x, --extract, --get          extract files from an archive
```

Device selection and switching:

```
--force-local                archive file is local even if it has a colon
-f, --file=ARCHIVE           use archive file or device ARCHIVE
...
```

Informative output:

```
...
-v, --verbose                 verbosely list files processed
...
```

What will be the output tar file name if no input (null string) is given as the second argument?
Assume the first argument of input is valid.

Note: Ensure no space before and after your answer

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

.tar

Sub-Section Number : 7

Sub-Section Id : 64065387657

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653609581 **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 : (464 to 465)

Question Label : Comprehension

```
#!/bin/bash
prn_num(){
    for c in 1 2 3 4 3 2 1; do
        sleep 0.5
        echo -n $c
    done
}

for i in {1..3}; do #first loop
    prn_num
done

for _ in {1..3}; do #second loop
    prn_num &
done
```

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 464 Question Id : 640653609582 Question Type : SA Calculator : None

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

Correct Marks : 7

Question Label : Short Answer Question

What is the output of the **first loop** at the end of the execution of the given script?

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

123432112343211234321

Question Number : 465 Question Id : 640653609583 Question Type : SA Calculator : None

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

Correct Marks : 7

Question Label : Short Answer Question

What will be the output of the **second loop** after the execution of the given script?

Response Type : Alphanumeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Answers Case Sensitive : No

Text Areas : PlainText

Possible Answers :

111222333444333222111