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

Correct Marks : 3

Question Label : Short Answer Question

An LED manufacturer determines that in order to sell x number of LEDs, the price per LED(in thousands) must be $f(x) = 1000 - x$, if $x \leq 800$, and the manufacturer also determines that the total cost(in thousands) of producing x number of LEDs is

$$g(x) = \begin{cases} 30000 + 300x & \text{if } x \leq 400, \\ 100x + 110000 & \text{if } 400 < x \leq 800 \end{cases}$$

Although in the above context, x can take only integer values, assume that x is a continuous variable in the interval $[0, 800]$ and that the functions $f(x)$ and $g(x)$ are defined as above on this entire interval.

Suppose the company can produce a maximum of 400 LEDs due to a production issue. The number of LEDs the company should produce and sell in order to maximize profit is

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

350

Sem1 Statistics1

Section Id :	64065349235
Section Number :	6
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	13
Number of Questions to be attempted :	13
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 :	640653103055
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 187 Question Id : 640653696802 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 I: STATISTICS FOR DATA SCIENCE I (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 :

6406532327576. ✔ YES

6406532327577. ✖ NO

Sub-Section Number :	2
Sub-Section Id :	640653103056
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 188 Question Id : 640653696803 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 repairman services five washing machines each day. For each machine, there is a 50% chance that the repair will involve installing a specific part. Find the probability that at most one washing machine out of the five will need this part for installation.

Options :

6406532327578. ✖ $\frac{1}{32}$

6406532327579. ✖ $\frac{5}{32}$

6406532327580. ✔ $\frac{6}{32}$

6406532327581. ✖ $\frac{3}{32}$

Sub-Section Number :	3
Sub-Section Id :	640653103057
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 189 Question Id : 640653696807 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 shopkeeper has five red, four black and two blue pens. A customer went to his shop and selects three pens at random. Find the total number of ways in which the customer can select the pens of different colours.

Options :

6406532327587. ✖ 20

6406532327588. ✖ 11

6406532327589. ✔ 40

6406532327590. ✖ 65

Question Number : 190 Question Id : 640653696812 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 box contains 10 red balls and 3 blue balls. Four balls are drawn at random from the urn without replacement. Let the random variable X denote the number of red balls that are drawn from the box. Find the possible values that X can take.

Options :

6406532327597. ✔ {1, 2, 3, 4}

6406532327598. ✖ {1, 2, . . . , 10}

6406532327599. ✖ {0, 1, 2, 3, 4}

6406532327600. ✖ {0, 1, 2, . . . , 10}

Question Number : 191 Question Id : 640653696817 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

If X and Y are independent Poisson random variables with parameter 2, then find the Var$(2X - Y)$.

Options :

6406532327608. ✖ 2

6406532327609. ✖ 11

6406532327610. ✖ 6

6406532327611. ✔ 10

Sub-Section Number : 4

Sub-Section Id : 640653103058

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 192 Question Id : 640653696813 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?

Options :

6406532327601. ✔ Vehicle Number plate has a nominal scale of measurement.

6406532327602. ✖ Phone brand has an ordinal scale of measurement.

6406532327603. ✖ Amount of milk (in litres) is a numeric and discrete variable.

6406532327604. ✔ Life of a bulb (in hours) has a ratio scale of measurement.

Sub-Section Number : 5

Sub-Section Id : 640653103059

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 193 Question Id : 640653696811 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 random variable X has the following probability mass function:

X	0	2	x_3
$P(X = x)$	$3k$	k	$6k$

If $E(X) = 2$, then what will be the value of x_3?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

3

Question Number : 194 Question Id : 640653696814 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 data of the different languages spoken by the students of a class is given in the following table.

Language	Number of students	Relative frequency
Arabic	6	
German		
Spanish	15	
Hindi		
Vietnamese	27	0.3

Table 1:

If Hindi is the only mode of the given data, then what is the maximum possible value of relative frequency of German? (Enter the answer correct to 3 decimal places)

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.151 to 0.161

Question Number : 195 Question Id : 640653696815 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

How many numbers can be formed using the digits 0, 1, 3, 5, 7, 9 (without repetition), such that the number formed is greater than 20, 000?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

1080

Sub-Section Number : 6

Sub-Section Id : 640653103060

Question Shuffling Allowed : Yes

Is Section Default? : null

Question Number : 196 Question Id : 640653696816 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

From an ordinary deck of 52 cards, suppose five cards are selected at random without replacement. Find the probability that at least one card is a face card. 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 :

0.72 to 0.78

Sub-Section Number : 7

Sub-Section Id : 640653103061

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653696804 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 : (197 to 198)

Question Label : Comprehension

Suppose the lifetime of a radio is uniformly distributed between α to 150 weeks. Based on the given information, answer the sub questions:

Sub questions

Question Number : 197 Question Id : 640653696805 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 the expected lifetime of a radio is 130 weeks, then find the value of α.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

110

Question Number : 198 Question Id : 640653696806 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 conditional probability that the battery will last for more than 140 weeks given that it has already worked for more than 130 weeks?

Options :

6406532327583. ✖ $\frac{1}{4}$

6406532327584. ✔ $\frac{1}{2}$

6406532327585. ✖ $\frac{3}{4}$

6406532327586. ✖ 1

Question Id : 640653696808 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 200)

Question Label : Comprehension

A telecom company is assessing the potential issues with its latest smartphone model. There is a probability of 0.35 for a software glitch, probability of 0.25 for battery issues, and 0.40 for defects in some other component.

Based on the above data, answer the given subquestions.

Sub questions

Question Number : 199 Question Id : 640653696809 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 that the issue is the software glitch or the battery, if the probability of having both issues simultaneously is 0.12?

Options :

6406532327591. ✔ 0.48

6406532327592. ✖ 0.60

6406532327593. ✖ 0.09

6406532327594. ✖ 0.20

Question Number : 200 Question Id : 640653696810 Question Type : SA Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Short Answer Question

What is the probability that there is no issue with either the software or the battery in the smartphone? 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 :

0.50 to 0.54

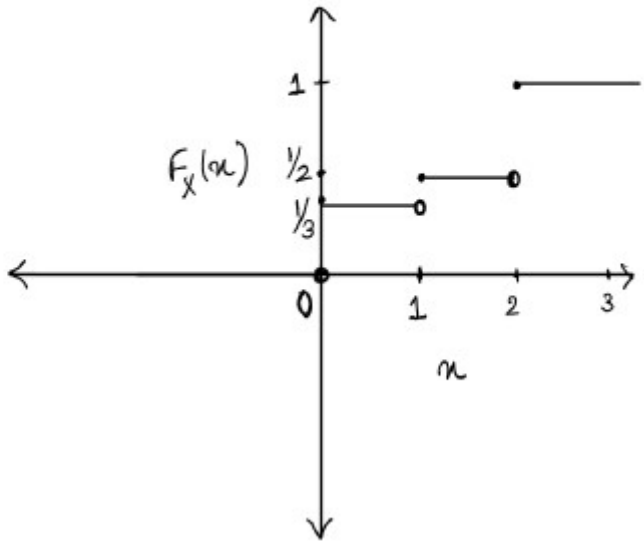
Sub-Section Number :	8
Sub-Section Id :	640653103062
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653696818 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 : (201 to 202)

Question Label : Comprehension

Let X be a discrete random variable with the following CDF:



Based on the above data, answer the given subquestions.

Sub questions

Question Number : 201 Question Id : 640653696819 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 $P(X = 1)$. 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 :

0.14 to 0.20

Question Number : 202 Question Id : 640653696820 Question Type : MCQ Is Question Mandatory : No Calculator : None Response Time : N.A Think Time : N.A Minimum Instruction Time : 0

Correct Marks : 2

Question Label : Multiple Choice Question

Find the value of $P(X \geq 0 \mid X < 1)$.
Enter the answer correct to two
decimal places.

Options :

6406532327613. ✖ 0

6406532327614. ✔ 1

6406532327615. ✖ 0.5

6406532327616. ✖ 0.33

Sem2 Maths2

Section Id :	64065349236
Section Number :	7
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 :	640653103063
Question Shuffling Allowed :	No