

6406532238044. ✓ R_2 is a symmetric relation.

6406532238045. ✗ R_1 is not a transitive relation.

6406532238046. ✗ R_2 is a transitive relation.

Question Number : 73 Question Id : 640653667879 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 options is true?

Options :

6406532238047. ✗ R_1 is a function.

6406532238048. ✓ R_2 is a function.

6406532238049. ✗ R_2 is not a one-one function.

6406532238050. ✗ R_2 is not an onto function.

Sem1 Statistics1

Section Id :	64065344874
Section Number :	4
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	11
Number of Questions to be attempted :	11
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 :	64065394991
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 74 Question Id : 640653667880 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 :

6406532238051.  YES

6406532238052.  NO

Sub-Section Number :	2
Sub-Section Id :	64065394992
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 75 Question Id : 640653667881 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 the population standard deviation and the sample standard deviation for a dataset be $3\sqrt{2}$ and $2\sqrt{5}$, respectively. Find the number of observations in the dataset.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

10

Sub-Section Number : 3

Sub-Section Id : 64065394993

Question Shuffling Allowed : No

Is Section Default? : null

Question Id : 640653667882 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 : (76 to 77)

Question Label : Comprehension

The Head of the transportation facility at the IIT Madras campus wants to conduct a survey to rate the bus services offered to all the students. He randomly selects 100 final year students from the campus. Based on the given information, answer the subquestions

Sub questions

Question Number : 76 Question Id : 640653667883 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

Identify the sample and the population.

Options :

6406532238054. ✔ The population is all the students at IIT Madras campus.

6406532238055. ✖ The sample is all the final year students at IIT Madras campus.

6406532238056. ✔ The sample is 100 randomly selected final year students at IIT Madras campus.

6406532238057. ✖ The population is all the final year students at IIT Madras campus.

Question Number : 77 Question Id : 640653667884 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 correct statement from the following.

Options :

6406532238058. ✖ Selected sample is a good representation of the population.

6406532238059. ✔ Selected sample is not a good representation of the population.

Question Id : 640653667891 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 : (78 to 79)

Question Label : Comprehension

Figure Q.2 shows the pie chart representation of the sales distribution of five different fruits in a fruit shop.

Based on the given information, answer the subquestions

Sales Distributions of 5 different fruits

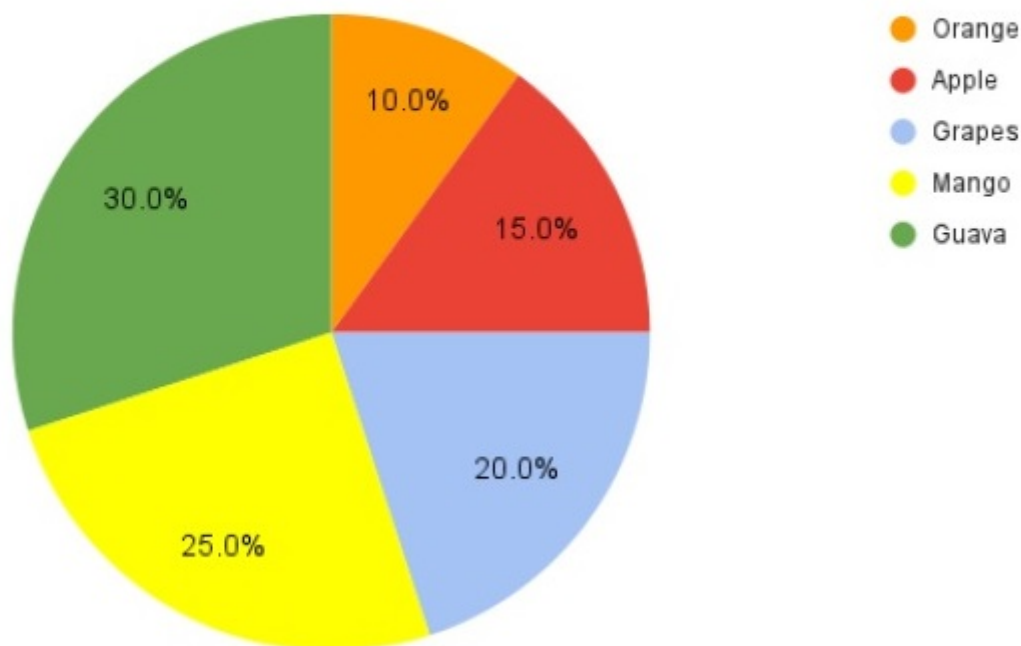


Figure Q.2: Sales distribution of 5 different fruits

Sub questions

Question Number : 78 Question Id : 640653667892 Question Type : SA Calculator : None

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

Correct Marks : 2

Question Label : Short Answer Question

If a total of 500 fruits are sold on a given day, then find the number of mangoes sold.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

125

Question Number : 79 Question Id : 640653667893 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 correct statement(s) from the following.

Options :

6406532238071. ✔ The slices of pie chart adds up to 100%.

6406532238072. ✖ Median of the data is Grapes.

6406532238073. ✔ Mode of the data is Guava.

6406532238074. ✖ The pie chart is misleading because it does not obey the area principle.

Sub-Section Number :	4
Sub-Section Id :	64065394994
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Id : 640653667885 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 : (80 to 81)

Question Label : Comprehension

An analyst wants to check whether the number of hours a student spent in learning is related to their exam performance. She randomly selects 6 students from the top 15 students of the class and data for the same is tabulated in Table Q.1.

Student	Result	Number of hours
Student 1	Fail	19
Student 2	Pass	20
Student 3	Fail	18
Student 4	Pass	25
Student 5	Pass	13
Student 6	Fail	20

Table Q.1 : Number of hours spent by students

Based on the given information, answer the subquestions

Sub questions

Question Number : 80 Question Id : 640653667886 Question Type : SA Calculator : None

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

Correct Marks : 5

Question Label : Short Answer Question

Calculate the absolute value of Point Bi-serial correlation coefficient between the result and number of hours spent. Enter the answer correct to three decimal places.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Range

Text Areas : PlainText

Possible Answers :

0.04 to 0.05

Question Number : 81 Question Id : 640653667887 Question Type : MCQ Is Question

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

Correct Marks : 2

Question Label : Multiple Choice Question

Are the exam results of the selected students strongly influenced by the number of hours spent studying?

Options :

6406532238061. ✖ Yes, because the absolute value of Point Bi-serial coefficient is close to 1.

6406532238062. ✖ No, because the absolute value of Point Bi-serial coefficient is close to 1.

6406532238063. ✖ Yes, because the absolute value of Point Bi-serial coefficient is close to 0.

6406532238064. ✔ No, because the absolute value of Point Bi-serial coefficient is close to 0.

Question Id : 640653667888 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 : (82 to 83)

Question Label : Comprehension

The annual package (in lakhs) offered to students of management studies in IIT Madras is represented in Figure Q.1.

Based on the given information, answer the subquestions

Stem	Leaf
1	0 2 6
2	5 5 5
3	0 2 4
4	1

Here, 1 | 0 represents 10 lakhs.

Figure Q.1

Sub questions

Question Number : 82 Question Id : 640653667889 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 average annual package of the students if each observation is doubled after subtracting 5 from it?

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

40

Question Number : 83 **Question Id :** 640653667890 **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 population variance of the given data if 5 is subtracted from each observations?

Options :

6406532238066. ✖ 78.6

6406532238067. ✖ 83.6

6406532238068. ✔ 88.6

6406532238069. ✖ 93.6

Sub-Section Number :	5
Sub-Section Id :	64065394995
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 84 **Question Id :** 640653667894 **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

Table Q.2 represents the marks (out of 50) of five students in Chemistry and Biology exam papers.

Chemistry	20	25	30	35	40
Biology	25	20	30	20	30

Table Q.2 : Marks obtained in Chemistry and Biology

What is the correlation coefficient between the marks of both the exam papers? 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 :

0.29 to 0.35

Sub-Section Number :	6
Sub-Section Id :	64065394996
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 85 Question Id : 640653667895 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?

Options :

- 6406532238076. ✖ Eye colour of a person has ordinal scale of measurement.
- 6406532238077. ✔ Recording the price of bitcoin every hour for 3 days is a time-series data.

6406532238078. ✔ Number of students present in a class is a discrete variable.

6406532238079. ✖ Amount of milk (in litres) is a categorical variable.

Question Number : 86 Question Id : 640653667896 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

Sunidhi purchased 5 t-shirts of sizes M, L, S, XL, S for her cousins. Later she purchased one more t-shirt of size M , then choose the correct option(s) from the following:

Options :

6406532238080. ✔ Median of the new data is same as of old data.

6406532238081. ✔ New data will be bimodal.

6406532238082. ✖ Median of the new data will change.

6406532238083. ✖ New data will be unimodal.

Sub-Section Number :	7
Sub-Section Id :	64065394997
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 87 Question Id : 640653667897 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

If $m_1 = \frac{x_1 + x_2 + \dots + x_n}{n}$, $m_2 = \frac{x_2 + x_3 + \dots + x_{n+1}}{n}$ and $m_3 = \frac{x_3 + x_4 + \dots + x_{n+2}}{n}$, then choose the correct option(s).

Options :

6406532238084. ✖ $m_2 = m_1 + \frac{(x_{n+1} - x_3)}{n}$

6406532238085. ✔ $m_3 = m_2 + \frac{(x_{n+2} - x_2)}{n}$

6406532238086. ✖ $m_2 = m_1 + \frac{(x_{n+1} - x_2)}{n}$

6406532238087. ✔ $m_2 = m_1 + \frac{(x_{n+1} - x_1)}{n}$

Sub-Section Number :	8
Sub-Section Id :	64065394998
Question Shuffling Allowed :	Yes
Is Section Default? :	null

Question Number : 88 Question Id : 640653667898 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 IQR (Interquartile range) of the data 14, 20, 40, 23 and 18.

Response Type : Numeric

Evaluation Required For SA : Yes

Show Word Count : Yes

Answers Type : Equal

Text Areas : PlainText

Possible Answers :

5

Sem2 English2

Section Id :	64065344875
Section Number :	5
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	37
Number of Questions to be attempted :	37
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 :	64065394999
Question Shuffling Allowed :	No
Is Section Default? :	null

Question Number : 89 Question Id : 640653667899 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

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