Sem1 Statistics1

Question Number : 70 Question Id : 640653825649 Question Type : MSQ

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

Figure Q.1 shows the sales distribution of the number of bottles of different types of soft drinks in a shop on a particular day.

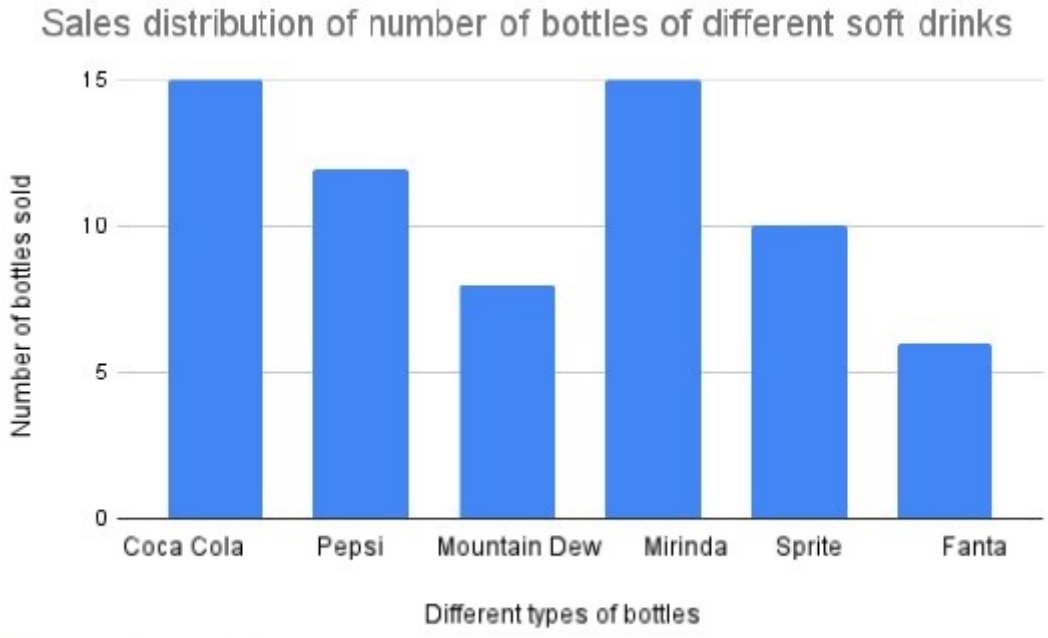

Figure Q.1: Sales Distribution of different types of bottles

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

Options :

✖ Median of the data will be either “Mountain Dew” or “Mirinda”.

✔ The data is bimodal.

✖ Mode is not defined for the given data.

✔ Median is not defined for the given data.

Question Number : 71 Question Id : 640653825654 Question Type : MSQ

Correct Marks : 2 Max. Selectable Options : 0

Question Label : Multiple Select Question

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

Options :

✖ Structured data does not follow a predefined format, whereas unstructured data does.

✖ Recording of the data over time comes under Cross Sectional data.

✔ Time (in minutes) taken by a student to reach school from his home is a continuous variable.

✔ Comments on a youtube video comes under the unstructured data.

Question Numbers : (72 to 73)

Question Label : Comprehension

Table Q.1 represents the number of books read by five students in a year.

Students	Number of books	Relative frequency
Sunil	15	x
Prateek		y
Kanika	6	0.1
Kunal	15	
Sonakshi		z

Table Q.1

Based on the above data, answer the given subquestions

Sub questions

Question Number : 72 Question Id : 640653825651 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

What is the value of *x*? Enter the answer correct to two decimal places.

Response Type : Numeric

Possible Answers :

0.23 to 0.27

Question Number : 73 Question Id : 640653825652 Question Type : MCQ

Correct Marks : 3

Question Label : Multiple Choice Question

If the number of books read by Prateek is same as the number of books read by Sonakshi, then find the value of $y + z$.

Options :

✖ 0.2

✖ 0.24

✔ 0.4

✖ Insufficient information.

Question Numbers : (74 to 75)

Question Label : Comprehension

Amit took a survey of a group of 32 college going students (consisting only of male and female students) to know whether they own a smartphone or not and he got to know the following information.

(i). There are 3 males who do not own a smartphone.
(ii). There are total 27 females.
(iii). There are total 26 students who do not own a smartphone.

Based on the above information, answer the given subquestions.

Sub questions

Question Number : 74 Question Id : 640653825665 Question Type : MCQ

Correct Marks : 2

Question Label : Multiple Choice Question

Create a two-way contingency table and find out the number of males in this group who own a smartphone?

Options :

✖ 0

✔ 2

✖ 3

✖ 4

Question Number : 75 Question Id : 640653825666 Question Type : MSQ

Correct Marks : 3 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the correct option(s) after making a two-way contingency table.

Options :

✖ There are 40% of the males who do not own a smartphone.

✔ There are 14.81% of the females who own a smartphone.

✔ 18.75% of the total students own a smartphone.

✖ We can calculate covariance to find the association between “Gender” and “Ownership of the smartphone”.

Question Number : 76 Question Id : 640653825653 Question Type : MCQ
Correct Marks : 3
Question Label : Multiple Choice Question
Consider the following three statements:

Statement 1 : Election symbol is a categorical variable.
Statement 2 : Election symbol has a nominal scale of measurement.
Statement 3 : Number of votes received by a candidate is a continuous variable.

Choose the correct option from the following:
Options :

✖ Statement-2 and statement-3 both are correct.

✖ Statement-1 and statement-3 both are correct.

✔ Statement-1 and statement-2 both are correct.

✖ All statements are correct.

Question Number : 77 Question Id : 640653825655 Question Type : MCQ
Correct Marks : 2
Question Label : Multiple Choice Question
Choose the correct statement from the following:
Options :

✖ Descriptive statistics is concerned with drawing of conclusions from the sample data.

✖ Inferential statistics is concerned with describing and summarizing the data.

✖ Inferential statistics doesn’t require sample data.

✔ All statements are incorrect.

Question Number : 78 Question Id : 640653825667 Question Type : MCQ
Correct Marks : 2

Question Label : Multiple Choice Question

Consider the following four images of the Scatter plot.

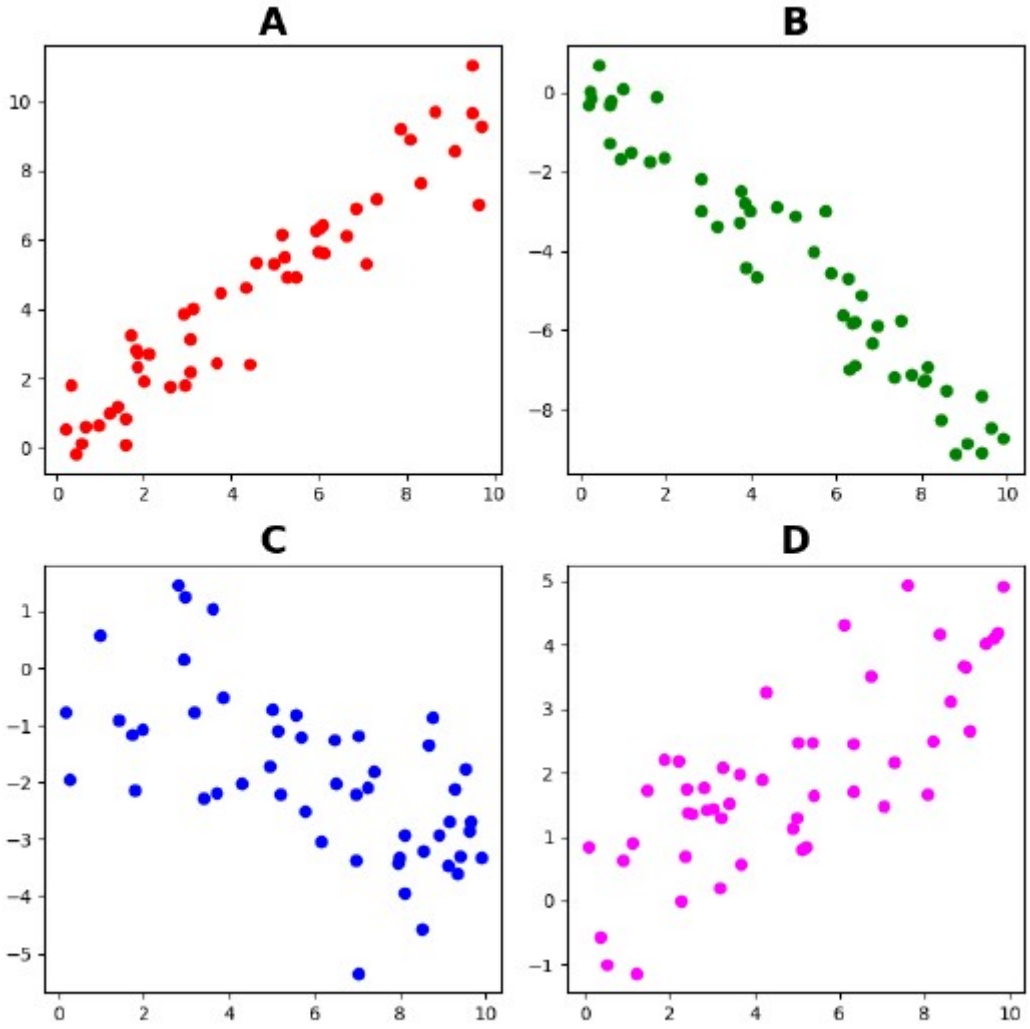

Figure Q.2 : Scatterplots

Please select the option that will represent the correlation values arranged in ascending order.

Options :

✖ *A < B < C < D*

✔ *B < C < D < A*

✖ *B < A < C < D*

✖ *A < D < C < B*

Question Number : 79 Question Id : 640653825656 Question Type : SA

Correct Marks : 3

Question Label : Short Answer Question

If the mean of the observations $x_1, x_2, \ldots, x_8$ is 6 and the mean of observations $x_8, x_9, \ldots, x_{15}$ is 13. Given that $x_8 = 3$, what will be the mean of the observations $x_1, x_2, \ldots, x_{15}$?

Response Type : Numeric

Possible Answers :

9.90 to 9.96

Question Number : 80 Question Id : 640653825668 Question Type : SA

Correct Marks : 3

Question Label : Short Answer Question

Find the population covariance between *X* and *Y* for the dataset given in Table Q.2.

X	-3	-4	-5	5	4	3
Y	10	5	3	3	5	10

Table Q.2

Response Type : Numeric

Possible Answers :

0

Question Numbers : (81 to 83)

Question Label : Comprehension

The marks (out of 100) scored by Manoj in a semester exam are given as 60, 70, 65, 75, 80. If Nitin has scored 5 marks more than Manoj in each subject.

Based on the given information, answer the subquestions.

Sub questions

Question Number : 81 Question Id : 640653825658 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

Find the mean of the marks scored by Nitin.

Response Type : Numeric

Possible Answers :

75

Question Number : 82 Question Id : 640653825659 Question Type : MCQ

Correct Marks : 4

Question Label : Multiple Choice Question

If the teacher wants to give the marks out of 50 and modify the marks for every student as

$$\text{Modified marks} = \frac{\text{Marks} \times 50}{100}$$

What is the population variance of the modified marks scored by Manoj?

Options :

✖ 25

✖ 50

✔ 12.5

✖ Cannot determine

Question Number : 83 Question Id : 640653825660 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

Calculate the correlation coefficient between the marks scored by Manoj and Nitin.

Response Type : Numeric

Possible Answers :

1

Question Id : 640653825661 Question Type : COMPREHENSION Sub Question Shuffling

Allowed : No Group Comprehension Questions : No Question Pattern Type : NonMatrix Question Numbers : (84 to 85)

Question Label : Comprehension

The stem and leaf diagram below shows the ages (in years) of a group of people attending the Paradox event.

Stem	Leaf
1	4 5 8
2	1 2 4
3	1 1 2 3 3 3 4

Here, 1 | 4 represents 14 years.

Based on the above data, answer the given subquestions

Sub questions

Question Number : 84 Question Id : 640653825662 Question Type : SA

Correct Marks : 2

Question Label : Short Answer Question

What will be the median age for this group?

Response Type : Numeric

Possible Answers :

31

Question Number : 85 Question Id : 640653825663 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

How many people are above 23 years of Age in the given stem and leaf plot?

Response Type : Numeric

Possible Answers :

8

Question Number : 86 Question Id : 640653825669 Question Type : SA

Correct Marks : 1

Question Label : Short Answer Question

The mode of the observations $x_1, x_2, \ldots, x_n$ is 40. What is the mode of the observations $2x_1 + 10, 2x_2 + 10, \ldots, 2x_n + 10$?

Response Type : Numeric

Possible Answers :

90

Question Number : 87 Question Id : 640653825670 Question Type : MSQ

Correct Marks : 1 Max. Selectable Options : 0

Question Label : Multiple Select Question

Choose the correct option(s):

Options :

✔ 25th percentile is known as the first quartile.

✖ Median is the 60th percentile of any data.

✖ Inter-quartile range is defined as the difference between third quartile and second quartile.

✔ We need to arrange the data in ascending order to calculate the percentile.