

(4)

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(c) A game of chance consists of spinning an arrow which comes to rest pointing at one of the numbers 1, 2, 4, 5, 6, 7 and 8, and these are equally likely outcomes. What is the probability that it will point at : (CO4)

(i) 8 ?

(ii) An odd number ?

(iii) A number greater than 2 ?

(iv) A number less than 9 ?

#### Section—B

#### 5. Case Study :

20 Marks

Given that there is a 85% probability that any given adult is aware about Samvardhana Motherson International Ltd. A company that is engaged in manufacturing of automobile parts, use the binomial probability formula to find and prepare the probability of getting exactly three adults who known about Samvardhana Motherson International Ltd. when five adults are randomly chosen. (CO5)

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### B. B. A. (THIRD SEMESTER)

#### END SEMESTER

EXAMINATION, Jan., 2023

BUSINESS STATISTICS

Time : Three Hours

Maximum Marks : 100

Note : (i) This question paper contains two Sections A and B.

(ii) Both sections are compulsory.

(iii) Answer any *two* sub-questions among (a), (b) and (c) in each main question.

(iv) Each sub-question carries 10 marks.

#### Section—A

1. (a) The following table gives the daily income of 50 workers of a factory : (CO1)

Daily Income in (₹)	Number of workers
100—120	12
120—140	14
140—160	8
160—180	6
180—200	10

Find the mean, mode and median of the above data.

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(b) Define the following term(s). (CO1)

- (i) Arithmetic Mean
- (ii) Standard Deviation
- (iii) Variance
- (iv) Mode

(c) Relate the importance of data collection in analyzing the inference in statistical decision making. Give suitable examples to support your answer. (CO1)

2. (a) Compute the correlation coefficient between the corresponding values of X and Y in the following table : (CO2)

X	Y
2	18
4	12
5	10
6	8
8	7
11	5

(b) Explain the meaning, nature and significance of business forecasting in business statistics. (CO2)

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(c) Discuss the importance of Arithmetic mean in the context of time series analysis, also identify the different types of time series methods used in business statistics. (CO2)

3. (a) What do you mean by Sampling ? Illustrate the importance of sampling techniques in business statistics. (CO3)

(b) Write about the importance of sampling and non-sampling error and how is it related to permutation and combination. (CO3)

(c) In a group of 10 people, a ₹ 20, ₹ 10 and ₹ 5 prize will be given. How many ways can the prize be distributed ? (Solve using permutation formula). (CO3)

4. (a) In a game played with one person by tossing two fair coins examine the probability of getting : (CO4)

- (i) At least one head
- (ii) At least one tail
- (iii) Two heads
- (iv) Two tails

(b) Examine how the rule of theorem for addition and multiplication is different in computation of probability; also explain the Baye's theorem. (CO4)

P. T. O.