

Which set of data has the highest average?
 In which set of data is the spread of data
 under a normal distribution? If possible, give reasons.
 Which manufacturing process would be
 preferred by the buyer? Why?

OR

(b) The median and mode of the following
 marks are known to be 33.5 and 34
 respectively. However, these frequencies
 are missing. Determine their values.

| Marks | No. of students |
|-------|-----------------|
| 0-10 | 4 |
| 10-20 | 10 |
| 20-30 | 7 |
| 30-40 | 8 |
| 40-50 | 7 |
| 50-60 | 6 |
| 60-70 | 4 |
| Total | 238 |

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(1)

H No. of Candidates Roll No.

BBA-302

B. B. A. (THIRD SEMESTER)
MID SEMESTER EXAMINATION, 2022
BUSINESS STATISTICS

Time : 1½ Hours

Maximum Marks : 50

Note : (i) Answer all the questions by choosing
 any **one** of the sub-questions.

(ii) Each question carries 10 marks.

1. (a) "Statistics are like clay of which you can
 make a God or Devil as you please." In the
 light of this statement, identify the uses
 and limitations of statistics. (CO1)

OR

(b) Calculate the average profit by shortcut
 method (Assumed mean method) from the
 following illustration : (CO1)

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| Profits (in lakh) | No. of Companies |
|-------------------|------------------|
| 200—400 | 500 |
| 400—600 | 300 |
| 600—800 | 280 |
| 800—1000 | 120 |
| 1000—1200 | 100 |
| 1200—1400 | 80 |
| 1400—1600 | 20 |

2. (a) Explain the various methods that are used for business forecasting. Why is time series considered to be an effective tool for forecasting analysis? Explain. (CO2)

OR

- (b) Below are given the figures of production (in m tonnes) of a sugar factory : (CO2)

| Year | Production |
|------|------------|
| 2006 | 80 |
| 2007 | 90 |
| 2008 | 92 |
| 2009 | 83 |
| 2010 | 94 |
| 2011 | 99 |
| 2012 | 92 |

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- (i) Fit a straight line trend to these figures.

- (ii) Plot these figures on a graph and show trend line.

- (iii) Estimate the likely sales of the company during 2016.

3. (a) Distinguish between primary and secondary data. Give a brief account of the chief methods of collecting primary data and bring out their merits and defects.

(CO4)

OR

- (b) Calculate the harmonic mean from the following frequency distribution : (CO4)

| Observations | Frequency |
|--------------|-----------|
| 0—10 | 8 |
| 10—20 | 15 |
| 20—30 | 20 |
| 30—40 | 4 |
| 40—50 | 3 |

P. T. O.

4. (a) Apply the method of least squares to obtain the trend values from the following data : (CO3)

| Year | Sales (₹) |
|------|-----------|
| 2006 | 100 |
| 2007 | 120 |
| 2008 | 110 |
| 2009 | 140 |
| 2010 | 80 |

Also predict the sales for the year 2017.

OR

- (b) An examination of eight applications for a clerical post was taken by the firm. From the marks obtained by the applicants in the Accountancy and Statistics papers, compute rank coefficients of correlation :

(CO3)

| Applicant | Marks in Accountancy | Marks in Statistics |
|-----------|----------------------|---------------------|
| A | 15 | 40 |
| B | 20 | 30 |
| C | 28 | 50 |
| D | 12 | 30 |
| E | 40 | 20 |
| F | 60 | 10 |
| G | 20 | 30 |
| H | 80 | 60 |

5. (a) Suppose the samples of polythene bags from 2 manufacturers A and B are tested by a prospective buyer for bursting pressure, with the following results :

(CO5)

| Bursting Pressure | A | B |
|-------------------|----|----|
| 5.0—9.9 | 2 | 9 |
| 10.0—14.9 | 9 | 11 |
| 15.0—19.9 | 29 | 18 |
| 20.0—24.9 | 54 | 32 |
| 25.0—29.9 | 11 | 27 |
| 30.0—34.9 | 5 | 13 |

P. T. O.

Which set of bag has the highest average bursting pressure ? Which has more uniform pressure ? If prices are the same, which manufacturer's bags would be preferred by the buyer ? Why ?

OR

- (b) The median and mode of the following marks are known to be 33.5 and 34 respectively. However, three frequencies are missing. Determine their values :

(CO5)

| Marks | No. of Students |
|-------|-----------------|
| 0—10 | 4 |
| 10—20 | 16 |
| 20—30 | ? |
| 30—40 | ? |
| 40—50 | ? |
| 50—60 | 6 |
| 60—70 | 4 |
| Total | 230 |