

CDOE
BACHELOR OF BUSINESS ADMINISTRATION (CBCS-2019 COURSE)
B.B.A. SEM - II : WINTER :- 2021
SUBJECT: BUSINESS STATISTICS

Day : Thursday
Date 10/2/2022

W-21911-2021

Time : 10:00 AM-01:00 PM
Max. Marks: 60

N. B. :

- 1) Attempt **ANY THREE** questions from Section **I** and **ANY TWO** questions from Section – **II**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer books.
- 4) Use of non-programmable **CALCULATOR** is allowed
- 5) Use of graph paper **WHEREVER** necessary

SECTION – I

Q. 1 a) Define correlation. Explain scatter diagrams with suitable examples. **(06)**

b) Find: **(06)**

- i) Interquartile range
- ii) Coefficient of quartile deviation

Marks	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90
No. of Students	60	45	120	25	90	80	120	60

Q. 2 a) The average weight of a group of 20 players was calculated to be 89.4 kg. It was later discovered that one weight was misread as 78 instead of 87. Calculate the correct average weight. **(06)**

b) A bag contains 8 white and 4 red balls. Five balls are drawn at random. What is the probability that 2 of them are red and 3 white? **(06)**

Q. 3 With a view to study whether the working condition in a factory had any influence on the frequency of accidents, a researcher collected and tabulated the accident data as follows: **(12)**

Working conditions	No. of Accidents		Total
	Less	More	
Good	280	80	360
Bad	120	120	240
Total	400	200	600

Using Yule's methodology, calculate the coefficient of association between the number of accidents and the working condition in the factory. What inference would you draw from the result?

Q. 4 A panel of judges A and B graded seven dramatic performances by independently awarding marks as given: **(12)**

Performance	1	2	3	4	5	6	7
Marks by Judge A	46	42	44	40	43	41	45
Marks by Judge B	40	38	36	35	39	37	41

Compute rank correlation and find the level of correlation between the scores given by two judges.

P. T. O.

Q. 5 Write short notes on **ANY TWO** of the following: (12)

- a) Regression lines
- b) Yule's coefficient of association
- c) Applications of Business Statistics

SECTION – II

Q. 6 A company has three plants to manufacture 8,000 scooters in a month. Out of 8,000 scooters. Plant I manufactures 4,000 scooters. Plant II manufactures 3,000 scooters and Plant III manufactures 1,000 scooters. At plant I, 85 out of 100 scooters are rated as standard quality or better, at Plant II, only 65 out of 100 scooters are rated as standard quality or better, and at Plant III, 60 out of 100 scooters are rated as standard quality or better. What is the probability that the scooter selected at random came from (12)

- i) Plant I ii) Plant II iii) Plant III
- if it is known that the scooter is of a standard quality?

Q. 7 The following data relate to advertising expenditure (lakh) and their corresponding sales (in cores Rs.) (12)

Advertising Expenses	10	12	15	23	20
Sales	14	17	23	25	21

Estimate:

- i) The sales corresponding to advertising expenditure of Rs. 30 lakhs.
- ii) The advertising expenditure for sales target Rs. 35 cores.

Q. 8 In the following date class frequencies are missing: (12)

Class interval	Frequency
110 – 110	4
110 – 120	7
120 – 130	15
130 – 140	?
140 – 150	40
150 – 160	?
160 – 170	16
170 – 180	10
180 – 190	6
190 – 200	3

However, it was possible to ascertain that the total No. of frequency was 150 and median has been correctly found out as 146.25. You are required to find with the help of information given above:

- i) The two missing frequencies.
- ii) Calculate standard deviation.