

**BCA – Sem. II Examination, Oct. 2016**  
**Paper 206:- Computer Oriented Statistical Methods**

Time :  $2\frac{1}{2}$  Minutes

Marks: 70

- Instructions: 1. There are FIVE compulsory Questions .  
 2. All Questions carry equal marks.  
 3. Use of Calculator is permitted.

- Q1 a) Define arithmetic mean. Why it is called the best average? State its 6 merits and demerits.  
 b) The monthly profits (in Rs) of 100 shops are distributed as follows . 8  
 From the following data compute – Quartile  $Q_1$ , Decile  $D_7$ , Percentile  $P_{65}$ .

Profit per shop	No. of Shops
0 – 100	12
100 – 200	18
200 – 300	27
300 – 400	20
400 – 500	17
500 – 600	06

OR

- Q1 a) State the characteristics of a good average. 4  
 b) Compute, Mean, median and mode for the following data. 10

Marks	No. of Students
0-10	6
10-20	5
20-30	8
30-40	15
40-50	7
50-60	6
60-70	3

Also find median graphically.

- Q2 a) Define standard deviation. Why it is called a best measure of 6 dispersion?

- b) From the following data compute Mean Deviation and Standard Deviation. 8

Heights(in cms)	Number of Students
141 - 150	6
151 - 160	28
161 - 170	48
171- 180	30
181 - 190	8

OR

- Q2 a) Define the following terms. 6  
 i. Range, ii. Variance, and iii. Coefficient of variation  
 b) Two models of Radio were subjected to a durability test, the results were as follows. State which model has larger average life and which model has more uniformity. 8

Life in years	Number of Matches	
	A	B
0-2	5	2
2-4	16	7
4-6	13	12
6-8	7	19
8-10	5	9
10-12	4	1

- Q3 a) Write a note on, 'scatter diagram and its interpretations'. 7  
 b) Calculate the correlation coefficient between X and Y from the given data. Also compute coefficient of determination. 7

X	75	88	95	70	60	80	81	50
Y	120	134	150	115	110	140	142	100

OR

- Q3 a) What is regression? State the properties of regression. 6  
 b) The following data give the ages and blood pressure of woman: 8  
 Age(X) 56 42 36 47 49 42 60 72 63  
 Blood Pressure(y) 147 125 118 128 145 140 155 160 149  
 i) Determine the line of regression of Y on X.  
 iii) Estimate the blood pressure of woman whose age is 48 years.

- Q4 a) Define Time Series. State various components of Time Series. 8  
 b) In a certain industry, the production of certain commodity ( in '000 6  
 units) during the year 1999 to 2003 are as given below.

Year	1999	2000	2001	2002	2003
Production	12	15	25	22	26

Estimate the production for year 2005.

OR

- Q4 a) Explain the least square method of studying trend. 5  
 b) Fit a trend line using 5- yearly moving average method. 9

Year	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
No. of persons	23	23	22	20	21	20	28	30	28	28	27	24

- Q5 a) Define the following terms: 6  
 1) Mutually Exclusive Event  
 2) Independent Events,  
 3) Probability of two events.  
 b) The chance of an accident occur in a factory is 10 in 50 in Mumbai, 10 8  
 in 60 in Pune and 10 in 120 in Nagpur. Find the chance that an  
 accident may happen in  
 (i) Atleast one of the cities,  
 (ii) All these cities.

OR

- Q5 a) Define Poisson distribution. State the Characteristics of Poisson 8  
 Distribution.  
 b) The customer accounts at certain departmental store have an average 6  
 balance of Rs. 120 and a std. deviation of Rs. 40. Assuming that  
 accounts are normally distributed. Find probability of-  
 i. The accounts are over Rs. 150?  
 ii. The accounts are between Rs. 100 and Rs. 150?