

Seat No.	
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B.C.A. (Part - II) (Semester - III) Examination, November - 2017
COMPUTER ORIENTED STATISTICAL METHODS (Paper - 305)

Sub. Code : 63400

Day and Date : Thursday, 02 - 11 - 2017

Total Marks : 80

Time : 10.30 a.m. to 01.30 p.m.

- Instructions :**
- 1) Question No. 8 is compulsory.
 - 2) Attempt any four questions from Question number 1 to 7.
 - 3) Figures to the right indicate full marks.
 - 4) Use of non programmable calculator is allowed.
 - 5) Graph paper will be supplied on request.

Q1) a) Explain:

- i) Primary data and Secondary data.
 - ii) Qualitative data and Quantitative data.
- b) Define Mean and Mode. State the empirical relation between mean, median and mode. Use it to estimate mode of the distribution whose mean is 42.68 and median is 58.92.

[8 + 8]

Q2) a) Describe the method of moving averages in time series.

- b) Explain Pie-diagram. Following data represents the number of students enrolled for BCA course in a college:

Classes	BCA-I	BCA-II	BCA-III
No. of Students	70	65	45

Draw a Pie-diagram for the above data.

[8 + 8]

[8 + 8]

P.T.O.

Q3) a) Two samples of sizes 40 and 50 have same mean 25 but different standard deviations 19 and 18 respectively. Find mean and S.D. of the combined group.

b) Define Time Series. And state its components.

Find 3-yearly moving averages from the following data.

Year	1	2	3	4	5	6	7	8	9	10
Sales in lac	4	7	10	12	10	15	20	22	23	22

[8 + 8]

Q4) a) Explain in brief stratified random sampling. A sample of size 500 is to be drawn from a population of 10,000 units. Which is divided into four strata of sizes 1500, 2500, 4000, 2000. Find the sample size from each stratum by stratified random sampling with proportional allocation.

b) Define Rank correlation coefficient. Compute the rank correlation coefficient between sales and advertisement expenses in thousands of Rs. from the following data.

Sales	90	85	68	75	82	80	95	70
Advertisement	7	5	2	3	4	5	8	1

Comment on your result.

[8 + 8]

Q5) a) State the requirements of a good measure of central tendency. Find median and mode for the following data.

Class	10-20	20-30	30-40	40-50	50-60
Frequency	7	9	15	11	8

b) State the relation between correlation coefficient and regression coefficients and verify them by using following data.

X	2	3	4	7	6
Y	10	7	3	1	2

[8 + 8]

Q6) a) Give meaning of Dispersion. Distinguish between absolute measure of dispersion and relative measure of dispersion.

b) Interpret if

- i) $r = +1$ ii) $r = -1$ iii) $r = 0$.

Where r is correlation coefficient. The equations of two regression line are $10Y = X + 17$, $X = 5Y - 7$.

Find

- I) Mean of X and Y . II) Regression coefficients.
III) Correlation coefficient between X and Y .

[8 + 8]

Q7) a) State any two properties of regression coefficients. From 10 observations on Price (X) and Supply (Y) of a commodity, the following data were obtained.

$$\sum X = 130, \sum Y = 220, \sum X^2 = 2288, \sum XY = 3467.$$

Compute the equation of line of regression of supply on price and estimate the supply when price is 16 units.

b) Define S.D. and its coefficient. Calculate S.D. and coefficient of S.D. for the following data.

Value (x)	7	8	9	10	11	12	13
Frequency (f)	4	6	9	12	9	6	4

[8 + 8]

Q8) a) Explain seasonal variation in time series. Find the progressive averages from the following data.

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016
Profit	213	227	212	250	270	230	175	190	200

b) State merits and demerits of mean. Find mean and upper quartile from the following data.

38, 34, 39, 35, 32, 31, 37, 30, 48

[8 + 8]



Seat No.	
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B.C.A. (Part - II) (Semester - III) Examination, May - 2018
COMPUTER ORIENTED STATISTICAL METHODS (Paper - 305)
Sub. Code : 63400

Day and Date : Monday, 14 - 05 - 2018

Total Marks : 80

Time : 03.00 p.m. to 06.00 p.m.

- Instructions :
- 1) Question number 8 is compulsory.
 - 2) Attempt any Four Questions from question number 1 to 7.
 - 3) Figures to the right indicate full marks.
 - 4) Use of non programmable calculator is allowed.
 - 5) Graph paper will be supplied on request.

- Q1) a) Define statistics. Explain scope of statistics.
 b) Define median and Mode. Calculate Median and Mode from following data (By converting the given classes in the exclusive form).

Age in years	10-19	20-29	30-39	40-49	50-59
No. of Persons	8	8	15	11	8

[8 + 8]

- Q2) a) Following data gives number of catches taken by A and B in 5 one day matches.

Catches taken by A	4	5	4	3	5
Catches taken by B	1	0	4	2	1

Find, who is consistent in the matter of taking the catches?

- b) The following data gives the sales of a firm. Fit a straight line trend by the method of least squares and obtain the trend values.

Year	2009	2010	2011	2012	2013
Sales ('000' units)	270	285	295	315	330

[8 + 8]

P.T.O.

- Q3) a)** Define Ogive curve. Draw a less than Ogive curve for the following data. and hence determine the value of Median.

Marks	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80	80 - 90	90 - 100
No of Students	5	7	10	18	15	12	7	6

- b) Define S. D. and C. V. For a set of 100 observations the sum is 389 and Sum of squares is 2570. Find S.D. and C.V.

[8 + 8]

- Q4) a)** Define regression coefficients. State any two properties of regression coefficients.

- b) Define Mean and upper quartile. Find mean, median and upper quartile from the following data.

38, 34, 39, 35, 32, 31, 37, 30, 48.

[8 + 8]

- Q5) a)** State the relation between correlation coefficient and regression coefficients and verify them by using following data.

X	2	3	4	7	6
Y	10	7	3	1	2

- b) Define the terms : Sample, population and sampling. State the advantages of sampling method over census method.

[8 + 8]

- Q6) a)** Define M.D. about mean and M.D. about median.

Find M.D. about mean and M.D. about median from the following data.

31, 35, 29, 63, 55, 72, 37.

- b) Define Time series. State its components. Obtain Three yearly moving averages from the following data.

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Value	20	24	22	25	28	30	33	30	36	37

[8 + 8]

- Q7) a) State the equations of regression lines. From 10 observations on price (X) and supply (Y) of a commodity, the following data were obtained.

$$\Sigma X = 130, \Sigma X^2 = 2288, \Sigma Y = 220, \Sigma XY = 3467$$

Compute the equation of line of regression of supply on price and estimate the supply when price is 16 units.

- b) Explain the method of moving averages in time series.

[8 + 8]

- Q8) a) State the requirements of a good averages.

The mean salary of 50 workers were Rs. 200. It was latter found that two items 160 and 210 were wrongly taken as 130 and 190. Find correct mean salary.

- b) Write note on Rank Correlation coefficient.

Calculate rank correlation coefficient for the following data.

X	53	98	95	81	75	61	59	55
Y	47	25	32	37	30	40	39	45

[8 + 8]

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