

Third Semester B.Com. Degree Examination, Nov./Dec. 2017

COMMERCE

Paper – 3.6 : Quantitative Techniques – I (Old)

Time : 3 Hours

Max. Marks : 80

Instruction : *Mathematical, Logarithmic, Statistical tables and Graphs are supplied on request.*

SECTION – A

Answer **any ten** of the following :

(10×2=20)

1. What are classification and tabulation ?
2. What is Histogram ?
3. What do you mean by "Ogives" or cumulative frequency curves ?
4. Define mean. State the different types of mean.
5. Define Mode. Write the formula for calculating Mode.
6. Given $N_1 = 50$, $N_2 = 150$, $\bar{X} = 45$, $\bar{X}_2 = 55$. Calculate combined Mean.
7. What is Quartile Deviation ?
8. What do you mean by "Co-efficient of variation" ?
9. What is meant by correlation ?
10. Write the two lines of Regression Equations of X and Y.
11. What is Sample Space ?
12. Mention the conditions under which a Binomial Distribution tends to Poisson Distribution.

SECTION – B

Answer **any three** of the following :

(3×5=15)

13. Explain the methods of classification.

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14. From the data given below, prepare a frequency distribution table with class intervals as 40 – 49, 50 – 59 and so on.

94, 78, 86, 51, 96, 103, 52, 79, 50, 72,
66, 49, 77, 90, 84, 76, 42, 64, 69, 70,
68, 69, 104, 80, 79, 79, 54, 73, 58, 91,
65, 60, 77, 78, 67, 50, 84, 76, 110, 53,
74, 40, 60, 42, 82, 41, 61, 75, 115, 83.

15. From the following data calculate the Lower Quartile (Q_1), Upper Quartile (Q_3) Third Decile (D_3) and 20th percentile (P_{20})

Central value	Frequency
2.5	7
7.5	18
12.5	25
17.5	30
22.5	20

16. Calculate mean deviation from median from the following data and find its relative measure co-efficient of mean deviation :

Annual Income in Thousand Rs.	50	60	70	80	90	100
No. of Employees	3	8	10	12	5	2

17. Calculate Rank Correlation coefficient between the two Ranks in two tests.

Test I :	1	2	3	4	5	6
Test II :	2	1	5	6	4	3



SECTION – C

Answer **any three** of the following:

(3×15=45)

18. a) Prepare a Blank Table to show the export of three companies X, Y and Z to five countries England, America, USSR, France and Japan in each of the years 2005 to 2009.
- b) The following table gives the monthly expenditure of a family which has an income of Rs. 26,000 per month. Represent the monthly expenditure by means of Pie-diagram.

Items of Expenditure	Amount (Rs.)
Food	12,500
Clothing	4,000
Rent	3,500
Education	2,500
Fuel	1,500
Others	2,000

19. Calculate Mean, Median and Mode for the following frequency distribution.

Class	Frequency
130 – 134	5
135 – 139	15
140 – 144	28
145 – 149	24
150 – 154	17
155 – 159	10
160 – 164	1

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20. a) Compute Co-efficient of Quartile Deviation.

Size	Frequency
4 - 8	7
8 - 12	11
12 - 16	18
16 - 20	32
20 - 24	16
24 - 28	12
28 - 32	10

b) Calculate mean, standard deviation and co-efficient of variation from the following data :

Income (Rs.)	Number of Families
600 - 700	12
700 - 800	18
800 - 900	20
900 - 1000	25
1000 - 1100	35
1100 - 1200	10

21. Calculate Karl Pearson's coefficient of correlation from the data given below :

X \ Y	20 - 30	30 - 40	40 - 50	50 - 60
10 - 14	10	10	-	-
14 - 18	-	20	8	-
18 - 22	-	10	25	6
22 - 26	-	-	7	4

22. a) Calculate :

i) The Regression equations of X on Y and Y on X from the following data :

ii) Estimate X when Y is 20.

X: 10 12 13 17 18

Y: 5 6 7 9 13

b) Explain the following :

i) Event ii) Addition theorem iii) Normal Distribution.

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