



**Progressive Education Society's**  
**Modern College of Arts, Science & Commerce Ganeshkhind, Pune – 16**  
**End Semester Examination: Jan.2022**  
**Faculty: Commerce**

**Program: BBA (Computer Application)**

**Semester:1**

**SET: A**

**Program (Specific): (BBACA07)**

**Course Type: CC**

**Class: FYBBA (CA)**

**Max. Marks: 70**

**Name of the Course: Statistics**

**Course Code: 22-BBACA-115**

**Time: 3 Hours**

**Paper: I**

**Instructions to the candidate:**

- 1) There are 4 sections in the question paper. Write each section on separate page.*
- 2) All Sections are compulsory.*
- 3) Figures to the right indicate full marks.*
- 4) Draw a well labelled diagram wherever necessary.*

**Section A**

**Q.1. Attempt the following questions (Any 5)**

**[15]**

**1. Define: a) Positive correlation    b) Statistics    c) Histogram**

**2. Calculate median for the following data**

**16, 22, 21, 20, 23, 21, 19, 15, 13, 23**

**3. Write merits of median**

**4. Calculate Coefficient of range for the**

**57.8, 56.2, 61.9, 54.4, 53.6, 56.4, 53.2**

**5. Calculate using empirical relation the mean for the given data**

**Mode=5 and Median = 5**

**6. Explain the scope of statistics in industry**

**7. What do you mean by Central tendency? Write good measures of central tendency**

### Section B

**Q2) Answer the following questions (any 3)**

**[15]**

**1. For the following data, compute coefficient of correlation between X and Y**

	X series	Y series
Number of items	15	15
Arithmetic mean	25	18
Sum of Square of deviations from mean	136	138

The sum of product of deviations of X and Y series from their arithmetic mean = 122

**2. A time and motion study of certain operation in an engineering firm shows the following distribution of time taken to complete an operation for 200 workers. Calculate Arithmetic mean by Step-Deviation method**

Time	5 – 12	13 – 20	21 – 27	28 – 34	35 – 42
No. of workers	10	36	62	72	20

**3. List all the types of Correlation and draw graphs of each correlation**

**4. What is covariance? State properties of covariance**

### Section C

**Q.3. Answer the following questions (any 5)**

**[20]**

**1. Draw histogram for the following distribution of over-time of workers in a factory**

Overtime	4 – 8	8 – 12	12 – 16	16 – 24	24 – 32	32 – 40
No. of workers	7	15	28	33	38	29

**2. The arithmetic mean of 12 observations was 36.5. It was later discovered that a value was misread as 27 instead of 57. Find the mean of set of corrected observations**

**3. Find the value of quartile deviation for the monthly consumption of electricity ( in kWh) of a family: 210, 207, 250, 240, 232, 216, 208, 209, 215, 300, 290**

**4. The following data relate to the profits in lakhs of companies. Calculate median for the following data.**

Profit (in lakh Rs.)	0 – 50	50 – 100	100 – 150	150 – 200	200 – 250
No. of companies	12	18	27	20	6

5. The mean of the following data related with the number of accidents is 1.46. Find the missing frequencies

Number of accidents(x)	0	1	2	3	4	5	Total number of days
Number of days	46	-	-	25	10	5	200

6. Calculate mode for the following data

Expenditure (in thousand Rs. )	0 - 10	10 - 20	20 - 30	30 - 40	40 - 50
Number of families	3	8	20	12	7

#### Section D

Q4) Answer the following question (any 4 )

[20]

1. For the two frequency distribution given below on a variable X, the mean calculated from first was 25.4 and that from second was 32.5. Find the values of missing frequencies a and b

Class	10 – 20	20 – 30	30 – 40	40 – 50	50 - 60
Distribution 1	20	15	10	a	b
Distribution II	4	8	4	2a	b

2. Following is the distribution of of students according to marks secured in international examination. Compute Coefficient of Quartile Deviation and coefficient of range.

Marks	0 – 8	8 – 16	16 – 24	24 – 32	32 – 40
No. of students	3	24	90	60	23

3. State the properties of good measure of dispersion

4. Write down the merits of variance

5. Compute covariance for the following data

Shop	A	B	C	D	E	F
X	53	28	37	48	50	42
Y	58	32	36	52	56	45