Subject: <u>**Statistical Techniques & Computer Application**</u>   Code No. **MTRP – 105/2**

<u>Full Marks: 100</u>   <u>Time: 3 hours</u>

(i)   Use graphics and figures wherever necessary.
(ii)   Attempt any **Five** questions.
(iii)   All questions carry equal marks.

1. Establish the efficiency of *Arithmetic Mean* and *Geometric Mean* towards presentation of data set. If the mean of the following distribution is 7.5, find the missing frequency 'f' of the following data.

Variable (x)	5	6	7	8	9	10	11	12
Frequency (f)	20	17	16	10	f	6	7	6

2. What is *Median* and *Mode*? Calculate the median from the following set of grouped, discrete data:

Output per operatives	Frequency	Output per operatives	Frequency	Output per operatives	Frequency
50 -- 54	4	65 -- 69	18	80 -- 84	7
55 -- 59	8	70 -- 74	21	85 -- 89	3
60 -- 64	12	75 -- 79	13	90 -- 95	4

3. What is *Dispersion*? State the definition of *Standard Deviation*. Find the mean and standard deviation of the following data, relating to the number of people per household in a survey of a district:

Number of people in household	0	1	2	3	4	5	6	7
Frequency	3	10	15	27	36	24	4	1

4. Define Probability. State the *Simple Addition Law, Simple Multiplication Law, General Addition Law* and *General Multiplication Law of Probability*. A quality control procedure tests all components coming off a production line. It is found that 4% of the items are defective. The inspection can detect a faulty component with a probability of 96% but, in 10% of cases, will classify a good component as being faulty. Find the proportion of component classified correctly.

5. Define with examples *Permutation* and *Combination*. A tea-taster has to choose the six best brands from a selection of eight types of tea and rank them in order. In how many ways can this be done?

6. What is *Correlation co-efficient*? What does it measure? Make a prediction of population in 15th year from the population data of last 10 years given below:

Year	0	1	2	3	4	5	6	7	8	9
Population (in 000's)	17	32	48	39	70	63	72	98	96	100

7. State the *General Method of Test of Significance*.

8. State the processes of sorting a set of data spread in five columns of a Microsoft Excel file in order of sorting first by column 1, then by column 3, then by column 5, then by column 4 and then by column 2.