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**2 PG COM (DODL) RMSA 203**

**2020**

**(held in July, 2021)**

**COMMERCE**

Paper : COM-203

**(Research Methodology and Statistical Analysis)**

Full Marks : 80

Time : Two hours

**The figures in the margin indicate full marks for the questions.**

**Candidates are required to answer only 50% of the total marks i.e. 40 marks.**

1. (a) What is Research Methodology? Explain the steps in scientific research process. Discuss the importance of 'literature review' as a source of research problem. 2+8+6=16

**Or**

- (b) What is Statistical Sampling? Discuss the various methods of sampling from a population. Explain the primary scales of measurement used in statistical analysis. 2+6+8=16

*Contd.*

2. (a) From the following data, calculate the mean, median, mode and standard deviation : 16

Class	20-25	25-30	30-35	35-40	40-45	45-50	50-55
Frequency	110	170	80	45	40	30	25

**Or**

- (b) What is meant by time series analysis? Explain with examples, the importance of time series analysis. Discuss with examples, the components of time series. 2+6+8=16

3. (a) What is Probability Distribution? List out some probability distributions with their uses. Discuss the central limit theorem and its practical implications. 4+6+6=16

**Or**

- (b) What is Statistical Decision Theory? Explain the methods of finding pay-off for decision-making under risk. Discuss with examples, the decision-making criteria that are used under the situation of uncertainty. 2+6+8=16

4. (a) What is meant by a Statistical Test? Explain the elements of statistical tests. Discuss in brief, the role of alpha and beta in the hypothesis testing.

2+10+4=16

**Or**

(b) Discuss the procedure for testing a hypothesis. Explain the importance of *t*-test and *Z*-test statistical methods.

8+8=16

5. (a) Define parametric and non-parametric tests. Discuss the assumptions and limitations of the parametric and non-parametric tests.

4+12=16

**Or**

(b) Explain the significance of a research report and narrate the various steps involved in writing a report.

4+12=16