



M.E / M.TECH DEGREE EXAMINATIONS: NOV/ DEC 2024

(Regulation 2024)

First Semester

COMMON TO IE / ES

24INT502: Research Methodology and Statistics

COURSE OUTCOMES

- CO1: Apply scientific methods to identify and formulate research problems for effective research planning.
- CO2: Analyze statistical data to summarize and describe the characteristics of the data effectively.
- CO3: Evaluate statistical models and perform hypothesis testing to make informed decisions based on data.
- CO4: Design comprehensive research plans incorporating ethical standards and appropriate data collection methods.
- CO5: Create structured research reports that effectively present and analyze data to communicate findings clearly.

Time: Three Hours

Maximum Marks: 100

PART A (4*20 = 80 Marks)

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|----|----|--|----|-----|-------------------|
| 1. | a) | What are the precautions to be taken while selecting the problem for research and formulating the problem? Select a problem of your own and explain in this context. | 10 | CO1 | [K ₄] |
| | b) | Enumerate the steps in scientific Research process with flowchart. | 10 | CO1 | [K ₂] |
| 2. | a) | Enumerate the techniques of t-test and z-test in research methodology. | 10 | CO3 | [K ₃] |
| | b) | Discuss in detail the essential elements of Research Design with suitable example. | 5 | CO3 | [K ₂] |
| | c) | Enumerate the Methods of ANOVA analysis and state its importance in research. | 5 | CO3 | [K ₂] |

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| 3. | a) | Discuss in detail the measures used to analyze the dispersion of data | 10 | CO2 | [K ₂] |
| | b) | Discuss in detail various types of data and collection methods. | 10 | CO2 | [K ₂] |
| 4. | a) | List the important points to be noted while preparing the questionnaires. | 10 | CO4 | [K ₂] |
| | b) | Write short notes on data editing and transcription. | 10 | CO4 | [K ₃] |

Answer any ONE Question

PART B (1*20 = 20 Marks)

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| 5. | a) | Discuss in detail the Layout of research report and its component. | 20 | CO5 | [K ₃] |
| (OR) | | | | | |
| 6. | a) | Discuss in detail the mechanism of writing a research report and principles of writing with suitable example. | 20 | CO5 | [K ₃] |
