



**M.Tech.**  
**(SEM-II) THEORY EXAMINATION 2017-18**  
**RESEARCH METHODOLOGY**

**Time: 3 Hours**
**Total Marks: 100**
**Notes:**

- Attempt all Sections.
- Assume any missing data.

**SECTION-A**

**Attempt any five questions:**

- Q1. What are the various types of researches? Classify them on the basis of applications.
- Q2. Explain how the Research is connected with proper fact finding, analysis and evaluation. Take suitable examples.
- Q3. What is research problem? Define the main issues which should receive the attention of the researchers in formulation the research problem. Give suitable examples to explicate your points.
- Q4. Distinguish between the following:
- (i) Null Hypothesis and Alternative Hypothesis
  - (ii) Type I Error and Type II Error
- Q5. Set up an analysis of variance table for the following per acre production data for three varieties of a crop, each grown on four plots and state if the varieties differences are significant.

----- **Per Acre Production** -----

Plot of Land	A	B	C
1	6	5	5
2	7	4	4
3	4	3	3
4	7	6	4

**Given:**  $F(2,9)$  at 4% level of significance = 5.26

- Q6. Describe various methods of collecting data. Also explain the difference between questionnaire and schedule.
- Q7. Explain the meaning of the following in context of research design
- i) Extraneous variable
  - ii) Confounded relationship
  - iii) Research hypothesis
  - iv) Experimental and Control groups
  - v) Treatments
- Q8. Describe in brief all the steps required by a researcher for the procedure of testing hypothesis.