

**National Institute of Technical Teachers' Training and Research,
Chennai – 600 113**

Ph.D. (Engineering Education) of University of Madras

ENTRANCE TEST

Time: 2 hrs & 30 Minutes

Marks: 100

ANSWER ALL THE QUESTIONS

**Part – A
(10 x 3 Marks = 30 Marks)**

Answer each of the following questions in about 50 words:

1. Name three agencies in India, which are providing funds for research in Engineering Education.
2. Illustrate the meaning of “Null Hypothesis” with an example.
3. Distinguish between “Ordinal Scale” and “Ratio Scale” with an example for each.
4. Distinguish between “Random sample” and “Stratified sample”.
5. How does ‘basic research’ differ from ‘applied research’?
6. How would you select a sample of 60 students for a research study on "Students Problems" from an Engineering college which has a total of 420 students?
7. What is a Scattergram?
8. Explain the use of case study method for research in engineering education.
9. What are the purposes of literature survey?
10. Identify two researchable problems in the Inter-disciplinary area of “Engineering Education”.

**Part – B
(5 x 8 marks = 40 marks)**

Answer each of the following questions in about 120 Words:

11. What are the practical aspects to be considered while selecting a problem for a Doctoral Research Project in Engineering Education?
12. What are the main aspects to be included in a research proposal to be sent to a funding agency?
13. Describe any one method of determining the Validity and Reliability of a questionnaire.
14. What are the steps involved in “Survey Method of Research”? Briefly explain each.
15. Identify problems caused by the rapid growth of Engineering Colleges in India.

PART C
(30 marks)

Analyze the following case and answer the questions given below:

An autonomous Engineering College is conducting 10 U.G. and 3 P.G. Programmes. It has 3000 students and 300 teachers. The college is using a particular system for the Performance Appraisal of its faculty members. The college wants to find the effectiveness of its Performance Appraisal System. Assuming that you are appointed as the consultant for this purpose answer the following questions.

Questions:

16. How will you design a research project to identify the effectiveness of the Performance Appraisal System? (3 marks)
17. What methodology will you use? Describe it. (8 marks)
18. From whom will you collect data? What type of instruments and techniques will be used for data collection? (9 marks)
19. How will you analyse the data? (4 marks)
20. What will be included in your report? (6 marks)
