Reg. No. : ....

Name : ....

Ph.D. ENTRANCE EXAMINATION 2023

FACULTY OF ENGINEERING AND TECHNOLOGY

CIVIL ENGINEERING

Time : 3 Hours   Max. Marks : 100

***Instructions* :**

1) Answer ***any ten*** questions each from Section ***A* and *B.***
2) Each question carries **5** marks.
3) No additional Answer sheets will be provided.
4) Candidates should clearly indicate the section, Question number in the answer booklet.

Section – A

Research Methodology

I. Answer any **ten** questions. Each question carries **5** marks.

1. What are the different types of Research? Differentiate between Experimental Research and Descriptive Research.

2. What is Sampling? Explain the errors in sampling.

3. What is a Research design? Explain its process.

4. What is Probability and Non-probability sampling and give its difference?

5. Explain Data Collection, Methods and Tools for data collection.

6. What is Hypothesis? How can you Formulate and Test the Hypothesis? Give the Advantages and Disadvantages of testing of Hypothesis.

7. What do you mean by level of Significance? Explain the degree of freedom.

8. What are the different types of Hypothesis Tests? Explain in detail with their formulae.

9. What is Report Writing? Explain the Process of Writing the Report.

10. What is Research Report? Write its Function, types and its Layout.

11. What is Application of Research?

12. What is the purpose of statistical analysis in research?

13. What is the regression process within the activity of Research methodology?

14. Explain dependant and independent reasoning.

15. What is meant by deductive reasoning?

(10 × 5 = 50 Marks)

Section – B

Civil Engineering

II. Answer any **ten** questions. Each question carries **5** marks.

1. Define open flow with examples.

2. Explain the classification of hydraulic jumps.

3. What are the different methods of forecasting population?

4. What is meant by sewage sickness?

5. Differentiate between weir and barrage.

6. What are the different types of water distribution systems?

7. Define
   (a) Sight distance
   (b) Stopping sight distance
   (c) Overtaking sight distance

8. What is pre-stressing? List out the various techniques of pre-stressing.

9. What do you mean by a well-conditioned triangle?

10. What are the indicators of sustainability?

11. What do you mean by Environmental Impact Assessment?

12. Differentiate between working stress and limit state approach.

13. What is chemical composition of Portland cement?

14. Differentiate between determinate and indeterminate structures.

15. What is meant by activated sludge process?

——————— **(10 × 5 = 50 Marks)**