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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA
(An Autonomous Institute Affiliated to AKTU, Lucknow)

M.Tech

SEM: I - THEORY EXAMINATION (2025 - 2026)

Subject: Research Process and Methodology

Time: 3 Hours

Max. Marks: 70

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of **three Sections -A, B, & C**. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

15

1. Attempt all parts:-

- 1-a. Which of the following does not correspond to characteristics of research? (CO1,K1) 1
- (a) Research is not passive
- (b) Research is systematic
- (c) Research is not a problem-oriented
- (d) Research is not a process
- 1-b. In the research process, which of the following comes after defining the research problem? (CO2, K1) 1
- (a) Data analysis
- (b) Reviewing the literature
- (c) Writing the conclusion
- (d) Report writing
- 1-c. A researcher is interested in studying the prospects of a particular political party in an urban area. So, what tool should he prefer for the study? (CO3,K1) 1
- (a) Rating Scale
- (b) Interview
- (c) Questionnaire
- (d) Schedule
- 1-d. In testing a Hypothesis the common error is (CO4,K1) 1
- (a) Type I
- (b) Type II & Type I
- (c) Type II

- (d) None of these
- 1-e. In India, Term of Patent isyears from the date of filing. (CO5,K1) 1
- (a) 20
- (b) 10
- (c) 5
- (d) None of these

2. Attempt all parts:-

- 2.a. Differentiate between research method and methodology. (CO1, K2) 2
- 2.b. Why literature review is important in research process.(CO2,K2) 2
- 2.c. What do you understand by secondary data? (CO3,K2) 2
- 2.d. Define Mean and standard deviation.(CO4,K1) 2
- 2.e. What is the need of IPR in research? (Co5,K1) 2

SECTION-B

20

3. Attempt all parts:-

3.a. Answer any one of the following:-

3.a.(i) Differentiate between applied and fundamental research. (CO1,K2) 4

3.a.(ii) List any four criteria of good research.(CO1,K2) 4

3.b. Answer any one of the following:-

3.b.(i) What is research design? Explain the need of research design. (CO2,K2) 4

3.b.(ii) How do exploratory, descriptive, and experimental research designs differ? (CO2, K2) 4

3.c. Answer any one of the following:-

3.c.(i) What are the factors influencing the sample size? Explain in brief. (CO3,K3) 4

3.c.(ii) What is questionnaire? What are the precautions are considered in preparations of questionnaire. Also indicate its limitations. (CO3, K2) 4

3.d. Answer any one of the following:-

3.d.(i) What are the objectives of chi-square test? (CO4,K2) 4

3.d.(ii) Explain the meaning of analysis of variance.(CO4,K3) 4

3.e. Answer any one of the following:-

3.e.(i) What do you understand by research report or thesis? Indicate its need and importance in the research work. (CO5,K2) 4

3.e.(ii) What factors should researchers consider when selecting a journal for publication? Explain in brief.(CO5, K3) 4

SECTION-C

35

4. Answer any one of the following:-

4-a. Differentiate between conceptual and empirical research with example. (CO1, K2) 7

4-b. What do you mean by research? Discuss the significance of research. (CO1, K2) 7

5. Answer any one of the following:-

5-a. Data Collection is essential step for research if so then justify your answer with real time example. (CO2,K2) 7

- 5-b. Define research process. Describe the different steps involved in a research process. (CO2, K2) 7
6. Answer any one of the following:-
- 6-a. What do you understand by random sampling technique? Explain the various random sampling techniques with suitable examples.(CO3,K3) 7
- 6-b. Why probability sampling is generally preferred in comparison to non-probability sampling? Explain the procedure of selecting a simple random sample. (CO3,K3) 7
7. Answer any one of the following:-
- 7-a. Discuss data visualization tools with suitable examples. (CO4,K2) 7
- 7-b. Discuss various types of data analysis methods.(CO4,K2) 7
8. Answer any one of the following:-
- 8-a. Explain different steps used in Writing Report. (CO5,K3) 7
- 8-b. Explain IMRAD concept and design of research paper.(CO5,K3) 7

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