



PAPER ID-410085

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Subject Code: MTCC101Roll No: 

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**MTECH(Integrated)**  
**(SEM VIII) THEORY EXAMINATION 2023-24**  
**RESEARCH PROCESS AND METHODOLOGY**

**TIME: 3 HRS****M.MARKS: 100**

**Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.

**SECTION A**

**1. Attempt all questions in brief.**

**2 x 10 = 20**

Q no.	Question	Marks
a.	Explain the importance of research in two points.	2
b.	Differentiate between applied and basic research.	2
c.	Explain the concept of a literature survey and its significance.	2
d.	List the steps involved in the research process.	2
e.	State two ethical considerations in research data collection.	2
f.	Explain the concept of stratified sampling with an example.	2
g.	Differentiate between descriptive and inferential statistics.	2
h.	State the purpose of hypothesis testing in research.	2
i.	What is the purpose of referencing in research writing?	2
j.	Explain the concept of a review article with an example.	2

**SECTION B**

**2. Attempt any three of the following:**

**10 x 3 = 30**

a.	What is the fundamental meaning of research, and how does it contribute to the advancement of knowledge in various fields of study?	10
b.	Describe the key steps involved in the research process, from conceptualization to the final reporting of results, and their contribution to the integrity of the research.	10
c.	Define sampling in research, and its role does in the data collection process.	10
d.	Explain hypothesis in the context of research, and how it is related to the formulation of research questions and objectives.	10
e.	Analyze plagiarism in academic writing, and describe measures researchers should take to avoid unintentional plagiarism in their work.	10

**SECTION C**

**3. Attempt any one part of the following:**

**10 x 1 = 10**

a.	Describe the different types of research, and how do they differ in terms of their methodologies and applications in different fields?	10
b.	Outline the key steps involved in the research process, from the initial conceptualization of a study to the final reporting of findings.	10

**4. Attempt any one part of the following:**

**10 x 1 = 10**

a.	Describe research design, and how does it impact the overall outcome of a research study?	10
b.	Explain the significance of conducting a literature survey in the research process, and how researchers effectively carry out this phase of their study.	10



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**5. Attempt any *one* part of the following: 10 x 1= 10**

a.	Describe the different classifications of data used in research, and how do researchers determine the appropriate classification for their study.	10
b.	Evaluate the ethical considerations that researchers need to address when collecting data, and how do these considerations shape the research process?	10

**6. Attempt any *one* part of the following: 10 x 1= 10**

a.	How is hypothesis testing conducted in research, and what are the key considerations when interpreting the results of hypothesis tests?	10
b.	How do researchers effectively interpret the results of statistical analyses in a way that is meaningful and relevant to their research objectives?	10

**7. Attempt any *one* part of the following: 10 x 1= 10**

a.	How do researchers identify reputable research journals for publishing their work, and what factors should be considered when selecting a journal for submission?	10
b.	Explain the essential components of a research paper and how it differs from other types of research reports like review articles and short communications?	10