



GIET UNIVERSITY, GUNUPUR - 765022

B. Tech (Fifth Semester Regular) Examinations, December - 2023

21BMEOE35001 - Research Methodology

(Mechanical)

Time: 3 hrs

Maximum: 70 Marks

(The figures in the right hand margin indicate marks)

PART - A

(2 x 5 = 10 Marks)

Q.1. Answer **ALL** questions

	CO #	Blooms Level
a. Distinguish between exploratory, descriptive, and explanatory research approaches. Provide an example for each.	CO1	K3
b. Discuss the challenges researchers may face in the process of selecting a suitable research problem.	CO1	K1
c. What considerations should be taken into account when designing a questionnaire?	CO2	K3
d. What are the various Kinds of charts and diagrams which are used in data analysis?	CO3	K2
e. Describe the functions of the Department of Science and Technology (DST) in India.	CO4	K3

PART - B

(15 x 4 = 60 Marks)

Answer **ALL** questions

	Marks	CO #	Blooms Level
2. a. Elaborate on the ethical considerations researchers must take into account during the research process. Provide examples of ethical dilemmas in research.	7	CO1	K3
b. How do identified gap areas influence the formulation of research questions or hypotheses?	8	CO4	K4
(OR)			
c. Elaborate on the role of statistical analysis in research. Provide examples of statistical techniques used in data analysis.	7	CO1	K2
d. Elaborate on the ethical considerations researchers must take into account during the research process.	8	CO4	K3
3.a. Compare and contrast the use of questionnaires and interviews in data collection.	7	CO2	K3
b. How does the choice of data processing methods impact research outcomes, Explain ?	8	CO3	K3
(OR)			
c. How does a thorough literature review contribute to the development of a robust research design? Provide examples to illustrate the importance of secondary data.	8	CO2	K2
d. Write the challenges might researchers face in the data processing phase?	7	CO4	K4
4.a. Explain the difference between correlation and regression analysis with suitable example.	8	CO3	K3
b. Define and compare the mean, median, and mode as measures of central tendency.	7	CO3	K3
(OR)			
c. Define simple linear regression and discuss its application in predicting	8	CO3	K3

outcomes.

d.	Analyze the importance of time series analysis in understanding trends and patterns in data.	7	CO3	K3
5.a.	How do different funding agencies, such as DST, DBT, AICTE, UGC, CSIR, ICMR, AAYUSH, and DRDO function in India, and what is their role in supporting research?	10	CO4	K3
b.	What is the process of writing a research project proposal, and what key components should be included to make it compelling?	5	CO4	K3
(OR)				
c.	How do funding agencies contribute to the development of research infrastructure in India, and what impact does it have on the research landscape?	10	CO4	K3
d.	How can researchers avoid plagiarism in their work, and what are the consequences of plagiarism in the academic and research community?	5	CO4	K3

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