

B.Sc. in EEE, 6th Semester

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF ELECTRICAL AND ELECTRONIC ENGINEERING

Mid-Semester Examination

Summer Semester, A. Y. 2022-2023

Course No.: EEE 4607

Time: 90 Minutes

Course Title: Research Methodology

Full Marks: 50

There are 3 (three) questions. Answer any 2 (two) questions. The symbols have their usual meanings. Programmable calculators are not allowed. Marks of each question and corresponding COs and POs are written in the brackets.

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| 1. a) | In your own words define the concept 'research'. Discuss the purposes of research. (4+6) | 10
(CO1, PO1) |
| b) | Write the name of the different types of research. Explain the difference between applied research and fundamental research, providing an example of each. (5+10) | 15
(CO1, PO1) |
| 2. a) | Define research problem. State the criteria for selecting a research problem? (4+6) | 10
(CO1, PO1) |
| b) | Discuss the ethical considerations that researchers should consider when conducting empirical research involving human participants. | 07
(CO1, PO1) |
| c) | Define research method and methodology. Distinguish between research method and methodology. (2+2+4) | 08
(CO1, PO1) |
| 3. a) | Distinguish between a sample and a population. State the importance of sampling. Write the name of different sampling techniques. (3+3+2) | 08
(CO1, PO1) |
| b) | Define quantitative and qualitative research methodologies. Explain the difference between quantitative and qualitative research methodologies, providing possible differences in purpose, data sources, and data analysis. (4+9) | 13
(CO1, PO1) |
| c) | Examine the following quantitative research question: "Do fifth grade students who participate in a supplemental daily calendar math program learn more math content as demonstrated on the Virginia SOLs than those who do not receive this supplementary math program?" What is the independent variable? What is the dependent variable? | 04
(CO2, PO2) |