

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATIONS- 2025

M.Sc.-II Semester (BT&BI)

COURSE CODE (CREDITS):20MS1BT216 (2)

MAX. MARKS: 35

COURSE NAME: Research Methodology and Scientific Communication Skills

COURSE INSTRUCTORS: Dr. Gopal Singh Bisht

MAX. TIME: 2 Hour

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

Q.No	Question	Marks
Q1	Carefully read following situation and then answer question below.	[3x3]
	<p>Case-1 A biology researcher begins testing the effects of a new peptide on lab rats without seeking approval from the Institutional Animal Ethics Committee (IAEC). When questioned, the researcher claims the tests were "harmless" and purely "preliminary." Identify the ethical violations in this scenario. Why is Animal Ethics Committee approval mandatory, even for preliminary studies?</p> <p>Case 2 A researcher is conducting a clinical trial for a new medication. The participants are elderly patients, many of whom have mild cognitive impairment. The consent form is lengthy and uses technical jargon. Some participants sign the form without fully understanding it. Analyze the ethical issues in this scenario. Was informed consent properly obtained? What steps should the researcher take to ensure ethical standards are upheld?</p> <p>Case 3 A Biotech PhD student submits a protocol to the Animal Ethics Committee to test a new anti-inflammatory drug on 50 rabbits. The justification for the sample size is unclear, and no attempt has been made to explore alternatives like in-vitro studies. How should the Animal Ethics Committee respond to this proposal? What ethical principles apply, and what improvements should be suggested?</p>	
Q2	Critically analyze why the formulation of a research problem is considered the most crucial step in the research process. Provide a relevant example to support your argument. Furthermore, evaluate and explain the techniques used in defining a research problem.	[5]

Q3	<p>Justify your point of view in answering the following questions.</p> <p>a) What types of conflict of interest might arise when someone is asked to review a paper or grant application? Is it ever appropriate for a peer reviewer to give a paper to a graduate student for review? If so, how should the reviewer do so?</p> <p>c) Is it ever appropriate for a reviewer to use ideas from a paper under review, even if the reviewer's method to achieve a result is different from that used in the paper under review? If so, how should the reviewer proceed?</p> <p>d) is it ethically acceptable to publish ghostwritten scientific papers?</p>	<p>[3]</p> <p>[2]</p> <p>[2]</p>
Q4	Evaluate the various factors that contribute to negative research results and critically analyze their impact on scientific inquiry. Provide a case where publishing negative findings is beneficial, assessing its significance in advancing knowledge and research integrity.	[4]
Q5	Analyze the key elements involved in structuring an effective presentation. What strategies can be applied to connect with audience and ensure impactful delivery? Evaluate how these techniques contribute to the overall success of a presentation.	[4]
Q6	Explain the key components and essential characteristics of a research grant. What critical questions should a researcher ask before submitting a grant proposal? Analyze the common reasons for rejection cited by grant reviewers, and evaluate how these issues can be addressed to improve future submissions.	[6]