

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
Ph.D. END TERM EXAMINATION- Dec 2017

COURSE CODE: 10PINGE201

MAX. MARKS:25

COURSE NAME: Research Methodology

COURSE CREDITS: 3

MAX. TIME: 2 Hrs

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1. Why research grant are crucial? Discuss fatal flaws that can be avoided in research grant application. [5]

Q2. Describe the precautions that the researcher should take while interpreting his findings. [3]

Q3. How can the gaps between industry-Academia interface be narrowed? What would be the benefit of such collaborations to both parties? [3]

Q4. Answer the following questions wrt basic biological research. [2x3=6]

- Points to keep in mind during the literature review for a research project
- Limitations of the tests of hypotheses
- What is research misconduct? What are the consequences of research misconduct if substantiated? Who is investigated and who is held accountable for research misconduct?

Q5. Study the following paragraph carefully and then answer the given questions.

Vijay, who has just finished his first year of graduate school, is applying to the National Science Foundation for a predoctoral fellowship. His work in a lab where he did a rotation project was later carried on successfully by others, and it appears that a manuscript will be prepared for publication by the end of the summer. However, the fellowship application deadline is June 1, and Vijay decides it would be advantageous to list a publication as "submitted" rather than "in progress." Without consulting the faculty member or other colleagues involved, Vijay makes up a title and author list for a "submitted" paper and cites it in his application. After the application has been mailed, a lab member sees it and goes to the faculty member to ask about the "submitted" manuscript. Vijay admits to fabricating the submission of the paper but explains his actions by saying that he thought the practice was not uncommon in science. The faculty members in Vijay's department demand that he withdraw his grant proposal and dismiss him from the graduate program.

- Do you think that researchers often exaggerate the publication status of their work in written materials?
- Do you think the department acted too harshly in dismissing Vijay from the graduate program?
- If Vijay later applied to a graduate program at another institution, does that institution have the right to know what happened?

4. What were Vijay's adviser's responsibilities in reviewing the application before it was submitted?

[4]

Q6. Andre, a young assistant professor, and two graduate students have been working on a series of related experiments for the past several years. Now it is time to write up the experiments for publication, but the students and Andre must first make an important decision. They could write a single paper with one first author that would describe the experiments in a comprehensive manner, or they could write two shorter, less-complete papers so that each student could be a first author. Andre favors the first option, arguing that a single publication in a more visible journal would better suit all of their purposes. This alternative also would help Andre, who faces a tenure decision in two years. Andre's students, on the other hand, strongly suggest that two papers be prepared.

They argue that one paper encompassing all the results would be too long and complex. They also say that a single paper might damage their career opportunities because they would not be able to point to a paper on which they were first authors.

- a) How could Andre have anticipated this problem? And what sort of general guidelines could he have established for lab members?
- b) How could Andre and the students draw on practices within their discipline to resolve this dispute?
- c) What kind of laboratory or institutional policies could keep disputes like this from occurring?
- d) If a single paper is published, how can the authors make clear to review committees and funding agencies their various roles and the importance of the paper?

[4]

PHD EXAMINATION