

**RESEARCH METHODOLOGY, BIOETHICS AND IPR
(BIOT 5103)**

Time Allotted : 3 hrs

Full Marks : 70

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 5 (five) from Group B to E, taking at least one from each group.*

Candidates are required to give answer in their own words as far as practicable.

**Group – A
(Multiple Choice Type Questions)**

1. Choose the correct alternative for the following: **10 × 1 = 10**
- (i) The process not needed in experimental research is
(a) controlling (b) observation
(c) reference collection (d) manipulation and replication.
- (ii) _____ is a preferred sampling method for the population with finite size.
(a) Area sampling (b) Cluster sampling
(c) Purposive sampling (d) Systematic sampling
- (iii) Descriptive research studies is a category of research that aims to
(a) achieve new insights of a concept
(b) analyze characteristics of something
(c) determine the frequency with which something occurs
(d) test the relationship between variables.
- (iv) What are the core elements of a dissertation?
(a) Introduction; Data Collection; Data Analysis; Conclusions and Recommendations
(b) Executive Summary; Literature Review; Data Gathered; Conclusions; Bibliography
(c) Research Plan; Research Data; Analysis; References
(d) Introduction; Literature Review; Research Methodology; Results; Discussions and Conclusions.
- (v) The format of thesis writing is the same as in
(a) writing of seminar representation
(b) preparation of research paper/article
(c) a research dissertation
(d) presenting a workshop/conference paper.
- (vi) Which government organization provides general information about drug regulatory requirements in India?
(a) NPPA (b) CDSCO (c) ICMR (d) DCGI.

- (vii) _____ includes rules of conduct that may be used to regulate our activities concerning the biological world.
(a) Bio-piracy (b) Biosafety (c) Bioethics (d) Bio-patents
- (viii) _____ herbal medicinal plant is tried to be patented by India.
(a) Neem (b) Tomato (c) Potato (d) Basmati
- (ix) Which of the following identifies as a trademark?
(a) Name, symbol (b) Symbol, logo (c) Logo, name (d) Name, symbol, logo.
- (x) How long is a patent valid in India?
(a) 30 years (b) 20 years (c) 40 years (d) 60 years.

Group- B

2. (a) How does a researcher define the objectives of a research work?
[[CO1](Plan/LOCQ)]
- (b) Distinguish between Disciplinary and Subject-matter research with examples.
[[CO2](Differentiate/IOCQ)]]
- (c) Give a brief description of the different research methods.
[[CO1](Remember/LOCQ)]
4 + 4 + 4 = 12
3. (a) Examine the merits and demerits of the major tools of data collection for research work.
[[CO2](Analyze/LOCQ)]
- (b) Design a framework of planning stages involved in the preparation of a thesis.
[[CO3](Design/HOCQ)]
- (c) Comment on the major problems faced by researchers in India.
[[CO4](Analyze/IOCQ)]
4 + 4 + 4 = 12

Group - C

4. (a) What do you mean by dependent and independent variable?
[[CO2](Remember/LOCQ)]
- (b) Discuss the role of extraneous variables in research work. [[CO2](Outline/IOCQ)]
- (c) How can you examine your hypothesis by statistical methods?
[[CO2](Analyze/IOCQ)]
(2 + 2) + 4 + 4 = 12
5. (a) How can you examine your research data range by methods of dispersion?
[[CO2](Examine/HOCQ)]
- (b) Comment on the technique of interpretation in report writing.
[[CO2](Analyze/IOCQ)]
- (c) Mention the different steps involved in report writing. [[CO2](Understand/LOCQ)]
4 + 4 + 4 = 12

Group - D

6. (a) Describe the main features of Nuremburg code. [(CO4)(Remember/LOCQ)]
 (b) What is the main function of suicide genes? [(CO4) (Remember/LOCQ)]
 (c) "Genetic piracy should be considered when there is genetic counselling". Explain this statement. [(CO4)(Analyze/IOCQ)]
4 + 4 + 4 = 12
7. (a) Describe the properties of Essentially Derived Varieties (EDV's). [(CO4)(Remember/LOCQ)]
 (b) Differentiate between farmer's, breeder's and researcher's rights. [(CO4)(Understand/LOCQ)]
 (c) Decipher the ethical issues behind cloning. [(CO4)(Analyze/IOCQ)]
4 + 4 + 4 = 12

Group - E

8. (a) Define the four main biosafety levels. [(CO4)(Remember/LOCQ)]
 (b) Describe the functioning of GEAC regulations with a flow chart. [(CO4)(Understand/LOCQ)]
 (c) What is meant by limits of a patent? [(CO3)(Analyze/IOCQ)]
4 + 4 + 4 = 12
9. (a) Evaluate using examples the two types of patents. [(CO3)(Evaluate/HOCQ)]
 (b) Analyse the procedure of patenting. [(CO3)(Analyse/IOCQ)]
 (c) Evaluate the case studies of turmeric and neem patents. [(CO3)(Evaluate/HOCQ)]
4 + 4 + 4 = 12

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	45.83	37.5	16.67

Course Outcome (CO):

After completion of this course, the students should be able to:

- Describe the different aspects of research, and research processes such as literature survey, hypothesis testing.
- Describe the important aspects of research problem such as sources of error in measurement, Data collection Methods, Interpretation and report writing.
- Understand the concept of IPR, and i.e., types of IPR and different types of patents and its laws to protect patents.
- Understand and explain biosafety and bioethical regulations.

*LOCQ: Lower Order Cognitive Question; IOCQ: Intermediate Order Cognitive Question; HOCQ: Higher Order Cognitive Question

