

**RESEARCH METHODOLOGY AND IPR  
(ECEN 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) Research objectives can be of  
(a) 4 types                      (b) 2 types                      (c) 3 types                      (d) 6 types
  - (ii) Which of the following is not covered under the Intellectual Property Rights?  
(a) Copyrights                      (b) Patents                      (c) Trade Marks                      (d) Thesaurus
  - (iii) Fundamental research is concerned with  
(a) Applied field                      (b) surveys  
(c) formulation of theory                      (d) none of these
  - (iv) The first step in formulating a problem  
(a) Statement of the problem                      (b) Gathering of Data  
(c) Measurement                      (d) Survey
  - (v) Research conducted to find solution for an immediate problem is  
(a) Fundamental Research                      (b) Analytical Research  
(c) Survey                      (d) Action Research
  - (vi) A journal is likely to publish the papers with  
(a) original and significant findings                      (b) well organized and well-written  
(c) concise and yet complete                      (d) all of these qualities
  - (vii) Plagiarism is the appropriation of another person's:  
(a) Ideas                      (b) processes  
(c) Results                      (d) any of these
  - (viii) A government authority conferring a right for a set period, the sole right to exclude others from making, using, or selling an invention is a.  
(a) Copyright                      (b) Trademark  
(c) Patent                      (d) Title

- (ix) Fabrication is  
(a) Manipulation of research materials (b) appropriation of other's idea  
(c) Making up data (d) any of these
- (x) Scientific research is mainly based on:  
(a) Theoretical exercise (b) Empirical study  
(c) Interviews (d) Either (a) or (b)

**Group- B**

2. (a) What are the objectives of a research? Explain them briefly. Mention a few motivations for a researcher. [(CO1)(Remember/LOCQ)]  
(b) Compare the following:  
(i) Analytical Vs. Fundamental research and  
(ii) Conceptual Vs. Empirical research. [(CO1)(Understand/LOCQ)]  
**6 + 6 = 12**
3. (a) Analyse the characteristics of research? [(CO1) (Analyse/IOCQ)]  
(b) Classify research on the basis of application, objective and enquiry mode.  
[(CO1) (Evaluate/HOCQ)]  
**2 + 10 = 12**

**Group - C**

4. (a) What is the necessity of defining a problem? [(CO2)(Understand/IOCQ)]  
(b) In your opinion what is the significance of literature review. Mention how literature review should be reported. [(CO2)(Evaluate/HOCQ)]  
**2 + 10 = 12**
5. (a) What are the obligations of a researcher to maintain professional standard? Where do the students learn ethical decision making?  
[(CO3)(Understand/IOCQ)]  
(b) List the norms applied for "publishables" and "not acceptable" papers.  
[(CO3) (Remember/LOCQ)]  
**6 + 6 = 12**

**Group - D**

6. (a) Define interpretation. Why is it necessary? [(CO4)(Analyse/HOCQ)]  
(b) Explain a few techniques applied during interpretation.  
[(CO4)(Remember/LOCQ)]  
**7 + 5 = 12**
7. (a) What is the significance of report writing? State some standard report types.  
[(CO4)(Analyse/IOCQ)]  
(b) Give in details the parts of a technical report with brief descriptions.  
[(CO4) (Remember/LOCQ)]  
**6 + 6 = 12**

**Group - E**

8. (a) What are the common types of IP? What are registered IP and unregistered IP? Name some international IP agreements to which India is also a signatory. [(CO5)(Remember/LOCQ)]  
 (b) Define two IPR systems applied in India. [(CO5)(Understand/IOCQ)] **6 + 6 = 12**
9. (a) Where one can go to get IPR help in India? [(CO5)(Remember/LOCQ)]  
 (b) How one can avoid problems when defending IP rights in India? [(CO5) (Understand/IOCQ)] **4 + 8 = 12**

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	34.4%	37.5%	28.1%

**Course Outcome (CO):**

At the end of the course, students will be able to:

1. Understand research problem formulation
2. Analyze research related information
3. Follow research ethics
4. Understand the ultimate importance of ideas, concept and creativity
5. Importance of IPR for individuals and nations
6. Appreciate that IPR protection provides incentive to inventors for further research work.

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

Department & Section	Submission Link
ECE/VLSI	<a href="https://classroom.google.com/c/NDE3NTI2ODgxMTMz/a/NDc1MTUwMzAyNzEw/details">https://classroom.google.com/c/NDE3NTI2ODgxMTMz/a/NDc1MTUwMzAyNzEw/details</a>