

**RESEARCH METHODOLOGY AND IPR
(AEIE 5103)**

Time Allotted : 2½ hrs

Full Marks : 60

Figures out of the right margin indicate full marks.

*Candidates are required to answer Group A and
any 4 (four) from Group B to E, taking one from each group.*

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

Group – A

1. Answer any twelve:

12 × 1 = 12

Choose the correct alternative for the following

- (i) A successful research requirements
(a) Planning (b) Guidance
(c) Expert (d) All of the above.
- (ii) A hypothesis is a
(a) tentative statement whose validity is still to be tested
(b) supposition which is based on the past experiences
(c) statement of fact
(d) all of the above.
- (iii) Which one among the following is the most comprehensive source of population data?
(a) Census (b) National Sample Surveys
(c) Demographic Health Surveys (d) National Family Health Surveys.
- (iv) Which area is not an ethical aspects?
(a) How research is funded (b) How research is carried out
(c) How research is reported (d) How and what information is shared.
- (v) A short summary of Technical Report is called
(a) Article (b) Research Abstract
(c) Publication (d) Guide.
- (vi) What is the main role of research in education?
(a) To upsurge one's social status
(b) To increase one's job prospects
(c) To augment one's personal growth
(d) To help an applicant in becoming a renowned educationalist.
- (vii) Sources of literature review are all, except
(a) Journals (b) Books
(c) Articles (d) Discussions.

- (viii) If a person invents a new process/product for recording music, he/she will most likely apply for
 (a) Patent (b) Copyright
 (c) Trademark (d) Trade Secret.
- (ix) Which of the following is not true about questionnaire?
 (a) A technique for collecting data
 (b) An expensive method to collect data
 (c) Its quick and easy to collect data
 (d) Large amounts of information can be collected.
- (x) The appropriation of another person's ideas, processes, results or words without giving appropriate credit is called
 (a) Plagiarism (b) Falsification
 (c) Fabrication (d) Jurisdiction.

Fill in the blanks with the correct word

- (xi) When there are two modes in a data set, then the set is called _____.
- (xii) Heights=[168,170,150,160,182,140,175,191,152,150], the median is _____.
- (xiii) There are 5 marbles in a bag: 4 are blue, and 1 is red. What is the probability that a blue marble gets picked? _____.
- (xiv) Relation between mean, median and mode is _____.
- (xv) The lower quartile of the following data: 4, 6, 7, 8, 10, 23, 34 is _____.

Group - B

2. (a) List the advantage and limitations of Case study method of data collection (4 points each). [[C01](Understand/LOCQ)]
 (b) Distinguish between research methods and research methodology. [[C01](Understand/LOCQ)]
 (c) What are the problems encountered by Researchers in India? [[C01](Understand/LOCQ)]
4 + 4 + 4 = 12
3. (a) State the merits and demerits of collection of data (3 points each) through questionnaires. [[C02](Remember/LOCQ)]
 (b) Determine the median, mode and interquartile Range (IQR) of the given dataset {1,2,3,5,5,6,7,7,7,9,12} [[C02](Analyze/IOCQ)]
 (c) What is skewness? Explain positive and negative skewness with graph. [[C02](Understand/LOCQ)]
3 + (1 + 1 + 3) + (1 + 3) = 12

Group - C

4. (a) What is Bibliography? What are the different sources that a researcher can use to prepare bibliography? [[C03](Remember/LOCQ)]

- (b) What are the objectives in research ethics? Write the important principles related to ethical consideration in dissertation. *[[C03](Understand/LOCQ)]*
- (c) Mention four code words related to ethical principles. *[[C03](Remember/LOCQ)]*
- (1 + 3) + (2 + 4) + 2 = 12**
5. (a) State the role of a supervisor in a research. *[[C03](Understand/LOCQ)]*
- (b) What is your understanding about research proposal? List the contents of a good research proposal. *[[C03](Understand/LOCQ)]*
- (c) Distinguish between Research Abstract and Summary report. *[[C03](Apply/IOCQ)]*
- 2 + (2 + 4) + 4 = 12**

Group - D

6. (a) What is the difference between Copyright law and Patent law? *[[C04](Understand/LOCQ)]*
- (b) What rights do copyright and related right provide? *[[C04](Remember/LOCQ)]*
- (c) Discuss the benefits of protecting copyright and related rights. *[[C04](Understand/LOCQ)]*
- (d) What is the difference between Trademark law and Trade secrets law? *[[C04](Understand/LOCQ)]*
- 3 + 4 + 2 + 3 = 12**
7. (a) What is patent, and why are patent necessary? *[[C04](Understand/LOCQ)]*
- (b) What kind of protection do patent offer? *[[C04](Understand/LOCQ)]*
- (c) What rights do patent owners have? *[[C04](Understand/LOCQ)]*
- (d) What role do patents play in everyday life? *[[C04](Understand/LOCQ)]*
- (1 + 2) + 4 + 3 + 2 = 12**

Group - E

8. (a) Write the steps/process of patent registration. *[[C04](Remember/LOCQ)]*
- (b) What is the difference between convention patent application and PCT application? *[[C04](Remember/LOCQ)]*
- (c) Explain the term software patenting. *[[C04](Understand/LOCQ)]*
- 4 + 4 + 4 = 12**
9. (a) What is IPR? Give examples of IPR. *[[C04](Remember/LOCQ)]*
- (b) Why IPR is important? *[[C04](Remember/LOCQ)]*
- (c) What is the difference between property and intellectual property? *[[C04](Understand/LOCQ)]*
- (c) Write the advantages and disadvantages of IP (Intellectual property). *[[C04](Understand/LOCQ)]*
- (2 + 1) + 2 + 4 + 3 = 12**

Cognition Level	LOCQ	IOCQ	HOCQ
Percentage distribution	90.6	9.4	0

Course Outcome (CO):

After the completion of the course students will be able to

1. Understand research problem formulation and its solution approaches.
2. Analyze research related information.
3. Learn how to write report and research proposal following research ethics.
4. Judge importance of intellectual property and patent rights and learn the process of obtaining them.

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