



QP CODE: 25803225



Reg No : .....

Name : .....

**I.M.C.A DEGREE EXAMINATION , SEPTEMBER 2025**

**Sixth Semester**

Integrated MCA

**Core - IMCA6C01 - RESEARCH METHODOLOGY**

2020 Admission Onwards

F1AE0F62

Time: 3 Hours

Maximum: 75 Marks

**Part A**

*Answer any **ten** questions*

*Each question carries **3** marks*

1. What is the meaning of research?
2. What is a problem definition?
3. Explain the major components of research problem.
4. What is central tendency in basic statistical measures?
5. Calculate the median of 10, 12, 15, 18, 21.
6. What is harmonic mean?
7. What are type 1 and type 2 errors in hypothesis testing?
8. Explain the basic characteristics of chi square test.
9. Describe the significance of the methodology section in a research paper.
10. Enumerate the merits of using impact factor as a measure of a journal's influence and significance in academia.
11. Briefly explain three primary forms of Intellectual Property Rights.
12. Mention three potential benefits of obtaining a patent for an invention.

(10×3=30 marks)





## Part B

Answer *all* questions

Each question carries **9** marks

13. a) Explain research design in detail.

OR

b) What is research problem? Explain with example.

14. a) Calculate the mean, median and mode of following data: The distribution of 100 firms with Annual revenue - less than 2(10 firms), 2 to 4(15 firms), 4 to 6(20 firms), 6 to 8(30 firms), 8 to 10(8 firms), 10 to 12(5 firms), 12 to 14(4 firms), 14 to 16(3 firms), more than 16(5 firms).

OR

b) Explain standard deviation from mean, median and mode with suitable example.

15. a) What is scientific misconduct? Explain different forms of scientific misconduct.

OR

b) The average life of 26 electric bulbs were found to be 1200 hrs with standard deviation of 150 hrs. Test these bulbs could be considered as random sample from normal population with mean 1300 hrs (use t test with level of significance 5%).

16. a) Explain the concept of the h-index and its significance in measuring the impact and productivity of researchers.

OR

b) Critically evaluate the elements that should be avoided or included in each section of a research paper to ensure clarity, coherence, and adherence to academic standards.

17. a) Define IPR .Compare and contrast patents, copyrights, and trademarks, detailing their legal protections, duration, and the types of assets they safeguard.

OR

b) Explain the process of data interpretation and its role in drawing meaningful conclusions from research findings, emphasizing its significance in various fields.

(5×9=45 marks)

