

MODEL QUESTION PAPER

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SHS04

Siddaganga Institute of Technology, Tumakuru – 572 103

(An Autonomous Institute affiliated to Visvesvaraya Technological University, Belagavi, Approved by AICTE, New Delhi)

Fifth Semester B.E.

Research Methodology and IPR (Common to all branches)

Time: 03:00 Hours

Max. Marks: 100

Not e : **Answer any five questions choosing one full question from each unit.**

Unit - I

			Marks	BL	CO	PO
1	a)	What is research, and what are its primary objectives? Highlight the key factors that motivate researchers to undertake their studies.	10	II	1	2
	b)	Differentiate between the following types of research: (i) Descriptive vs. Analytical (ii) Fundamental vs. Applied (iii) Quantitative vs. Qualitative (iv) Conceptual vs. Empirical	10	III	1	2
2	a)	Illustrate the research process using a block diagram	10	II	1	2
	b)	What is sampling? Compare probability sampling and non-probability sampling methods with examples	10	II	1	2

Unit - II

3	a)	Discuss the importance of literature survey in research. How can it help in formulating a research problem?	10	II	2	2
	b)	Evaluate the role of citations, citation index, and impact factor in assessing the quality and impact of research work.	10	IV	2	2
4	a)	Enumerate the key ethical principles that help researchers in maintaining high ethical standards.	10	II	2	2
	b)	Using a diagram, explain how the following data visualization techniques enhance the understanding of complex data sets: i. Pie Chart ii. Stem and Leaf diagram iii. Boxplot	10	II	2	2

Unit - III

5	a)	Define research design. Discuss the various types of research designs and their applications.	10	II	3	2
	b)	Differentiate between: i. factors vs. levels ii. dependent vs. independent variables	10	III	3	2

		ii.	full factorial designs vs. fractional factorial designs				
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Marks	BL	CO	PO
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6	a)	What is a hypothesis? Explain the process of hypothesis testing.	10	II	3	2
	b)	Discuss the importance of both written and oral presentations in research methodology.	10	II	3	2

Unit - IV

7	a)	Describe the concept of intellectual property. Also discuss its various types: patents, designs and copyrights.	10	II	4	2
	b)	Discuss the various types and features of IPR agreements, including their importance in protecting intellectual property.	10	II	4	2

8	a)	Explain the common rules and practices followed in Intellectual Property Rights.	10	II	4	2
	b)	Describe the role of WIPO and WTO in the establishment and regulation of Intellectual Property Rights.	10	II	4	2

Unit - V

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9	a)	Illustrate the scope of patent rights and their significance in protecting innovations with example.	10	II	5	2
	b)	How do geographical indications contribute to the protection of regional products and services? Discuss their significance in preserving the uniqueness of local goods.	10	II	5	2

10	a)	What is the process of licensing related patents? Discuss the role of patent agents in the registration and licensing process.	10	II	5	2
	b)	Explain the procedure for registering patent agents and the responsibilities they hold in the patenting process.	10	II	5	2