

*Total number of printed pages: 1*

**Programme (PhD)/Semester-I/PCE101**

**2024**

**Research Methodology**

*Full Marks : 100*

**Time : Three hours**

*The figures in the margin indicate full marks for the questions.*

**Answer any five questions**

1	a)	Why is research important?	4
	b)	What are different objectives of research?	6
	c)	State the points that need to be remembered in choosing a topic for research.	4
	d)	What are characteristics of a good research?	6
2	a)	Define research. What do you mean by formulating a “hypothesis” for undertaking research?	4
	b)	Describe with short examples the major categories and subcategories of research types.	10
	c)	Differentiate between ‘research methods’ and ‘research methodology’.	6
3	a)	How would you formulate a ‘research problem’?	6
	b)	What are the major steps in undertaking research?	8
	c)	State the importance of literature-review and the sources of different types of literature for undertaking research?	6
4	a)	What approach would you adopt for collecting data for research involving a) a water resources engineering topic and b) a socio-economic aspect of a region?	6
	b)	What queries should a research design attempt to answer?	8
	c)	What steps should be followed in designing research?	6
5	a)	How would you organize the contents of your PhD dissertation?	8
	b)	State the important points to be remembered in citing and referencing in a research publication?	6
	c)	What would you consider most in planning and preparing a PowerPoint presentation of your research in a time slot of 10 minutes?	6
6	a)	What is an Intellectual Property (IP)? What are different types of IP?	5
	b)	What do you mean by a patent? Why is patenting important?	5
	c)	What is plagiarism? Why is checking plagiarism important for research and publication? What are the levels of penalty in submission of thesis and dissertations as per UGC regulations in India?	10