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 **PRESIDENCY UNIVERSITY**

  **Bengaluru**

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| **Ph. D Course Work End Term Examinations – JAN-FEB 2025** |
| **Date:** 05 – 02- 2025 **Time:** 09:30 am – 12:30 pm |

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| **School:** SOE | **Program:** Ph. D |
| **Course Code:** RES805 | **Course Name:** Research Methodology And Publication Ethics For Science |
| **Semester**: | **Max Marks**:100 | **Weightage**: 50% |

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| **CO - Levels** | **CO1** | **CO2** | **CO3** | **CO4** | **CO5** |
| **Marks** |  |  |  |  |  |

**Instructions:**

1. *Read all questions carefully and answer accordingly.*
2. *Do not write anything on the question paper other than roll number.*

**Part A**

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| **Answer ALL the Questions. Each question carries 10 marks. 6Q x 10M=60Marks** |
| **1** | Discuss the different types of research methods (qualitative, quantitative, and mixed methods) and their applications. How does the selection of a research method influence the literature review process? | **10 Marks** | **L1** | **CO** |
| **2** | Explain probability distributions with a focus on binomial and normal distributions. What is the difference between independent and dependent events in probability theory? | **10 Marks** | **L2** | **CO** |
| **3** | Discuss the impact of big data analytics on interdisciplinary research at the intersection of mathematics and science. | **10 Marks** | **L1** | **CO** |
| **4** | Define redundant publication, duplicate publication, and overlapping publication. Explain the differences between them with suitable examples. | **10 Marks** | **L1** | **CO** |
| **5** | Explain the principle of UV-Visible Spectroscopy and its importance in determining the optical properties of materials. | **10 Marks** | **L2** | **CO** |
| **6** | Define diffusion and explain its significance in research. How is diffusion studied in materials science and engineering? | **10 Marks** | **L2** | **CO** |

**Part B**

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| **Answer the Questions. Each question carries 20 marks 2Q x 20 = 40 Marks** |
| **7.** | a**)****b)****c)****d**) | **Case Study**: A graduate student, Sarah, is conducting research for her thesis on the impact of nanomaterials in environmental remediation. She reviews several articles to support her study and finds that some of the key information in her findings is directly copied from multiple sources, with only minor paraphrasing. Sarah decides to submit her thesis with these copied sections, believing that the core concepts are widely acknowledged and that minor rewording will not be noticed. A few months after submission, the university's plagiarism detection software flags these sections, and Sarah is called in for a review.**Question:**What ethical issues are involved in Sarah’s decision to copy and paraphrase information from multiple sources without proper citation?Analyze the consequences of plagiarism on Sarah’s academic and professional career. How should Sarah have handled these sections of her thesis to maintain ethical standards?Discuss the role of academic institutions in promoting research ethics and preventing plagiarism. What measures should be put in place to educate researchers on the importance of citation and intellectual honesty? | **20 Marks** | **L3** | **CO** |
|  |
| **8.** |  | Analyze the differences between a systematic literature review and a traditional narrative literature review. Evaluate the advantages and limitations of each approach in terms of their methodology, reliability, and suitability for different types of research. | **20 Marks** | **L3** | **CO** |

**\*\*\*\*\* BEST WISHES \*\*\*\*\***