JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -3 EXAMINATION- 2024

Ph.D. I Semester

COURSE CODE (CREDITS): 18P1WGE101 (3)   MAX. MARKS: 25

COURSE NAME: Research Methodology

COURSE INSTRUCTORS: Vivek Kumar Sehgal,   MAX. TIME: 2 Hours

Note: *(a) All questions are compulsory.*

   (b) Each question carries equal marks.

1. How can you effectively identify a novel and impactful research problem in computer science and engineering, ensuring it addresses a significant gap in the current body of knowledge?

2. What methodologies are most suitable for validating hypotheses in areas like algorithm development, machine learning, or cyber-physical systems? How can you ensure reproducibility and reliability in your experiments?

3. What strategies can be employed to collect, preprocess, and analyze large-scale datasets in a manner that maintains data integrity and minimizes biases?

4. How do ethical considerations influence research design and implementation in areas like AI, cybersecurity, or big data analysis?

5. What criteria should be used to evaluate the validity and reliability of experimental results in computer science research?