Programme: Bachelor of Vocation (Artificial Intelligence and Data Science) Semester-V

Course Title: Research Methodology

Course Code: BVIL-5111

Time Allowed: 3 Hours   **Max Marks: 60**

Note: Candidates are required to attempt five questions, selecting at Ieast one question from each section. The fifth question may be attempted from any section. Each question carries 12 marks.

Section — I

1. Explain meaning of Research and discuss its purpose?
2. Write a note on Evaluation and action Research.

Section — II

3. Explain grounded theory and Narrative approach in Research?
4. Explain different methods for conducting analysis of qualitative data.

Section — III

5. Explain different types of Journals available in Computer Science.
6. Explain Plagiarism and self-Plagiarism.

Section — IV

7. Explain IPR and Patent Laws.
8. Explain different points to be considered while writing a research paper

Programme: Bachelor of Vocation (Artificial Intelligence and Data Science) Semester-V

Course Title: Principles of Artificial Intelligence

Course Code: BVIL-5112

Time Allowed: 3 Hours   Max Marks: 60

Note: There are eight questions of equal marks (12 marks each). Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section.

Section A

1. Explain the term AI. Also Write in detail the history of AI intelligent agents.   (12)
2. What are problem solving agents. Explain with the help of example.   (12)

Section B

3. Explain any two informed search strategies With examples.   (12)

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4. What is propositional logic? Explain reasoning patterns in propositional logic. (12)

Section C

5. What do you mean by first order logic? Write its semantics. (12)

6. a) Write a note on backward and forward chaining. (8)

   b) What do you understand by unification. (4)

Section D

7. Explain. Baye's rule. Also mention its uses. (12)

8. Explain the following
   a) Probability
   b) Full joint distribution
   c) Wumpus world
   d) How to quantify uncertainty (4*3 =12)

Exam Code: 114005
(20)

Paper Code: 5249

Programme: Bachelor of Vocation (Artificial Intelligence and Data Science) Semester-V

Course Title: Machine Learning-II

Course Code: BVIL-5113

Time Allowed: 3 Hours

Max Marks: 60

Note: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question carries 12 marks.

Section — I

1. Explain reinforcement Learning. Explain Genetic Algorithms for reinforcement Learning.   12
2. Explain Q Learning? Also explain Thompson Sampling.   12

Section — II

3. Differentiate between Principal Component Analysis and Linear Discriminant Analysis?   12
4. Explain Generalised Discriminator Analysis.   12

Section — III

5. Explain Bias and Variance.　　　　　　　　　　12

6. Explain feature mapping. How it is different from Dimensionality Reduction?　　12

Section — IV

7. What is Grammar with respect to NLP? Explain Production Rules.　　　　　　　12

8. Differentiate between Grammar based and statistical language models.　　　　12

Exam Code: **114005**   Paper Code: **5250**
(20)

Programme: **Bachelor of Vocation (Artificial Intelligence and Data Science) Semester-V**

Course Title: Soft Computing

Course Code: BVIL-5114

Time Allowed: 3 Hours   Max Marks: 60

Note: Attempt five questions, selecting one question from each section. The fifth question may be attempted from any section. All questions carry equal marks. (12 each)

(Section A)

1. What are major areas in which soft computing is utilized? Explain with examples.   (12)

2. Explain:-
   a) Soft Computing v/s Hard Computing
   b) Decision Making Systems   (2x6=12)

(Section B)

3. What do you mean by predicate logic? How it is different from fuzzy logic? What are various operators

and quantifiers used in predicate logic? Explain with examples. (12)

4. What do you mean by fuzzy relation? How it is used? Give examples, advantages, disadvantages and application of both. (12)

(Section C)

5. Explain the architecture of Backpropagation network in detail. (12)

6. Differentiate between:-
   a) ADALINE and MADALINE
   b) ANN and BNN (2x6=12)

(Section D)

7. Explain various types of encoding methods used in Genetic Algorithms with suitable example. (12)

8. Explain in Genetic Algorithms:-
   a) Bitwise Operations
   b) Multilevel optimization (2x6=12)

Programme: **Bachelor of Vocation (Artificial Intelligence and Data Science) Semester-V**

Course Title: Project Management

Course Code: BVIL-5115

Time Allowed: 3 Hours   Max Marks: 40

Note: Candidates are required to attempt five questions, selecting at least one question from each section. The fifth question may be attempted from any section. Each question of equal marks. (8 mark)

Section A

1. (a) What is Project Management? What are the various importance of Project Management?
   (b) what are the activities covered by software project Management? (8)

2. Difference Between Functional and Non-functional testing. Explain various Software testing methods. (8)

Section B

3. (a) How to categorized the software projects?
   (b) Explain different methodologies in project management. (8)

4. (a) What are the best practices for Software Project Success?
   (b) what are the roles of stakeholders in project management? (8)

Section C

5. (a) When and How to plan activity? What are the objectives of activity planning?
   (b) How to Sequencing and Scheduling the activities? (8)

6. (a) Explain the concept of Forward Pass and Backward Pass.
   (b) How to Identifying the critical path? (8)

Section D

7. What are process capability models? Explain CMMI and SPICE process capability models. (8)

8. (a) What are the techniques to enhance software quality?
   (b) How do you write a good quality plans? (8)