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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_

**End Semester Examination – Nov/Dec - 2016**

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| **Code :** | **09BI216/12BI232** | **Duration :** | **3 hrs** |
| **Sub. Name:** | **MACHINE LEARNING IN BIOINFORMATICS** | **Max. Marks:** | **100** |

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| **Q. No.** | Questions | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Tossing a coin is an example of ……………………… modeling | (1) |
| 2. | Cox Jaynes axioms are used in ……………….. modeling. | (1) |
| 3. | Method for solving complex problems by breaking them down into simpler subproblems is known as ………………………………………………. | (1) |
| 4. | Gradient Descent is a type of ………………………. algorithm. | (1) |
| 5. | To extract useful information from a corpus of data D by building good probabilistic models is called as …………………………………………**.** | (1) |
| 6. | …………………………….. algorithm used in protein secondary structure prediction. | (1) |
| 7. | MLP stands for…………………………………………… | (1) |
| 8. | The likelihood algorithm performs………………………. | (1) |
| 9. | Process of identifying the regions of genomic DNA that encode genes is known as ……………………… | (1) |
| 10. | Bidirectional Recurrent Neural Networks is used for………………………………………………………. | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | What is the role of graphical model in machine learning? | (3) |
| 12 | What is the application of Monte-Carlo method? | (3) |
| 13 | How DNA technology can be applied in machine learning? | (3) |
| 14 | How the errors in machine learning approach is minimized? | (3) |
| 15 | What is a Markov process? What is its application in machine learning? | (3) |

**PART B(5 X 3= 15 MARKS)**

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| 16. | Elaborate on the process of Bayesian modeling. | (15) |
| (OR) | | |
| 17. | With suitable example explain the process of probabilistic modeling. | (15) |
| 18. | What are the different algorithms used in machine learning? Explain each of the algorithms with suitable example. | (15) |
| (OR) | | |
| 19. | Discuss in detail about the different learning algorithm used in machine learning. | (15) |
| 20. | What are neural networks? Explain in detail about the training of neural network. | (15) |
| (OR) | | |
| 21. | What are different statistical approaches for evaluating performance of prediction methods? | (15) |
| 22. | What is Hidden Markov Model? How HMM can be applied in predicting and analyzing DNA and RNA? | (15) |
| (OR) | | |
| 23. | What are the limitations and advantages of HMM? | (15) |
| 24. | Describe in detail about protein secondary structure prediction. | (15) |
| (OR) | | |
| 25. | Write about hybrid models and neural networks parameterization. | (15) |

ALL THE BEST