| Reg. No. | | | | | | | | | | | | |
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| Question Paper Code | 12348 |
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**B.E. / B.Tech - DEGREE EXAMINATIONS, NOV / DEC 2023**

Fifth Semester

**Artificial Intelligence and Data Science**

**20AIPC502 - DEEP LEARNING**

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

**PART - A (10 × 2 = 20 Marks)**

Answer ALL Questions

| | | *Marks, K-Level, CO* |
|---|---|---|
| 1. | Compare biological neuron from artificial neuron. | *2,K2,CO1* |
| 2. | State the purpose of regularization in deep neural network. | *2,K2,CO1* |
| 3. | Differentiate machine learning from deep learning. | *2,K2,CO2* |
| 4. | Mention the applications of deep learning. | *2,K1,CO2* |
| 5. | How will you calculate the output size of a convolution layer? | *2,K2,CO3* |
| 6. | Why AlexNet is better than CNN? Justify. | *2,K2,CO3* |
| 7. | Identify the purpose of sequence modeling. | *2,K2,CO4* |
| 8. | State the benefits of bi-directional RNN. | *2,K2,CO4* |
| 9. | Write a short note on deep fakes. | *2,K2,CO5* |
| 10. | Infer the purpose of memorization in deep associate memory networks. | *2,K2,CO5* |

**PART - B (5 × 13 = 65 Marks)**

Answer ALL Questions

| | | | |
|---|---|---|---|
| 11. | a) | Explain the feedforward neural network with a neat sketch. | *13,K2,CO1* |
| | | **OR** | |
| | b) | Elucidate the purpose of hyperparameter tuning in neural network. | *13,K2,CO1* |
| 12. | a) | Summarize the various activation functions used in neural networks. | *13,K2,CO2* |
| | | **OR** | |
| | b) | Demonstrate the Restricted Boltzmann Machines in detail. | *13,K2,CO2* |
| 13. | a) | Explain the various stages of Convolutional Neural Network in detail. | *13,K2,CO3* |
| | | **OR** | |
| | b) | With a neat sketch, highlight the ResNet architecture in detail. | *13,K2,CO3* |

14. a) Describe the Recurrent Neural Network with a neat sketch. *13,K2,CO4*

**OR**

b) Elaborate the Encoder-Decoder sequence to sequence architecture in detail. *13,K2,CO4*

15. a) Explain Deep Belief Networks with a suitable diagram. *13,K2,CO5*

**OR**

b) Discuss the Generative Neural Networks with suitable example. *13,K2,CO5*

## PART - C (1 × 15 = 15 Marks)

16. a) Demonstrate how deep learning provides solutions for identifying deep fake in images and videos. *15,K3,CO6*

**OR**

b) Design a deep learning solution for identifying fake fingerprints. *15,K3,CO6*