

**BIRLA INSTITUTE OF TECHNOLOGY, MESRA, RANCHI
(END SEMESTER EXAMINATION)**

**CLASS: MCA
BRANCH: COMPUTER SCIENCE & ENGINEERING**

**SEMESTER : III
SESSION : MO/2023**

SUBJECT: CA525 DEEP LEARNING

TIME: 3 Hours

FULL MARKS: 50

INSTRUCTIONS:

1. The question paper contains 5 questions each of 10 marks and total 50 marks.
 2. Attempt all questions.
 3. The missing data, if any, may be assumed suitably.
 4. Before attempting the question paper, be sure that you have got the correct question paper.
 5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.
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|--------|---|---------|----|
| Q.1(a) | How neural network is different from deep learning? Discuss the importance of deep learning. | [2+3] 1 | 2 |
| Q.1(b) | Discuss the following: (i) Evaluation of classification results (ii) K-means algorithm | [5] 1 | 3 |
| Q.2(a) | Discuss the deep learning feed forward neural networks. | [5] 2 | 2 |
| Q.2(b) | Explain backpropagation algorithm and its importance in deep learning. | [5] 2 | 4 |
| Q.3(a) | Discuss L_2 regularized error function its use in general weight update rule. | [5] 3 | 4 |
| Q.3(b) | Compare and contrast between the following: (i) momentum and dropout (ii) Stochastic gradient descent and online learning | [5] 3 | 2 |
| Q.4(a) | Explain convolutional neural networks with the help of suitable diagram. | [5] 4 | 4 |
| Q.4(b) | Explain the working of recurrent neural networks. | [5] 4 | 4 |
| Q.5(a) | Explain the importance of autoencoder in deep learning. | [5] 5 | 4 |
| Q.5(b) | Discuss the various types of autoencoder architectures. | [5] 5 | 2 |

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