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**BRAINWARE UNIVERSITY**

Library
Brainware University
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Term End Examination 2025-2026
Programme – M.Tech.(CSE)-2025
Course Name – Deep Learning & LLM
Course Code - MTS27505 (T)
(Semester II)

Full Marks : 40**Time : 2:0 Hours**

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 10=10

1. Choose the correct alternative from the following :

- (i) Choose the function primarily used to introduce non-linearity.
 - a) Loss function
 - b) Optimizer
 - c) Activation function
 - d) Cost metric
- (ii) Identify the parameter controlling step size in optimization.
 - a) Momentum
 - b) Epoch
 - c) Learning rate
 - d) Batch size
- (iii) Select the loss function commonly used for regression.
 - a) Cross-entropy
 - b) Hinge loss
 - c) Mean Squared Error
 - d) Log loss
- (iv) Identify the main purpose of batch normalization.
 - a) Reduce training time
 - b) Prevent vanishing gradients
 - c) Normalize layer inputs
 - d) Reduce parameters
- (v) Identify the effect of increasing batch size excessively.
 - a) Faster convergence
 - b) Better generalization
 - c) Poor generalization
 - d) Reduced computation
- (vi) Identify the risk of training without regularization.
 - a) Underfitting
 - b) Overfitting
 - c) Gradient explosion
 - d) Slow training
- (vii) Select the activation function best suited for output layer in binary classification.
 - a) ReLU
 - b) Softmax
 - c) Sigmoid
 - d) Tanh
- (viii) Select the layer that reduces spatial dimensions.
 - a) Convolution layer
 - b) Pooling layer
 - c) Fully connected layer
 - d) Input layer
- (ix) Identify the term stride refers to.

- a) Filter size
- b) Padding type
- c) Step size of filter movement
- d) Number of channels
- (x) Choose the purpose of padding.
- a) Increase parameters
- b) Preserve spatial dimensions
- c) Reduce computation
- d) Normalize inputs

Group-B

(Short Answer Type Questions)

3 x 5=15

- 2. List any three applications of LLMs. (3)
- 3. State the role of filters in CNNs. (3)
- 4. Define Recurrent Neural Network. (3)
- 5. Analyze why LSTM is preferred over basic RNN. (3)
- 6. Compare BERT and GPT. (3)

OR

Analyze the importance of weight sharing in CNNs. (3)

Group-C

(Long Answer Type Questions)

5 x 3=15

- 7. Explain CNN architecture with layers. (5)
- 8. Analyze the impact of pooling on CNN performance. (5)
- 9. Evaluate challenges in evaluating LLMs. (5)

OR

Justify CNN dominance in image classification. (5)

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