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Examination: Odd Semester Examination 2024

Paper Name: Neural Network and deep Learning (Skill Enhancement Course-II)

Paper Code: MCSB SEC21

Maximum Marks: 60

Time: 2.30 Hours (10:00AM To 12:30PM)

Note: This question paper has two sections :
Section A and Section B. Assume missing data, if any.

Attempt (i) Section-A: All questions are compulsory.

(ii) Section-B: Attempt any FOUR QUESTIONS.

Section –A (All questions are compulsory) 4×5=20 Marks

Q1. What is an activation function, also write types of it.	CO1	BL1, BL2
Q2. What is a recurrent neural network (RNN), and how is it different from a feedforward network?	CO2	BL3
Q3. What is overfitting, and how can it be prevented?	CO1	BL1, BL2
Q4. Describe the learning process in Multilayer Perceptions using backpropagation and gradient descent.	CO4	BL4

Section –B (Attempt any Four questions) 4×10=40 Marks

Q1. What is regularization in deep learning? Discuss L1, L2 regularization and dropout techniques to prevent overfitting.	CO4	BL3
Q2. What are Generative Adversarial Networks (GANs)? Discuss their working mechanism and applications in tasks like image generation and deepfakes.	CO3	BL3

Q3. What is hyperparameter tuning, and why is it essential in training deep Learning models? Explain its impact on model performance with examples.	CO5	BL4
Q4. Explain the architecture and working of Convolutional Neural Networks CNNs	CO1	BL4
Q5. What is reinforcement learning, and how does it differ from supervised and unsupervised learning? Explain its application in deep reinforcement learning.	CO4	BL1 BL4 BL6
Q6. Describe the application of deep learning in medical image analysis. Provide a case study of how CNNs are used for tasks like retinal disease diagnosis.	CO 4	BL5