

**CMR TECHNICAL CAMPUS
UGC AUTONOMOUS**

**B. Tech. VII Semester Regular End Examinations, November-2025
DEEP LEARNING
Common to CSM, AIML**

Time: 3 Hours**Max. Marks: 60****Note**

- i. This Question paper contains Part- A and Part- B.
- ii. All the Questions in Part A are to be answered compulsorily.
- iii. All Questions from Part B are to be answered with internal choice among them.

PART-A**10 X 01 = 10 Marks**

| | | Marks | CO | BL |
|----|---|--------------|-----------|-----------|
| 1. | a | 1 | CO1 | L1 |
| | b | 1 | CO1 | L3 |
| | c | 1 | CO2 | L2 |
| | d | 1 | CO2 | L1 |
| | e | 1 | CO3 | L5 |
| | f | 1 | CO3 | L4 |
| | g | 1 | CO4 | L1 |
| | h | 1 | CO4 | L2 |
| | i | 1 | CO5 | L1 |
| | j | 1 | CO5 | L4 |

PART- B**5 X 10 = 50 Marks**

| | | Marks | CO | BL |
|----|---|--------------|-----------|-----------|
| 2. | a | 5 | CO1 | L5 |
| | b | 5 | CO1 | L1 |

OR

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|----|---|--|---|-----|----|
| 3 | a | Distinguish Underfitting and Overfitting with causes and solutions. | 5 | CO1 | L4 |
| | b | Explain the need for activation functions in neural networks with examples. | 5 | CO1 | L2 |
| 4 | a | Distinguish L1 & L2 regularization with suitable examples. | 5 | CO2 | L4 |
| | b | What is Early Stopping? Describe with a training-validation curve. | 5 | CO2 | L1 |
| OR | | | | | |
| 5 | a | Explain briefly about good Parameter Initialization strategies to improve model convergence. | 5 | CO2 | L2 |
| | b | Explain Parameter Sharing with a CNN or RNN example. | 5 | CO2 | L5 |
| 6 | a | What is Padding? Explain its effect on feature map size. | 5 | CO3 | L1 |
| | b | Explain the motivation behind CNNs using spatial feature learning. | 5 | CO3 | L5 |
| OR | | | | | |
| 7 | a | Give a short note on CNN applications in real-world problems. | 5 | CO3 | L2 |
| | b | What is a Receptive Field? Describe how it grows in deep CNNs. | 5 | CO3 | L1 |
| 8 | a | Explain briefly about GRUs and how are they different from LSTM. | 5 | CO4 | L2 |
| | b | List out the challenges of long-term dependencies in RNNs. | 5 | CO4 | L4 |
| OR | | | | | |
| 9 | a | Explain Sequence-to-Sequence models with a translation example. | 5 | CO4 | L5 |
| | b | What is the Vanishing Gradient Problem? Why does it occur? | 5 | CO4 | L1 |
| 10 | a | Explain any two-performance metrics used in classification problems. | 5 | CO5 | L2 |
| | b | Write debugging strategies used during neural network training. | 5 | CO5 | L1 |
| OR | | | | | |
| 11 | a | Describe how deep learning is applied in speech recognition systems. | 5 | CO5 | L2 |
| | b | List out the deep learning applications in NLP like text classification or translation. | 5 | CO5 | L4 |

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B. Tech. VII Semester Regular End Examinations, November-2025

CLOUD COMPUTING

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Note

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- iii. All Questions from Part B are to be answered with internal choice among them.

PART-A

10 X 01 = 10 Marks

| | | Marks | CO | BL |
|----|---|-------|-----|----|
| 1. | a | 1 | CO1 | L1 |
| | b | 1 | CO1 | L1 |
| | c | 1 | CO2 | L1 |
| | d | 1 | CO2 | L1 |
| | e | 1 | CO3 | L1 |
| | f | 1 | CO3 | L1 |
| | g | 1 | CO4 | L1 |
| | h | 1 | CO4 | L1 |
| | i | 1 | CO5 | L1 |
| | j | 1 | CO5 | L1 |

PART- B

5 X 10 = 50 Marks

| | | Marks | CO | BL |
|----|---|-------|-----|----|
| 2. | a | 5 | CO1 | L5 |
| | b | 5 | CO1 | L5 |
| OR | | | | |
| 3 | a | 5 | CO1 | L5 |

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- b Compare cloud computing with grid and distributed computing architectures. 5 CO1 L4
- 4 a Explain cloud service models in detail: IaaS, PaaS, SaaS. 5 CO2 L5
b Write about cloud programming models and cloud application development environments. 5 CO2
- OR
- 5 a Discuss cloud application development platforms like Google App Engine, Azure App Service, and Heroku. 5 CO2 L3
b Explain pervasive computing with practical cloud-based use cases. 5 CO2 L5
- 6 a Describe types of hypervisors and their role in cloud computing. 5 CO3 L2
b Explain the MapReduce programming model with a suitable example. 5 CO3 L5
- OR
- 7 a Discuss SaaS development from different perspectives with appropriate examples. 5 CO3 L3
b Describe hypervisors in detail—architecture, types, advantages, case studies. 5 CO3 L2
- 8 a Discuss transport layer issues in cloud data centers and explain TCP enhancements for DCNs. 5 CO4 L3
b Discuss challenges in designing networks for large-scale cloud data centers. 5 CO4 L3
- OR
- 9 a Compare cloud service providers—AWS, Azure, Google Cloud Platform—in terms of services and architecture. 5 CO4 L4
b Explain networking issues such as latency, congestion, packet loss, and bottlenecks in DCNs. 5 CO4 L5
- 10 a Discuss Hadoop architecture (NameNode, DataNode, JobTracker, TaskTracker) with a diagram. 5 CO5 L3
b Explain audit and compliance requirements (ISO 27001, GDPR, SOC2) for cloud providers. 5 CO5 L5
- OR
- 11 a Describe cloud security aspects and platform-related security challenges. 5 CO5 L2
b Explain distributed computing tools used for managing cloud systems—Hadoop & MongoDB. 5 CO5 L5

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B. Tech. VII Semester Regular End Examinations, November-2025

GENERATIVE AI

Common to CSM, AIML

Time: 3 Hours

Max. Marks: 60

Note

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- iii. All Questions from Part B are to be answered with internal choice among them.

PART-A

10 X 01 = 10 Marks

| | Marks | CO | BL |
|------|-------|-----|----|
| 1. a | 1 | CO1 | L1 |
| b | 1 | CO1 | L1 |
| c | 1 | CO2 | L1 |
| d | 1 | CO2 | L1 |
| e | 1 | CO3 | L1 |
| f | 1 | CO3 | L1 |
| g | 1 | CO4 | L1 |
| h | 1 | CO4 | L1 |
| i | 1 | CO5 | L1 |
| j | 1 | CO5 | L1 |

PART- B

5 X 10 = 50 Marks

| | Marks | CO | BL |
|------|-------|-----|----|
| 2. a | 5 | CO1 | L2 |
| b | 5 | CO1 | L2 |
| OR | | | |
| 3. a | 5 | CO1 | L2 |
| b | 5 | CO1 | L3 |
| 4. a | 5 | CO2 | L2 |

- b Discuss the process of designing effective prompts for large language models with examples. 5 CO2 L3
- OR
- 5 a Compare and contrast the Encoder and Decoder mechanisms in a Transformer. 5 CO2 L4
- b Describe different techniques for prompt optimization and refinement. 5 CO2 L2
- 6 Explain the architecture and working principle of Generative Adversarial Networks (GANs). 10 CO3 L2
- OR
- 7 a Define Nash Equilibrium. Discuss its significance in the training of GANs. 5 CO3 L2
- b Demonstrate how GPT-4V can be used for multimodal understanding and image generation, highlighting its key capabilities through relevant examples. 5 CO3 L3
- 8 Describe the architecture and working of CycleGAN with neat diagram. 10 CO4 L2
- OR
- 9 a Differentiate between Neural Style Transfer and GAN-based painting generation. 5 CO4 L4
- b Explain the Actor-Critic Network architecture with its advantages over Deep Q-Learning. 5 CO4 L2
- 10 a Describe the process of training and fine-tuning generative models with examples. 5 CO5 L3
- b Discuss how TimeSformer can be applied for video understanding tasks. 5 CO5 L3
- OR
- 11 a Explain the concept of Transfer Learning and its importance in generative AI. 5 CO5 L2
- b Differentiate Open Source models and Proprietary models in terms of accessibility, customization, and innovation. 5 CO5 L4
