Graphic Era HILL UNIVERSITY

Term Evaluation (Even) Semester Examination March 2025

Roll no. 2218120

Name of the Course: B.Tech

Name of the Paper: Large language Models and Generative AI

Semester: VI

Paper Code: TCS 692

Time: 1.5 hour

Maximum Marks: 50

Note:

(i) Answer all the questions by choosing any one of the sub questions
(ii) Each question carries 10 marks.
(iii) Please specify COs against each question.

Q1	
(a)	Why do LSTMs perform better than standard RNNs in long sequences?
(c)	How does the cell state in LSTMs help in retaining long-term dependencies?
Q2	
(a)	Why is the dot-product attention scaled in the Scaled Dot-Product Attention mechanism?
(b)	What is the role of position encoding in self-attention mechanisms?
Q3	
(a)	Explain how query, key, and value vectors are processed in multi-head attention.
(b)	Why is masked attention necessary in the decoder but not in the encoder?
Q4	
(a)	Why is transfer learning useful in deep learning applications?
(b)	What are some real-world applications of transfer learning in computer vision and NLP?
Q5	
(a)	What is the difference between zero-shot learning, one-shot learning, and few-shot learning in the co
(b)	What is chunking, and why is it used in document retrieval for RAG?