

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2026

B.Tech-VII Semester (CSE/IT/BT/ECE/CE)

COURSE CODE (CREDITS): 25B1WC1737 (2)

MAX. MARKS: 15

COURSE NAME: Deep Learning for NLP

COURSE INSTRUCTOR: Kushal Kanwar

MAX. TIME: 1 Hour

Note: (a) All questions are compulsory.

(b) The candidate is allowed to make Suitable numeric assumptions wherever required for solving problems

(c) Use of calculator is not allowed

Q	Question	CO	Marks
Q1	Given the following corpus of sentences "This is a Cat. The cat is red. Red is beautiful." Create the vocabulary set, Integer encoding and one-hot encoding for the words of the corpus.	1	1+1+2 = 4
Q2	Compare traditional NLP with NLP with Deep Learning in terms of feature selection and word representation.	1	2
Q3	An e-commerce company wants to automatically classify customer reviews into three sentiment categories: positive, negative, and neutral . (a) Draw and explain the general NLP pipeline, covering the following stages: Data collection, Text cleaning and preprocessing, Tokenization and representation, Model training, Evaluation, Deployment and monitoring. (b) Apply this pipeline to the customer-review sentiment-classification problem. For each stage, specify: the operations performed, one suitable technique or model, and the expected output. (c) Consider the review: "The camera quality is excellent, but the battery barely lasts a day." Explain why this review may be difficult to classify.	2	3+1+1=5
Q4	(a) Define the Rectified Linear Unit (ReLU) activation function mathematically. Calculate its output for $x=-3$ and $x=4$. State one advantage of ReLU. (b) Show that if the identity activation function is used in an artificial neural network (ANN), then a single layer is equivalent to any number of layers.	2	2+2=4