JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST -1 EXAMINATION- 2023

B.Tech-VII Semester (ECE)

COURSE CODE(CREDITS): 19B1WEC732 (3)   MAX. MARKS: 15

COURSE NAME: Pattern Analysis in Machine Intelligence

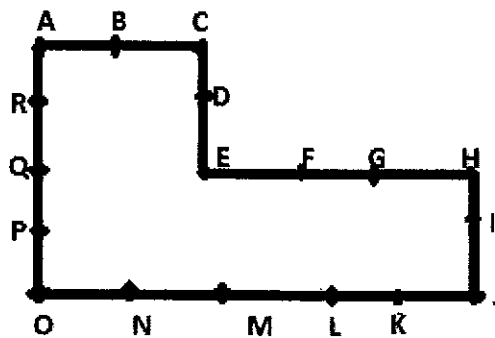COURSE INSTRUCTORS: Dr. Alok Kumar   MAX. TIME: 1 Hour

Note: (a)All questions are compulsory.

(b)Marks are indicated against each question in square brackets.

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

Q. 1 What is chain code? How to decide the direction in chain code using 8-Connectivity and 4-Connectivity? How 8-Connectivity is better than the 4-Connectivity? How the drawbacks of chain code are overcome by differential chain code? Find out the chain code and differential chain code for the following Fig using 4 connectivity. (Assume, R is the starting point).
[CO1, CO2] [3+2=5Marks]

Q.2 What are the steps involved in pattern recognition? Explain the structure of typical pattern recognition system with suitable diagram.   [CO1, CO2] [3 Marks]

Q.3 Why we use proximity measure in pattern classification? What are the commonly employed different distance measures? Assume two vectors X and Y as follows: X = (34,12,05,07,14) and Y = (24,5,12,13,7). Find different distance measures.   [CO1, CO2] [3 Marks]

Q.4 How Feature Extraction is different from Feature Selection. Also discuss the importance of feature selection and feature extraction in pattern analysis with suitable examples. List the two techniques used for feature selection and feature extraction.   [CO2] [4 Marks]