

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST -2 EXAMINATION- 2025

M.Tech-I Semester (CSE-Data Science)

COURSE CODE (CREDITS):22M1WCI133(3)

MAX. MARKS: 25

COURSE NAME: INTRODUCTION TO STATISTICAL LEARNING

COURSE INSTRUCTORS: PROF. PARDEEP KUMAR

MAX. TIME: 1 Hour 30 Min

Note: (a) All questions are compulsory.

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

Q.No	Question	CO	Marks																																																																											
Q1	(i) Consider the weather data set given below: <table><tr><th>Outlook</th><th>Temperature</th><th>Humidity</th><th>Windy</th><th>Play</th></tr><tr><td>Sunny</td><td>Hot</td><td>High</td><td>False</td><td>No</td></tr><tr><td>Sunny</td><td>Hot</td><td>High</td><td>True</td><td>No</td></tr><tr><td>Overcast</td><td>Hot</td><td>High</td><td>False</td><td>Yes</td></tr><tr><td>Rainy</td><td>Mild</td><td>High</td><td>False</td><td>Yes</td></tr><tr><td>Rainy</td><td>Cool</td><td>Normal</td><td>False</td><td>Yes</td></tr><tr><td>Rainy</td><td>Cool</td><td>Normal</td><td>True</td><td>No</td></tr><tr><td>Overcast</td><td>Cool</td><td>Normal</td><td>True</td><td>Yes</td></tr><tr><td>Sunny</td><td>Mild</td><td>High</td><td>False</td><td>No</td></tr><tr><td>Sunny</td><td>Cool</td><td>Normal</td><td>False</td><td>Yes</td></tr><tr><td>Rainy</td><td>Mild</td><td>Normal</td><td>False</td><td>Yes</td></tr><tr><td>Sunny</td><td>Mild</td><td>Normal</td><td>True</td><td>Yes</td></tr><tr><td>Overcast</td><td>Mild</td><td>High</td><td>True</td><td>Yes</td></tr><tr><td>Overcast</td><td>Hot</td><td>Normal</td><td>False</td><td>Yes</td></tr><tr><td>Rainy</td><td>Mild</td><td>High</td><td>True</td><td>No</td></tr></table> Table 1: Weather Data Set Make a classification model using ID-3 (Iterative Dichotomizer-3) decision tree approach to predict humidity level.	Outlook	Temperature	Humidity	Windy	Play	Sunny	Hot	High	False	No	Sunny	Hot	High	True	No	Overcast	Hot	High	False	Yes	Rainy	Mild	High	False	Yes	Rainy	Cool	Normal	False	Yes	Rainy	Cool	Normal	True	No	Overcast	Cool	Normal	True	Yes	Sunny	Mild	High	False	No	Sunny	Cool	Normal	False	Yes	Rainy	Mild	Normal	False	Yes	Sunny	Mild	Normal	True	Yes	Overcast	Mild	High	True	Yes	Overcast	Hot	Normal	False	Yes	Rainy	Mild	High	True	No	3	10
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Q3	“Iterative Dichotomizer-3 doesn’t perform well on datasets with continuous attribute” Justify the above statements with suitable reasoning, example and diagram	3	2																																																												
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