

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

Make-up Examination-Nov-2025

COURSE CODE (CREDITS): 22M1WCI133(3)

MAX. MARKS: 25

COURSE NAME: INTRODUCTION TO STATISTICAL LEARNING

COURSE INSTRUCTORS: PROF. PARDEEP KUMAR MAX. TIME: 1 Hour 30 Minutes

Note: Note: (a) All questions are compulsory.

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

(c) Calculator is allowed.

Q.No	Question	CO	Marks																																																																											
Q1	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 C4.5 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
Outlook	Temperature	Humidity	Windy	Play																																																																										
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Q2	Consider the weather data set given below:	4	10																																																																											

	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
Table 1: Weather Data Set Make a classification model for the tuple X(Outlook=Sunny, Temperature:Cool, Humidity=Normal, Windy=False) to predict whether the game will be played or not.					
Q3	Define the following terms with suitable formula: (i) Median for ungrouped data (ii) Accuracy (iii) Precision (iv) Min-Max Normalization (v) Z-Score				1 & 2
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