Code No: 138CY

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech IV Year II Semester Examinations, December - 2020
MACHINE LEARNING
(Electronics and Communication Engineering)

Time: 2 Hours
Max. Marks: 75

Answer any Five Questions
All Questions Carry Equal Marks
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1. Derive an example to explain the working of candidate eliminate algorithm. [15]

2. You are stranded on a deserted island. Mushrooms of various types grow widely all over the island, but no other food is anywhere to be found. Some of the mushroom shave been determined as poisonous and others as not (determined by your former companions' trial and error). You are the only one remaining on the island. You have the following data to consider:

Example	Not Heavy	Smelly	Spotted	Smooth	Edible
A	1	0	0	0	1
B	1	0	1	0	1
C	0	1	0	1	1
D	0	0	0	1	0
E	1	1	1	0	0
F	1	0	1	1	0
G	1	0	0	1	0
H	0	1	0	0	0
U	0	1	1	1	?
V	1	1	0	1	?
W	1	1	0	0	?

You know whether or not mushrooms A through H are poisonous, but you do not know about U through W. Classify mushrooms U, V and W using the decision tree as poisonous or not poisonous. [15]

3. Explain in detail perceptron based artificial neural network system its representation and training rule. [15]

4. Suppose hypothesis h commits r = 10 errors over a sample of n = 65 independently drawn examples.
   a) What is the variance and standard deviation for number of true error rate error D(h)?
   b) What is the 90% confidence interval (two-sided) for the true error rate? [7+8]

5. Explain Bayesian belief network and conditional independence with example. [15]

6. Describe K-nearest Neighbour learning Algorithm for continues (real) valued target function. [15]

7. With an example explain the parallelizing genetic algorithms. [15]

8. Describe in detail about inductive-analytical approaches to learning. [15]

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