Course No.: CSE 3209   **CT#1**   **Time: 20 Minutes**   **Marks:20**

Q1. Consider the dataset below to make a decision tree to be learned which predicts 15 whether people pass AI (True or False), based on their previous GPA (High, Medium or Low) and whether or not they studied.

GPA	Studied	Passed
L	F	F
L	T	T
M	F	F
M	T	T
H	F	T
H	T	T

Now answer to the following questions: (Calculate step by step for questions i to iii)
- i.   What is the entropy H(Passed)? [3]
- ii.   What is the entropy H(Passed | GPA)? [4]
- iii. What is the entropy H(Passed | Studied)? [4]
- iv.   Draw the decision tree with the root and its immediate successors that would [4] be learned for this dataset. Put your logic for selecting the attribute as the root.

Q2. Distinguish between supervised and unsupervised learner with figures.   5