University of Asia Pacific
Dept. of Computer Science and Engineering
Class Test – 03, Fall–2020
Course Code: CSE 403 (A)   Course Title: Artificial Intelligence and Expert Systems
Total Marks: 20   Time: 40 (30+10) Mins

Answer the following questions:

1. Define query variable, evidence variable and hidden variable with example.   5

2   The probability of sun on Saturday is 0.7. The Probability Transition Matrix is given bellow. Consider   15
    the values of the probabilities as follows:

Saturday	Next Day	Probability
rain	rain	A = 1 - B
rain	sun	B = (your birthdate) / 1000
sun	rain	C = SQRT(your birthdate) / 100
sun	sun	D = 1 - C

What is the probability of raining on Monday? For example, if the last two digits of someone's
birthdate is **25** then

B = 25 / 1000 = 0.025	C = SQRT(25) / 100 = 0.05
A = 1 – B = 1 – 0.025 = 0.975	D = 1 – C = 1 – 0.05 = 0.95

If someone's birthdate includes a **"zero"** element, then he/she will use **"3"** instead of **"zero"**. For
example, if someone's birthdate is **10**, then B = **13** / 1000 and so on respectively.