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Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF COMPUTER SCIENCE & ENGINEERING

Digital Assignment - II Fall Semester 2021-22 Slot : C2

Course: CSE3013 – Artificial Intelligence

Faculty : Dr.S.ANTO

Question 1:

On an airport all passengers are checked carefully. Let T with $t \in \{0, 1\}$ be the random variable indicating whether somebody is a terrorist ($t = 1$) or not ($t = 0$) and A with $a \in \{0, 1\}$ be the variable indicating arrest. A terrorist shall be arrested with probability $P(A = 1|T = 1) = 0.98$, a non-terrorist with probability $P(A = 1|T = 0) = 0.001$. One in hundred thousand passengers is a terrorist, $P(T = 1) = 0.00001$. What is the probability that an arrested person actually is a terrorist?

Question 2:

In an oral exam you have to solve exactly one problem, which might be one of three types, A, B, or C, which will come up with probabilities 30%, 20%, and 50%, respectively. During your preparation you have solved 9 of 10 problems of type A, 2 of 10 problems of type B, and 6 of 10 problems of type C.

- a) What is the probability that you will solve the problem of the exam?
- b) Given you have solved the problem, what is the probability that it was of type A

Note : The answers should be handwritten and soft copy to be uploaded in Vtop