Nagar Yuwak Shikshan Sanstha's

Yeshwantrao Chavan College of Engineering

(An Autonomous Institution affiliated to RTM Nagpur University)

Hingna Road, Wanadongri, Nagpur - 441 110

EVEN Term 2021-22 **07.04.22** Mid Semester Exam II

First Semester BTech (AIDS)

CIDS2106 Foundations of Data Science

Time: 1Hr 30 Min] **[Max Marks: 30**

INSTRUCTIONS TO EXAMINEES

1. All questions are compulsory and figures to right indicate marks allotted, CO & Bloom's Level
2. Assume suitable data wherever necessary.

Que No.	Question Description	Marks	Bloom's Level
Q1. A.	Classify the following probability estimates as classical, relative, and subjective. i. The probability that 4th wave of COVID will arrive is 0.72 ii. Probability that temperature will go high this year is 0.68 iii. Probability that randomly selected flight will arrive on time is 0.87	3M	L2
Q1 B	A produce shipper has 10000 boxes of bananas from Ecuador and Honduras. An inspection has determined the following information: i. What is the probability that a box selected	1.5+ 1.5 +3M	L3

	# boxes	Damaged fruits	Overripe fruits
Ecuadoran	6000	200	840
Honduran	4000	365	295

	at random will contain damaged fruit? Overripe fruit? ii. Given that a randomly selected box contains overripe fruit, what is the probability that it came from Honduras?		
Q2 A.	Given a random variable, X, has a binomial distribution with n=50 trials and p = 0.25, use the normal approximation to the binomial to find i. $P(x > 10)$ ii. $P(x < 18)$ iii. $P(x > 21)$ iv. $P(9 < x < 14)$	8M	L3
Q2 B	Given $\lambda = 4.2$, for Poisson distribution, find $P(x<=2)$	2M	L3
Q3.A.	List any 5 domains of data analysis and explain how you will apply Binomial and Normal probability distributions in any two domains.	5+2.5+2.5 M	L1,L3

$$P(x) \frac{\lambda^x * e^{-\lambda}}{x!}$$

0.25 n