



Nagar Yuwak Shikshan Sanstha's Yeshwantrao Chavan College of Engineering

(An Autonomous Institution affiliated to Rashtrasant Tukadoji Maharaj
Nagpur University)

(Accredited 'A++' Grade by NAAC)
Hingna Road, Wanadongri, Nagpur - 441 110

Odd Term 2022-2023

III Semester B.Tech.

Mid Semester Exam I

AIDS2202: Statistics for Data Science

Time: 1:30 Hr

Date: 28-11-2022

Max Marks: 30

Instructions to examinees:

1. Figures in bracket to the right indicate the marks for questions.
2. Attempt all questions and assume suitable data wherever necessary.

Que. No.	Sub Question	Question and Description	Max Marks	CO Bloom's Level
1	A	<p>Universal Burger is concerned about product waste, so they sampled their burger waste record from the past year with the following results:</p> <p style="text-align: center;"><u>Number of Burgers Discarded During a Shift</u></p> <p style="text-align: center;">02 16 04 12 19 29 24 07 19 22 14 08 24 31 18 20 16 06</p> <p>Construct a frequency distribution for these data and a relative frequency distribution. Use intervals of 5 burgers.</p> <p>(a) One of Universal Burger's goals is for at least 75% of shifts to have no more than 16 burgers wasted. Determine from the frequency distribution whether this goal has been achieved?</p> <p>(b) Find the percentage of shifts has waste of 21 or fewer burgers? Which distribution did you use to determine your answer?</p>	4	CO2
	B	<p>The Fish and Game station on Lake Wylie keeps records of fish caught on the lake and reports its finding to the National Fish and Game Service. The catch in pounds for the last 20 days was:</p> <p style="text-align: center;">101 132 145 144 130 88 156 188 169 130 90 140 130 139 99 100 208 192 165 216</p> <p>Calculate the range, variance, and standard deviation for these data. In this instance, is the range a good measure of the variability? Justify.</p>	6	CO2
2	A	Describe probabilities under condition of statistical dependence and independence. And compare them.	4	CO2
	B	Marcia Lerner will graduate in 3 months with a master's degree in business administration. Her school's placement office indicates that the probability of receiving a job offer as the result of any given on-campus interview is about 0.07 and is statistically independent from interview to interview.	6	CO2

		<p>(a) Find the probability that Marcia will not get a job offer in any of her next three interviews?</p> <p>(b) If she has three interviews per month, find the probability that she will have at least one job offer by the time she finishes school?</p> <p>(c) Find the probability that in her next five interviews she will get job offers on the third and fifth interviews only?</p>		
3	A	<p>The U.S. Bureau of Printing and Engraving is responsible for printing this country's paper money. The BPE has an impressively small frequency of printing errors; only 0.5% of all bills are too flawed for circulation. Find the probability that out of a batch of 1,000 bills</p> <p>(a) None are too flawed for circulation?</p> <p>(b) Ten are too flawed for circulation?</p> <p>(c) Fifteen are too flawed for circulation?</p>	5	CO2
	B	<p>The City Bank of Durham has recently begun a new credit program. Customers meeting certain credit requirements can obtain a credit card accepted by participating area merchants that carries a discount. Past numbers show that 25% of all applicants for this card are rejected. Given that credit acceptance or rejection is a Bernoulli process, out of 15 applicants, find the probability that</p> <p>(a) Exactly four will be rejected?</p> <p>(b) Exactly eight?</p> <p>(c) Fewer than three?</p> <p>(d) More than five?</p>	5	CO2