

Code.No 43200

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
II.B.TECH - I SEMESTER REGULAR EXAMINATIONS NOVEMBER, 2009
PROBABILITY AND STATISTICS
(Common to CSE, IT, CSS)

Time: 3hours

Max.Marks:80

Answer any FIVE questions
All questions carry equal marks

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1. a) An event is known to be independent of the events B, $B \cup C$ and $B \cap C$. Show that it is also independent of C.
b) State and prove addition theorem on probability for any three events. [8+8]
2. a) A fair coin is tossed until a head or five tails occurs. Find the expected number E of tosses of the coin.
b) Find the mean and the variance of the uniform probability distribution given by $f(x) = \frac{1}{x}$ for $x=1,2,3,\dots,n$. [8+8]
3. a) 20% of its items produced from a factory are defective. Find the probability that
i) None is defective. ii) One is defective iii) $P(1 < X < 4)$
b) 500 articles were selected out of a batch containing 10,000 articles and 30 were found to be defective. How many defective articles would you reasonably have in the whole batch. [8+8]
4. Samples of size 2 are taken from the population 1, 2, 3, 4, 5, 6 with out replacement Find:
a) The mean of the population.
b) The standard deviation of the population.
c) Mean of the sampling distribution of means.
d) The standard deviation of the sampling distribution of means. [16]
5. a) Give the difference between point estimation and interval estimation?
b) Give the differences between interval estimation and Bayesian estimation. [8+8]
6. a) What is meant by level of significance?
b) Write a short note one type I error and Type II error. [8+8]
7. In a random sample of 1000 persons from town A, 400 are found to be consumers of wheat. In a sample of 800 from town B, 400 are found to be consumers of wheat. Do these data reveal a significant difference between town A and town B, so far as the proportion of wheat consumers is concerned? [16]
8. a) Discuss about KENDALL'S Notation?
b) Discuss about classification of queuing models. [8+8]
