



Name :

Total Marks = 18

Time : 30 min

Date: 23/10/2017

- Q1.** If A and B are two events such that $P(A) = \frac{1}{4}$, $P(B) = \frac{1}{2}$ and $(A \cap B) = \frac{1}{8}$, find $P(\text{not } A \text{ and not } B)$. 2
- Q2.** If events A and B are such that $P(A) = \frac{1}{2}$, $P(B) = \frac{7}{12}$ and $P(\text{not } A \text{ or not } B) = \frac{1}{4}$. 2
State whether A and B are independent?
- Q3.** In a hurdles race, a player has to cross 10 hurdles. The probability that he will clear each hurdle is $\frac{5}{6}$. What is the probability that he will knock down fewer than 2 hurdles? 2
- Q4.** Ten eggs are drawn successively, with replacement, from a lot containing 10% defective eggs. Find the probability that there is at least one defective eggs. 2
- Q5.** In a 20-question true-false examination suppose a student tosses a fair coin to determine his answer to each question. If the coin falls heads, he answer 'true'; if it falls tails, he answers 'false'. Find the probability that he answers at least 12 questions correctly. 2
- Q6.** From a lot of 30 bulbs which include 6 defectives, a sample of 4 bulbs is drawn at random with replacement. Find the probability distribution of the number of defective bulbs. 2
- Q7.** A die is thrown 20 times. Getting a number greater than 4 is considered a success. Find the mean and variance of the number of successes. 2
- Q8.** If two dice are rolled 12 times, obtain the mean and the variance of the distribution of successes, if getting a total greater than 4 is considered a success. 2
- Q9.** In a game, a man wins a rupee for a six and loses a rupee for any other number when a fair die is thrown. The man decided to throw a die thrice but to quite as and when he gets a six. Find the expected value of the amount he wins/loses. 2