

Seat  
No.

**B.Sc. (Semester - I) (New) (CBCS) Examination Oct/Nov-2019  
Statistics (Paper – II)**

**PROBABILITY AND PROBABILITY DISTRIBUTIONS - I**

Day &amp; Date: Friday, 15-11-2019

Max. Marks: 40

Time: 11:30 AM To 01:30 PM

**Instructions:** 1) All questions are compulsory.  
2) Figures to the right indicate full marks.

**Q.1 Select the correct alternatives from the following rewrite the sentence. 08**

- 1) An important property of distribution function  $F_x(x) = P(X \leq x)$  of discrete random variable X is
  - a)  $F_x(x)$  is an increasing function
  - b) A decreasing function
  - c)  $F_x(x)$  is a decreasing function
  - d)  $F_x(x)$  is a non-decreasing function
- 2) If A and B are two events defined o sample space  $\Omega$ , such that  $P(A) = 0.25$   $P(A|B) = 0.25$  and  $P(B|A)=0.5$  and  $P(B|A)$  then  $P(\bar{A}/\bar{B}) = \underline{\hspace{2cm}}$ .
  - a)  $\frac{2}{3}$
  - b)  $\frac{1}{3}$
  - c)  $\frac{1}{2}$
  - d)  $\frac{3}{4}$
- 3) Let  $A_1, A_2, A_3$  be three events such that  $P(A_i \cap A_j) = 0$  for  $i \neq j$  then  $P(A_1 \cup A_2 \cup A_3)$  is
  - a) Exactly equal to one
  - b) Exactly equal to  $P(A_1) + P(A_2) + P(A_3)$
  - c) less than  $P(A_1) + P(A_2) + P(A_3)$
  - d) None of these
- 4) A number is selected at random from the set of numbers {11,12,13.....99}. What is the probability that selected number contains the digit 9?
  - a)  $\frac{19}{89}$
  - b)  $\frac{18}{89}$
  - c)  $\frac{1}{10}$
  - d)  $\frac{11}{100}$
- 5) The probability of occurrence of all possible outcomes of a random experiment is always equal to \_\_\_\_\_.
  - a) 0
  - b) 1
  - c) 0.5
  - d) None of these
- 6) The p.m.f. of an r.v.X is given by  $P(x) = (ax+b)$  ;  $x = 0,1,2$  and  $a = 1/3$ . Then mode of X is
  - a) 0
  - b) 1
  - c) 2
  - d) None of these
- 7) If X be a discrete random variable with distribution function F(x) then which of the following is the false statements?
  - a) Value of F(x) lies between 0 and 1
  - b) F(x) is a non-decreasing function of x
  - c) Using F(x) mediann can be determined
  - d) None of these

