

BCA (H) Part-III (Old) Examination, 2021  
Paper Name: Mathematics-III      Paper Code: BCA-301  
Subject: Computer Application

F.M. – 40

Time: 2Hrs.

**A. Answer any *eight* questions**

8X5=40

- (1) If A and B be any two events connected to a random experiment, then prove that  $P(A+B) = P(A) + P(B) - P(AB)$
- (2) If there is a war every 15 years on the average, then find the probability that there will be no war in 25 years.
- (3) Write short note on Normal  $(m, \sigma)$  Distribution.
- (4) Define mean, variance, and standard deviation in statistics.
- (5) Two random variables X, Y have the least square regression lines with equations  $3x + 2y = 26$  and  $6x + y = 31$ . Find  $E(X)$ ,  $E(Y)$  and  $\rho(X, Y)$ .
- (6) 7 mathematics and 3 physics books are placed at random on a book shelf. Find the probability that none of the physics books are placed consecutively.
- (7) Write down the algorithm of Newton-Raphson method.
- (8) What is interpolation? Find  $f(14.3)$  for the function using Linear interpolation

x	5	10	15	20	25	30
$f(x)$	114.783	171.921	218.314	301.912	425.312	723.213

- (9) Write down the algorithm of Trapezoidal rule.
- (10) Write down the algorithm for Gauss Elimination Method.