



DCZ-161100010303

Seat No. _____

B. B. A. (Sem. III) (CBCS) (W.E.F. 2016) Examination

July – 2022

Business Statistics

Time : $2\frac{1}{2}$ Hours]

[Total Marks : 70

Instructions : (i) All questions carry equal marks.
(ii) Attempt any five questions.

- 1 Explain Karl Pearson's method with advantages and limitations. 14
- 2 The ranks in Statistics and Mathematics of 10 students are given in brackets. Find the rank correlation coefficient. 14
 $(1,5), (2,1), (5,6), (6,4), (8,10), (9,7), (3,2), (10,9), (7,8), (4,3)$
- 3 Differentiate Linear correlation and Linear Regression. 14
Five properties of Regression Coefficients.
- 4 From the following given data, obtain the two regression equations. Estimate the value of y when $x = 80$ and x when $y = 100$. Averages of x and y are 50 and 60 respectively. 14
$$\sum(x-40) = \sum(y-50) = 160, \sum xy = 48256,$$
$$\sum(x-45)^2 = 656, \sum(y-64)^2 = 1280$$
- 5 Prove Addition theorem of probability. Also, if A and B are two independent events then A' and B' are independent events. 14
- 6 A and B throw a coin alternatively till one of them gets a head and wins the game. If A starts the game, find their respective probability of winning. Assume that the game may continue indefinitely. 14

7 Give properties and importance of Normal distribution. 14

8 The probability distribution of random variable x is given below. 14

X	-2	-1	0	1	2
$P(x)$	0.15	0.30	0.30	0.15	0.10

Find :

(a) $E(x)$ (b) $E(3x+2)$

(c) $E(x^2)$ (d) $V(x)$

(e) $E(x+1)^2$ (f) $V(3x-1)$

(g) $V(4x)$

9 Fit a binomial distribution to the data where four coins are tossed for 320 times, find the expected frequencies. 14

10 (a) Give properties of binomial distribution. 7

(b) A box contains 4 white and 6 black balls. A person draws 2 balls at random and is given Rs. 14 for every white ball and Rs. 7 for every black ball. What is his expectation ? 7
