

D 92569

(Pages : 3)

Name.....

Reg. No.....

**THIRD SEMESTER B.B.A. DEGREE (SUPPLEMENTARY/IMPROVEMENT)
EXAMINATION, NOVEMBER 2015**

(UG—CCSS)

Complementary Course

BB IIC 03—QUANTITATIVE TECHNIQUES FOR BUSINESS MANAGEMENT

Time : Three Hours

Maximum : 30 Weightage

Answer all twelve questions.

I. (A) Fill in the blanks :

- 1 If $P(A) = 0.2$, then $P(A^c) =$ _____.
- 2 The mean of Binomial distribution $B(n, p)$ is _____.
- 3 Critical region is also known as _____.
- 4 If $\rho = \pm 1$, then the two regression lines are _____.

(B) Choose the correct answer :

- 5 For a Binomial distribution mean is _____.
(a) Greater than variance. (b) Less than variance.
(c) Equal to variance. (d) None of these.
- 6 The value of probability lies in between _____.
(a) $-\infty$ to $+\infty$. (b) $-\infty$ to 1.
(c) -1 to $+1$. (d) 0 to 1.
- 7 Correlation coefficient measures :
(a) Variability. (b) Location.
(c) Concentration (d) Relation.
- 8 Degrees of freedom for statistic χ^2 in case of 2×2 contingency table is :
(a) 3. (b) 4.
(c) 1. (d) 2.

(C) State whether True or False :

- 9 Rejecting H_0 when H_0 is true is called type II error.
- 10 The purpose of the regression is to study dependence between variables.

Turn over

- 11 For a Binomial distribution, when p is greater than 1, q should be less than 1.
 12 If the events A and B are mutually exclusive, then they cannot occur together.

(12 × ¼ = 3 weightage)

Short Answer Type Questions.

Answer all **nine** questions.

- II. 13 What are the axioms of probability ?
 14 Let A and B be events with $P(A) = 1/5$, $P(B) = 1/4$ and $P(A \cap B) = 1/10$. Find $P(A \cup B)$.
 15 Explain the two types of errors in testing of hypothesis.
 16 Find the Binomial distribution with mean 3 and variance 2.
 17 What is meant by perfect correlation ?
 18 Comment on the following :
 "For a Poisson distribution, mean = 10, variance = 6".
 19 Distinguish between large sample and small sample tests.
 20 What are the uses of F-test ?
 21 Write short notes on classification of quantitative techniques.

(9 × 1 = 9 weightage)

Short Essay or Paragraph Questions.

Answer any **five** questions from seven.

- 22 Explain the procedure of testing independence of two attributes.
 23 Define Normal distribution. Describe its properties.
 24 The prices of shares of a company on the different days in a month were found to be 66, 65, 69, 70, 69, 71, 70, 63, 64, 68. Discuss whether mean price of the shares in the month is 65.
 25 Fit a Binomial distribution to the following data :—
- | | | | | | | | |
|-----|---|---|----|----|----|---|---|
| x | : | 0 | 1 | 2 | 3 | 4 | 5 |
| f | : | 6 | 20 | 28 | 12 | 8 | 6 |
- 26 From the following information on values of two variables X and Y, find the Regression line of y on x.

$$n = 17, \sum x = 544, \sum y = 244, \sum x^2 = 19040, \sum y^2 = 3773, \sum xy = 8413.$$

27 Calculate the coefficient of correlation :

x :	7	8	9	6	5
f :	8	6	7	9	10

28 Write short notes on : (i) Mutually exclusive events and ; (ii) Conditional probability.

(5 × 2 = 10 weightage)

Essay Questions.

Answer any two questions.

29 Two researchers adopted different sampling techniques while investigating the same group of students to find the number of students falling in different intelligence levels. The results are as follows :

Researcher	No. of students in each level				Total
	Below Average	Average	Above Average	Genius	
X	86	60	44	10	200
Y	40	33	25	2	100
Total	126	93	69	12	300

Using χ^2 test, would you say that the sampling techniques adopted by the two researchers are significantly different ?

30 Ten competitors in a musical test were ranked by three judges A, B and C in the following order :-

Ranks by A : 1 6 5 10 3 2 4 9 7 8

Ranks by B : 3 5 8 4 7 10 2 1 6 9

Ranks by C : 6 4 9 8 1 2 3 10 5 7

Use rank correlation coefficient to determine which pair of judges has the nearest approach to common likings in music.

31 A company has 2 plants they manufacture scooters. Plant I manufacture 80% of the scooters and plant II manufactures 20%. At plant I 85 out of 100 scooters are rated standard quality. At plant II only 65 out of 100 scooters are rated standard quality. What is the probability that the scooter selected at random came from plant I if it is known that the scooter is of standard quality ?

(2 × 4 = 8 weightage)