



M.Com. (Semester – I) Examination, November 2012
CO102 : BUSINESS STATISTICS

Duration : 2 Hours

Max. Marks : 50

- Instructions :** 1) Answer **all** the questions.
 2) Figures to the **right** indicate **full** marks.
 3) Tables to be provided **wherever** required.

1. Answer the following questions : (2x5=10)
- i) State the methods of collection of primary data.
 - ii) State the methods of determining simple correlation.
 - iii) Differentiate between Type I and Type II errors.
 - iv) If the probability of defective bolts is 0.1, find the mean and S.D. for distribution of defective bolts in a total of 500.
 - v) What are the uses of Chi-square test ?

2. X) A survey was conducted to study the relationship between expenditure on accommodation and expenditure on food and entertainment and the following results were obtained :

	Mean	S.D.
Expenditure on Accommodation	Rs. 173	Rs. 63.15
Expenditure on Food and Entertainment	Rs. 47.8	Rs. 22.98

Coefficient of correlation is 0.57

Find two regression equations and estimate the expenditure on food and entertainment, if the expenditure on accommodation is Rs. 200.

OR

High demand	250	300
Medium demand	200	300
Low demand	150	300



Y) The following table relates to the tourist arrival (in millions) during 2001 to 2007.

Years	2001	2002	2003	2004	2005	2006	2007
Tourist arrival (In millions)	18	20	23	25	24	28	30

Fit a straight line trend by the method of least squares and estimate the number of tourists that would arrive in the year 2011.

3. X) One bag contains 8 white and 4 black balls. Another contains 6 white and 10 black balls. If one ball is drawn from each bag, find probability that : 10
- Both are white
 - Both are black, and
 - One is white and one is black.

OR

- Y) a) What do you mean by conditional probability ? Explain it with the help of example.
b) Explain the term binomial distribution. What are its assumptions ?

4. X) Differentiate between Sample and Census method. Discuss in detail how sample method is superior to census method. 10

OR

- Y) The manufacturer of a certain make of electric bulbs claims that his bulbs have a mean life of 25 months with a standard deviation of 5 months. A random sample of 6 such bulbs gave following values.

Life of months : 24, 26, 30, 20, 20, 18

Can you regard the producer's claim to be valid at 1% level of significance ?
(Given that the table values at the said level are 4.032, 3.707 and 3.499 for 5, 6 and 7 degrees of freedom respectively)

5. X) Define SQC and discuss different types of control charts for variables. 10

OR

- Y) Given the following payoff of a factory owner :

State of Nature	Payoff (ACTS)			Probability
	Do not expand	Expand 200 units	Expand 400 units	
High demand	300	500	600	0.5
Medium demand	250	300	500	0.3
Low demand	200	-100	-300	0.2

Obtain the optimal strategy by using

- a) EMV criterion and b) EOL criterion.