LINA -III (2006 Course) : SUMMER - 2016

Subject : Business Statistics-II

Day : Thursday
Date : 02/06/2016

S.D.E. 30085

Time : 10.00 AM TO 1.00 PM
Max Marks : 80 Total Pages : 2

N.B.:

1) Attempt any **FIVE** questions from Section – I. Each question carries **10** marks.
2) Attempt any **TWO** questions from Section – II. Each question carries **15** marks.
3) Answers to both the sections should be written in **SAME** answer book.
4) Use of Non-Programmable scientific **CALCULATOR** is allowed.
5) Statistical Tables will be provided if necessary.

SECTION-I

Q.1 **a)** Define the term correlation. Explain the different types of correlation. **(05)**

b) A problem in statistics is given to three students Rishi, Ram and Shyam. Their chances of solving it are 0.2, 0.3 and 0.4 respectively. What is the probability that problem will be solved? **(05)**

Q.2 Two regression lines are given by **(10)**

$$8x - 10y + 66 = 0 \text{ and } 40x - 18y = 21.$$

Find i) Mean values of X and Y
ii) Regression coefficients
iii) Correlation coefficient

Q.3 A company has two plants to manufacture scooters. Plant I manufactures 65 % of the output and plant II the remaining. At plant I, 92% of the scooters are of standard quality white at plant II, 85% are of standard quality. If a scooter is picked up at random and found to be defective, find the probability that it came from plant II. **(10)**

Q.4 In a particular locality on an average 30% of the people are employed in banks. If 10 persons are selected at random find the probability that: **(10)**
i) exactly two are bankers
ii) not more than two are bankers

Q.5 For the following data: **(10)**

X	215	220	225	300	350	400	320	375	450	375
Y	379	385	350	255	250	220	260	235	150	270

Compute:
i) Karl person's coefficient of correlation
ii) Find regression line Y on X and estimate y when x = 500.

P. T. O.

Q.6 Fit a straight line for the following data: **(10)**

Year	2008	2009	2010	2011	2012	2013	2014
Sales (in crores)	16	19	25	42	84	100	150

Estimate the sales for the year 2015.

Q.7 Write short notes on any **TWO** of the following: **(10)**

a) Type I and Type II errors

b) Components of time series

c) Regression Analysis

SECTION-II

Q.8 The waiting time of customers at a bank is normally distributed with mean 5 minutes and standard deviation of 0.8 minutes. Find the probability that a customer has to wait for: **(15)**

i) less than 6 minutes
ii) more than 4 minutes
iii) between 4 minutes to 6 minutes

Q.9 A sample of persons infected with a particular disease was selected to test the effectiveness of a particular drug in curing the diseases. **(15)**

	Given the drug	Not given the drug
Cured	65	55
Not cured	35	45

Test using chi-square whether drug is effective in curing the disease.

Q.10 Calculate the Yule's coefficient of association for the following data and interpret it: **(15)**

	Graduates	Non-Graduates
Employed	900	100
Unemployed	300	700

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