

B.B.A. SEM – III (2015 CBCS COURSE) : WINTER - 2017

SUBJECT: BUSINESS STATISTICS-II

Day: Monday
Date: 20/11/2017

W-2017-1528

Time: 02.00 PM TO 05.00 PM
Max. Marks: 100

N.B:

- 1) Attempt **ANY FOUR** questions from Section-I and **ANY TWO** questions from Section-II.
- 2) Figures to the right indicate **FULL** marks.
- 3) Answers to both the sections should be written in **SEPARATE** answer book.
- 4) Use of Non-programmable **CALCULATOR** is allowed.

SECTION-I

Q.1 Explain in detail different criteria for decision making. **(15)**

Q.2 a) The odds that A speaks the truth is 3:2 and the odds that B speaks the truth is 5:3. In what percentage of cases are they likely to contradict each other on an identical point? **(07)**

b) Given the following data: **(08)**

	Adv.Exp. (X) (Rs.Lakhs)	Sales (Y) (Rs. Lakhs)
Arithmetic Mean	10	90
Standard Deviation	3	12
Correlation Coefficient	0.8	

Find the likely sales when advertisement budget is Rs. 15 lakhs.

Q.3 What does it mean by an attribute?
In a sample of 500 children, 200 came from higher income group and remaining from lower income group. The number of delinquent children in these groups respectively was 25 and 100. **(15)**
Calculate Coefficient of Association between delinquency and income group. Interpret the result.

Q.4 Define correlation in bivariate data. Also find the coefficient of determination between the sales and expenses from the data given below: **(15)**

Firm	1	2	3	4	5	6	7	8	9
Sales (Rs. Lakhs)	50	55	60	65	65	60	62	50	67
Expenses (Rs. Lakhs)	11	14	16	16	15	13	12	17	13

Q.5 a) Eight coins are tossed simultaneously. Find the probability of obtaining **(07)**
i) at most 3 heads ii) Exactly 4 tails

b) What is the probability that a leap year selected randomly will contain 53 Sundays. **(08)**

Q.6 How Bayes' theorem is applied in probability? Three machines A, B and C produce respectively 50%, 30% and 20 % of the total number of items of a factory. The percentage of defective outputs of these machines are respectively 3%, 4% and 5%. If an item is selected randomly, what is the probability that it is defective? **(15)**

P.T.O.

Q.7 Write short notes on **ANY THREE** of the following: **(15)**

- a) Scatter diagrams
- b) Association of attributes
- c) Coefficient of determination
- d) Types of events
- e) Binomial distribution and its real life applications

SECTION-II

Q.8 What are the applications of Correlation? Also compute the rank coefficient of Correlation using the following data. Hence interpret the result. **(20)**

X	12	17	18	19	27	25	27	12	17	16
Y	30	36	35	41	43	33	37	29	34	36

Q.9 Assume that the test scores from a college admissions test are normally distributed with a mean of 450 and a standard deviation of 100. **(20)**

- i) What percentage of the people taking the test score are between 400 and 500.
- ii) Suppose someone received a score of 630. What percentage of people taking the test score better? What percentage score worse?
- iii) If a particular university will not admit any one scoring below 480, what percentage of the persons taking the test would be acceptable to the university?

Q.10 a) Compute the regression equations using the method of least squares. **(10)**
Hence estimate i) X given Y = 9 and ii) Y given X = 8

X	1	2	3	4	5
Y	2	5	3	8	7

b) A study showed that 65 percent of managers had some business education and 50 percent had some engineering education. Furthermore, 20 percent of the managers had some business education but no engineering education. What is the probability that the manager has some business education, given that he has some engineering education? **(10)**