

S.D.E.

M.B.A. SEM-I (2013 COURSE) : WINTER - 2017

SUBJECT : STATISTICAL TECHNIQUES

Day : Monday  
Date : 18/12/2017

Time : 10.00 A.M. TO 1.00 P.M.  
Max. Marks : 70

**W-2017-4185**

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N. B. ;

- 1) Attempt **ANY THREE** questions from Section – I and attempt **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 books.
  - 4) Use of non-programmable calculator is **ALLOWED**.
  - 5) Graph papers will be provided if necessary.
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**SECTION - I**

- Q. 1** Explain the term ‘Statistics’. Discuss its importance in Business Management Domain. (14)
- Q. 2** What do you understand by coefficient of variation? What purpose does it serve? (14)
- Q. 3** “Decision criteria under situation of uncertainty is governed by the attitude of the decision maker”. Explain. (14)
- Q. 4** The ranks of the same 15 students in two subjects A and B are given below: (14)  
The two numbers within the brackets denoting the ranks of the same student in A and B respectively:  
(1, 10), (2, 7), (3, 2), (4, 6), (5, 4), (6, 8), (7, 3), (8, 1), (9, 11), (10, 15),  
(11, 9), (12, 5), (13, 14), (14, 12), (15, 13).  
Use Spearman’s formula to find the Rank Correlation Coefficient.
- Q. 5** Write short notes on **ANY TWO** of the following: (14)
- a) Least Square Method
  - b) Basic Rules of Probability
  - c) Scatter Diagrams
  - d) Cumulative Frequency Curves

P. T. O.

**SECTION - II**

- Q. 6** The data about the sales and advertisement expenditure of a firm is given below: **(14)**

	<b>Sales</b>	<b>Advertisement Expenditure</b>
	(In crores of Rs.)	(In crores of Rs.)
Means	40	6
Standard deviations	10	1.5

Coefficient of correlation =  $r = 0.9$

- i) Estimate the likely sales for a proposed advertisement expenditure of Rs. 10 crores.
- ii) What should be the advertisement expenditure if the firm proposes a sales target of 60 crores of rupees?
- Q. 7** The frequency distribution of weight in grams of mangoes of a given variety is given below: **(14)**  
Calculate the arithmetic mean and the median:

Weight in grams	410-419	420-429	430-439	440-449	450-459	460-469	470-479
No. of Mangoes	14	20	42	54	45	18	7

- Q. 8** In a bolt factory, machines A, B, C manufacture respectively 25 %, 35 % and 40% of the total. Of their output 5 %, 4 %, 2 % are known to be defective bolts. A bolt is drawn at random from the product and is found to be defective. What are the probabilities that it was manufactured by:
- i) Machine A
- ii) Machine B or C

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