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MS-008

**MANAGEMENT PROGRAMME****Term-End Examination, 2019****MS-008 : QUANTITATIVE ANALYSIS FOR  
MANAGERIAL APPLICATIONS****Time : 3 Hours]****[Maximum Marks : 100****(Weightage 70%)**

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**Note :** Section-A has six questions, each carrying 15 marks. Attempt **any four** questions from this section. Section-B is **compulsory** and carries 40 marks. Attempt both questions. Use of calculator is permitted.

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**SECTION - A**

1. Explain what is meant by descriptive statistics and inferential statistics. Define the types of variables used in statistics and comment on their usage in descriptive and inferential statistics.
2. On 1st Jan. every year, a person buys NSC's (National Saving Certificates) of value exceeding that of his last year's purchase by Rs. 100/- After 10 years, he finds that the total purchase value of the certificates held by him is Rs. 54,500/- Find the value of the certificates

purchased by him : (a) In the first year (b) In the eighth year.

3. For a set of 1000 observations known to be normally distributed, the mean is 534cm and SD is 13.5cm. How many observations are likely to exceed 561 ? How many will be between 520.5 and 547.5 cm ?

$$\text{(Given } P(0 \leq \frac{\text{Variable used}}{\text{used}} \leq 1) = 0.3413,$$

$$P(0 \leq \frac{\text{Variable used}}{\text{used}} \leq 2) = 0.4772$$

4. What do you mean by a Statistical Hypothesis ? Explain characteristics of a good hypothesis. Elaborate the concept of the significance level and the p value of a test.
5. After a natural disaster, a company could partially recover the following records on analysis of correlation :

Variance of  $x = 9$

Regression equations :

$$8x - 10y + 66 = 0$$

$$40x - 18y = 214$$

What was :

- (a) the correlation coefficient between x and y ?
- (b) the standard deviation of y ?

6. Write short notes on **any three** of the following :

- (a) Algebraic and Transcendental functions
- (b) Quartile deviation
- (c) Non-probability sampling methods
- (d) Maximin criteria of Decision-making
- (e) Least square criteria

### SECTION-B

7. A preliminary sample of 100 labourers was selected from a population of 5000 labourers by simple random sampling. It was found that 40 of the selected labourers opt for a new incentive scheme. How large a sample must be selected to have a precision of  $\pm 5\%$  with 95% confidence ?
8. The marks conversion of grades of 8 candidates in MS-08 and MS-95 are given below :

MS-95	76	90	98	69	54	82	67	52
MS-08	25	37	56	12	7	36	23	11

Calculate the rank correlation coefficient.

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