

Register Number :

Name of the Candidate :

**6 6 1 7**

**M.B.A. DEGREE EXAMINATION, 2013**

**(HUMAN RESOURCE MANAGEMENT)**

**(FIRST YEAR)**

**(PAPER - VI)**

**160. BUSINESS MATHEMATICS  
AND STATISTICS**

*( Common with M.B.A.  
[ Marketing Management ] and  
Financial Management )*

May ] [ Time : 3 Hours

Maximum : 75 Marks

**SECTION – A (5 × 3 = 15)**

*Answer any FIVE questions.*

*ALL questions carry EQUAL marks.*

1. (a) Define random sampling.
- (b) Explain the terms 'population' and 'sample'.

**Turn Over**

2

- (c) Explain secondary data.
- (d) What is correlation?
- (e) Explain stratified sampling.
- (f) What is time series analysis?
- (g) What is sampling enquiry?
- (h) What is meant by sampling error?

**SECTION – B (3 × 10 = 30)**

*Answer any THREE questions.*

*ALL questions carry EQUAL marks.*

2. What is a seasonal variation? What steps are involved in calculating a seasonal index?
3. How would you isolate seasonal variation in time series?
4. The trend equation for annual sales of a product is  $Y = 102 + 36x$  with 1<sup>st</sup> January, 1990 as origin.
  - (a) Determine the monthly trend equation with 1<sup>st</sup> July, 1992, as origin.
  - (b) Compute the trend values of sales in August, 1991 and October, 1994.

5. Fit a straight line to following data by the method of least squares.

X	0	1	2	3	4
Y	1	1.8	3.3	4.5	6.3

6. Given that variance of  $x = 9$  and the regression equations are

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

$$40x - 18y = 214.$$

Solve the problem.

#### SECTION – C (1 × 15 = 15)

Answer any ONE question.

7. (a) Compare the meaning of  $r$  and  $r^2$

560

400

- (b) A relationship such as

$$r^2 = 1 - \frac{560}{400}$$

is not possible. Why?

**Turn Over**

8. Differentiate between the coefficient of determination and the coefficient of correlation.
9. Explain the concept of 'probable error'. What formula is used to calculate it? How is it useful in interpreting the value of  $r$ ?

#### SECTION – D (1 × 15 = 15)

(Compulsory)

10. Which of the following is an example of a continuous random variable?

- (a) The number of cars in a parking lot.
- (b) The weight of a bag of potatoes.
- (c) The number of repairs at a computer shop over the course of the week.
- (d) The total runs scored in a base ball game.