

**2017****M B A****1st Semester Examination****QUANTITATIVE TECHNIQUES****PAPER—MBA 103***Full Marks : 100**Time : 3 Hours*

*The figures in the right-hand margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

*Illustrate the answers wherever necessary.*

1. Answer any *eight* questions from the following : 8×5
- (a) Distinguish between 'r' and 'r<sup>2</sup>'.
  - (b) Explain briefly different types of correlation coefficient with the help of scatter diagram.
  - (c) Establish the relationship between correlation coefficient and regression coefficient.
  - (d)  $R^2 = 80$ . What is its implication in regression ?

*(Turn Over)*

- (e) Distinguish between primary data and secondary data.
- (f) Discuss different types of measurement scale in statistics.
- (g) Median age of MBA students of Vidyasagar University is 22 years. What it implies ?
- (h)  $y = 35 + 0.22x_1 - 0.10x_2 + 0.29x_3$

Interpret the results of constant value and regression coefficients.

- (i) CV of player A is 40% and CV of player B is 50%. Which player is more reliable ?
- (j) What are merits and demerits of central tendencies.
- (k) Find the sum of  $4+44+444+ \dots n$ .
- (l) What is standard deviation ? Mention the differences between standard deviation and absolute deviation.

2. Answer any *four* questions from the following :  $4 \times 10$

- (a) (i) The sum of  $n$  terms of an AP is  $3n^2 + 5n$ . Find which term of the AP is 152.
- (ii) There are 7 men and 3 ladies. Find the number of ways in which a committee of 6 persons can be formed if the committee is to have at least 2 ladies.

- (b) The grades of  $q$  students at the college test ( $x$ ) and the University examination ( $y$ ) are as follows :

$x$  : 77 50 71 72 81 94 96 99 67

$y$  : 82 66 78 84 47 85 99 99 68

Find a linear regression equation for the data and then estimate the grade of the university examination for a student who received 85 in the college test but was sick at the time of University examination.

- (c) For a bivariate data the mean value of  $x$  is 20 and the mean value of  $y$  is 45. The regression coefficient of  $Y$  and  $X$  is 4 and that of  $X$  on  $Y$  is  $1/9$ . Find

(i) the coefficient of correlation,

(ii) the standard deviation of  $X$  if the standard deviation of  $Y$  is 12. 5+5

- (d) Calculate the changes in the cost of living figures for 2013 as compared to 2010 :

Items	Food	Rent	Clothing	Fuel	Miscellaneous
Prices (2010) Rs.	250	60	80	50	200
Prices (2013) Rs.	270	80	100	50	250
Percentage expenditure	35	20	15	10	20

It is decided by the management of a firm to increase DA of the workers. Who were drawing wages Rs. 7000/ month in 2010. How much DA should be given to each

of them on account of change in CWI for the year 2013 ?

- (e) Compute Fisher's ideal index and verify that it satisfies the factor reversal test with the help of the following data :

Commodity	Base price	Box value	Current price	Current value
A	40	2000	100	4000
B	30	300	80	640
C	40	200	40	320

- (f) What is Mode ? State its relationship with mean and median.

The number of defects found in 10 different samples of a finished product are 12, 9, 5, 15, 8, 9, 12, 17, 12 and 10. Find the mode of the number of defects found in the samples.

The frequency distribution of the number of defects is shown in following table :

Distribution of number of defects

No. of defects	5	8	9	10	12	15	17
No. of samples	1	1	2	1	3	1	1

2+2+6

**[ Internal Assessment : 20 Marks ]**