Seat No.: _____ **Enrolment No.:_____**

GUJARAT TECHNOLOGICAL UNIVERSITY

MBA - SEMESTER - I – EXAMINATION – SUMMER 2016

Subject Code : 810007 **Date : 21/05/2016**

Subject Name: Quantitative Analysis (QA)

Time : 10.30 am to 01.30 pm **Total Marks : 70**

Instructions :

1. **Attempt all questions.**
2. **Make suitable assumption wherever necessary.**
3. **Figure to the right indicate full marks.**

Q.1. (a) Define Statistics and give the Functions and Importance of Statistics. 07

(b) Two dice (Pasaa) are thrown simultaneously, represent the sample space. What is a probability of getting a total score less than 11. 07

Q.2. (a) Explain in brief the types of sampling and advantages and disadvantages of sampling. (only two points) 07

(b) The mean and variance of a binomial distribution are 15 and 6 respectively. Find the value of n and p. 07

OR

(b) For a poisson variate P (1) = P (2) Find the value of P (0) 07

Q.3. (a) Define the hypothesis. What is null hypothesis and alternate hypothesis? Explain with an example. 07

(b) The following yields are obtaining by using three fertilizers in different plots. 07

Fertilizer	Yield			
A	1	4	3	3
B	6	5	4	2
C	7	3	5	6

Test the hypothesis that there is no significance difference between the fertilizer.

OR

(a) Explain the ANOVA (Analysis of variance – one way) technique. 07

(b) To access the significance of possible variation in performance in a certain test between the English schools of a city, a common test was given to a number of 5 students taken at random from the senior fifth class of each of the four schools concerned. The results are given below. Make an analysis of Variance of data. (Given that $F_{0.05}$ for $v_1 = 3$, $v_2 = 16$ is 3.24, at 5% level of significance). 07

Schools	Marks of the Students				
A	8	10	12	8	7
B	12	11	9	14	4
C	18	12	16	6	8
D	13	9	12	16	15

Q.4. (a) Explain the uses and limitations of Chi-square (χ^2) 07

(b) Find the multiple regression equation of X_1 on X_2 and X_3 from the data relating to three variation given below. 07

X_1	9	13	15	7	6	4
X_2	6	4	3	8	12	15
X_3	14	10	4	20	24	30

(Regression Equation of X_1 on X_2 and X_3 is
$X_1 = a_{1.23} + b_{12.3} X_2 + b_{13.2} X_3$)

OR

(a) What is a meaning of regression analysis ? Explain in detail. 07

(b) From the following data obtain two regression equation. 07

Y	39	41	33	45	50	37	48	36	31
Z	19	20	15	22	26	21	24	19	14

Q.5. (a) Write a note on index numbers. Briefly explain laspeyres and Paasche price indices. 07

(b) Find the seasonal variation by the methods of three yearly moving average. 07

Year	Price of commodity		
1993	120	140	145
1994	145	160	165
1995	160	168	172
1996	170	174	176

OR

(a) Explain the components of Time Series Analysis. 07

(b) Calculate laspeyre's and Paasche's index numbers from the following data. 07

Commodities	Base Year		Current year	
	Quantity (Kg)	Price (Rs.)	Quantity (Kg)	Price (Rs.)
A	12	10	15	12
B	15	7	20	5
C	24	5	20	9
D	5	15	5	14

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