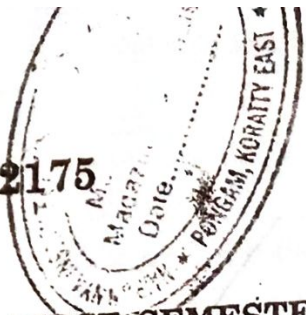


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Name.....

Reg. No.....

**FIRST SEMESTER M.B.A. DEGREE EXAMINATION, JANUARY 2012**

**Paper 1.5—QUANTITATIVE TECHNIQUES**

(2010 admissions)

Maximum Weightage : 36

Time : Three Hours

*Answer to all the parts.*

**Part A**

*Answer all the questions.*

*Each question carries 1 weightage.*

1. What is simple and compound events ?
2. What is conjoint analysis ?
3. What is two tailed tests of hypothesis ?
4. What are the methods used to measure cyclical variations ?
5. What is non-linear correlation ?
6. Write any *two* uses of regression analysis.

(6 × 1 = 6 weightage)

**Part B**

*Answer any six questions.*

*Each question carries 3 weightage.*

7. What are the utility of time series analysis ? Explain.
8. Write a note on relative frequency theory of probability.
9. Explain data analysis tools in SPSS.
10. Write a note on Waid-Wolfowitz test.
11. A and B play for a prize of Rs. 1,000. A is to throw a dice first and is to win if the throws 6. If he fails B is to throw and is to win if he throws 6 or 5. If he fails, A is to throw again and to win if he throws 6, 5, or 4 and so on. Find their respective expectations.
12. Eleven sales executive trainees are assigned selling jobs right after their recruitment. After a fortnight they are withdrawn from their field duties and given a month's training for executive sales. Sales executed by them in thousands of rupees before and after the training, in the same period are listed below :

Sales (before training) : 23 20 19 21 18 20 18 17 23 16 19

Sales (after training) : 24 19 21 18 20 22 20 20 23 20 27

Do these data indicate that the training has contributed to their performance ?

Turn over

13. Fit a straight line trend by the method of least square to the following data. Assuming that the same rate of change continues, what would be the predicted earning for the year 2012 ?

Year	: 2003	2004	2005	2006	2007	2008	2009	2010
Earnings (lakhs)	: 38	40	65	72	69	60	87	95

14. The distribution of typing mistakes committed by a typist is given below. Assuming a Poisson mode, find out the expected frequencies :

No. of mistakes/page	: 0	1	2	3	4	5
No. of pages	: 142	156	69	27	5	1

(6 × 3 = 18 weightage)

### Part C

Answer any two questions.  
Each question carries 6 weightage.

15. The following data relating to a manufacturing company. The company has purchased three new machines of different makes and wishes to determine whether one of them is faster than the others in producing a certain output five hourly production figures are observed at random from each machine and the results are given below :

Observations	$A_1$	$A_2$	$A_3$
1	25	31	24
2	30	39	30
3	36	38	28
4	38	42	25
5	31	35	28

Use analysis of variance and determine whether the machines are significantly different in their mean speed. (Given at 5% level  $F_{2,12} = 3.89$ ).

16. Find out the coefficient of correlation with the help of Karl Pearson's method :—

### Marks in Mathematics

	10	20	30	40	50
5	2	4	1	4	1
10	8	2	5	1	—
15	—	3	2	1	—
20	—	1	3	2	4
25	—	—	4	2	—

7. (a) Explain business applications of correlation and regression.  
(b) Conjoint analysis with SPSS.

(2 × 6 = 12 weightage)