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MCN-006

00701

MASTER OF BUSINESS ADMINISTRATION (FULL TIME PROGRAMME)

Term-End Examination

June, 2012

MCN-006 : QUANTITATIVE ANALYSIS FOR BUSINESS DECISIONS

Time : 3 hours *Maximum Marks : **100***

*Note : Attempt any **five** questions.*

*All questions carry **equal marks.***

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1. (a) Statistics play an important role not only in the study of Economics, but also in quantitative decision making. Explain briefly. **10**

(b) Discuss the utility and limitations of diagrammatical representation. **10**

2. (a) If $y = \sqrt{x + \sqrt{x + \sqrt{x + \ldots \text{ to } \infty}}}$ Prove that **10**

$$\frac{dy}{dx} = \frac{1}{2y-1}$$

(b) Give an example of a function which is **10**

(i) One-one but not onto

(ii) One-one and onto

(iii) Neither one-one and nor onto

(iv) Onto but not one-one

3. (a) The interior angle of a polygon are in arithmetic progression. The smallest angle is 120° and the common difference is 5°. Find the number of sides of the polygon. **10**

(b) 100 salesmen employed by a company, have booked the following number of orders for a newly introduced FAX Machine during the last six months. **10**

No. of order booked	10 -- 20	20 - 30	30 - 40	40 - 50	50 - 60	60 - 70	70 - 80
No. of Salesman	4	12	25	30	15	8	6

Calculate arithmetic mean and median of the above data and account for the difference, If any.

4. (a) Distinguish between : **10**
   (i) Quartile deviation and Standard deviation
   (ii) Variance and Coefficient of dispersion.

   (b) Discuss Karl Pearson's β and γ co-efficients and explain the terms : **10**
   (i) Platy kurtic
   (ii) Leptokurtic and
   (iii) Mesokurtic

5. (a) Two judges in a music competition rank the 12 entries as follows : **10**

x	1	2	3	4	5	6	7	8	9	10	11	12
y	12	9	6	10	3	5	4	7	8	2	11	1

What degrees of agreement is there between thejudgement of the two judges ?

   (b) Define the term regression and find the two lines of regression and co-efficient of correlation for the data given below : **10**
   $n = 18$, $\Sigma x = 12$, $\Sigma y = 18$, $\Sigma x^2 = 60$, $\Sigma y^2 = 96$, $\Sigma xy = 48$

6. (a) You need four eggs to make omelettes for breakfast. You find a dozen eggs in the refrigerator but do not realise that two of these are rotten. What is the probability that of the four eggs you choose at random **10**
   (i) none is rotten
   (ii) Exactly one is rotten

   (b) Define Binomial distribution and indicate its chief characteristics. Under what conditions the Binomial distribution tends to poisson distribution. **10**

7. (a) 100 students of a management institute obtained the following grades in Quantitative Technique paper. **10**

Grade :	A	B	C	D	E	Total
Frequency :	15	17	30	22	16	100

Using χ^2 test, Examine the hypothesis that the distribution of grades is uniform.

   (b) Write a short note on the following : **10**
   (i) Null hypothesis
   (ii) Testing of hypothesis
   (iii) Critical region and acceptance region

8. (a) Write the parameters of the following distributions : **10**
   (i) Normal distribution
   (ii) t - distribution
   (iii) F - distribution

   (b) Define the terms as used in probability : **10**
   (i) Mutually exclusive and independent events.
   (ii) Simple and compound events.