

**MASTER OF BUSINESS ADMINISTRATION
(MBAEV)**

Term-End Examination

00431

June, 2015

MCN-038 : QUANTITATIVE TECHNIQUES

Time : 3 hours

Maximum Marks : 100

Note : Attempt any *five* questions. All questions carry equal marks.

1. How are Arithmetic Mean, Geometric Mean and Harmonic Mean related to each other ? Why is Arithmetic Mean greater than the Geometric Mean and Geometric Mean greater than the Harmonic Mean ? Explain with the help of a suitable example. 20

2. Below are the measurements of characteristics for two samples of interest. For each characteristic, calculate the following : 4×5=20
 - (a) Mean
 - (b) Variance
 - (c) Standard deviation
 - (d) Frequency plot

DATA :	
MALE HEIGHTS (inches)	LENGTH OF INDEX FINGER (inches)
66	3·0
68	3·5
69	3·4
68	3·5
71	3·7
73	3·2
67	3·5
68	3·4
65	3·1
72	3·5

3. Five employees of a company are to be assigned to five jobs which can be done by any of them. Because of different number of years with the firm, the workers get different wages per hour. These are ₹ 5 per hour for A, B and C each, and ₹ 3 per hour for D and E each. The amount of time taken by each employee to do a job is given in the following table. Determine the assignment

pattern that (a) minimizes the total time taken, and (b) minimizes the total cost, of getting five units of work done.

20

Employee					
Job	A	B	C	D	E
1	7	9	3	3	2
2	6	1	6	6	5
3	3	4	9	10	7
4	1	5	2	2	4
5	6	6	9	4	2

4. A pharmaceutical company produces a compound which must be sold within the month it is produced, if the normal price of ₹ 100 per bottle is to be obtained. Anything unsold in that month is sold in a different market for ₹ 20 per bottle.

During the last three years, the monthly demand was recorded which showed the following frequencies :

Monthly demand (No. of bottles) :	2,000	3,000	6,000
Frequency (No. of months) :	8	16	12

- (a) Prepare an appropriate pay-off table.
- (b) Advise the production management on the number of bottles that should be produced next month.

20

5. Distinguish between any *two* of the following : 10+10
- (a) Exclusive and Inclusive Series
 - (b) Absolute Measure and Relative Measure
 - (c) Continuous and Discrete Series
6. (a) What is 'Statistical Sampling' ? Describe the various methods of statistical sampling.
- (b) Write a note on the Editing of Primary Data and Secondary Data for the purpose of Analysis and Interpretation. 10+10
7. Briefly comment on any *two* of the following : 10+10
- (a) A population is the set of all items or individuals of interest.
 - (b) An index number is an economic data figure reflecting price or quantity compared with a standard or base value.
 - (c) Dependence refers to any statistical relationship between two random variables or two sets of data.
8. Write short notes on any *two* of the following : 10+10
- (a) Semi-Interquartile Range
 - (b) Coefficient of Standard Deviation
 - (c) Individual Series
-