

MANAGEMENT PROGRAMME**Term-End Examination****June, 2011****MS-8 : QUANTITATIVE ANALYSIS FOR
MANAGERIAL APPLICATIONS***Time : 3 hours**Maximum Marks : 100**(Weightage 70%)*

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- Note :** (i) *Section - A has six questions, each carrying 15 marks. Attempt any four questions from this section.*
- (ii) *Section - B is compulsory and carries 40 marks. Attempt both questions.*
- (iii) *Statistical tables may be supplied on request.*
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SECTION - A

1. You are given the frequency distribution of 292 workers of a factory according to their average weekly income. Calculate quartile deviation and its coefficient from the following data :

Weekly Income (Rs.)	No. of workers
Below 1350	8
1350 - 1370	16
1370 - 1390	39
1390 - 1410	58
1410 - 1430	60
1430 - 1450	40
1450 - 1470	22
1470 - 1490	15
1490 - 1510	15
1510 - 1530	9
1530 and above	10

2. The Herr- McFee Company, which produces nuclear fuel rods, must X-ray and inspect each rod before shipping. Karen Wood, an inspector, has noted that for every, 1,000 fuel rods she inspects, 10 have interior flaws, 8 have casing flaws, and 5 have both flaws. In her quarterly report, Karen must include the probability of flaws in fuel rods. What is the probability ?
3. The manager of a small postal substation is trying to quantify the variation in the weekly demand for mailing tubes. She has decided to assume that this demand is normally distributed. She knows that on average 100 tubes are purchased weekly and that 90 percent of the time, weekly demand is below 115. What is the standard deviation of this distribution ?
4. The mean length of life of a certain cutting tool is 41.5 hours with a standard deviation of 2.5 hours. What is the probability that a simple random sample of size 50 drawn from this population will have a mean between 40.5 hours and 42 hours ?
5. Before an increase in excise duty on tea, 400 people out of a sample of 500 people were found to be tea drinkers. After an increase in duty, 400 people were tea drinkers in a sample of 600 people. State, whether there is a significant decrease in the consumption of tea. You may use a 5% level of significance.

6. Write short notes on *any three* of the following :-
- (a) Central Limit Theorem
 - (b) Stratified Sampling
 - (c) Less than type Ogive
 - (d) Level of significance
 - (e) Coefficient of variation

SECTION - B

7. Below are given the figures of production (in m. tonnes) of a sugar factory :

Year	2002	2003	2004	2005	2006	2007	2008
Production (in m. tonnes)	80	90	92	83	94	99	92

Estimate a linear trend equation and use it to forecast the production for 2009

8. The demand equation faced by DuMont Electronics for its personal computers is given by $P = 10,000 - 4Q$, where $P =$ price per unit and $Q =$ quantity demanded.
- (a) Write the marginal revenue equation.
 - (b) At what price and quantity will marginal revenue be zero ?
 - (c) At what price and quantity will total revenue be maximized ?
 - (d) Find the price elasticity of demand at $P = 6,000$.
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