CHANDVAD -III : SUMMER - 2016

Subject : Management Science and Decision Technology

Day : Tuesday
Date : 07/06/2016

S.D.E. 30353

Time : 10.00 A.M. TO 01.00 P.M.
Max Marks : 70 Total Pages : 1

N.B.

1) Attempt any **FOUR** questions from Section – I and any **TWO** questions from Section –II.
2) Figures to the right indicate **FULL** marks.
3) Answers to both the sections should be written in **SAME** answer book.
4) Use of non-programmable calculator is allowed.

SECTION -I

Q.1 What is Linear Programming? State the assumptions of Linear Programming and its applications in industries. **(10)**

Q.2 Describe Decision Theory with relevant examples. **(10)**

Q.3 What is Operations Research? Explain the Historical development of Operations Research in detail. **(10)**

Q.4 Define Management Science and explain evolution of management thoughts in detail. **(10)**

Q.5 Write short notes on any **TWO:** **(10)**

a) Transportation Problem
b) Correlation Analysis
c) Management Science Techniques
d) Assignment Problem

SECTION -II

Q.6 What type of measures will you use for comparison of dispersion in different distributions? Explain any two of such measures. **(15)**

Q.7 Arrivals at a telephone booth are considered to be Poisson, with an average time of 10 minutes between one arrival and the next. The length of a phone call assumed to be distributed exponentially with mean 3 minutes. Then, **(15)**

a) What is the probability that a person arriving at the booth will have to wait?
b) What is the average length of the queues that form from time to time?
c) The telephone department will install a second booth when convinced that an arrival would expect to have to wait at least three minutes for the phone. By how much must the flow of arrivals be increased in order to justify a second booth?

Q.8 In the first year MBA class of a certain college, the first lecture starts at 9 a.m. Following is the probability distribution regarding number of students who are late comers for the first lecture each day. **(15)**

No. of students coming late	05	10	15	20	25
Probability	0.35	0.30	0.20	0.10	0.05

Using the following sequence of random numbers, simulate the pattern for next 12 days and find average number of students coming late per day.

Random Numbers	95	23	12	65	95	61	86	02	92	45	44	48

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