

**Subject : Decision Technologies**

Day : Friday  
Date : 16/12/2016



Time : 10.00 A.M. TO 1.00 P.M.  
Max Marks : 80 Total Pages : 2

**N.B.:**

- 1) Attempt any **FIVE** 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** Compute median and variance from the following data: **(10)**

Marks	10-19	20-29	30-39	40-49	50-59	60-69
No. of Students	10	17	19	25	20	18

**Q.2** Use bisection method and find the real root of the following equation (perform three iterations). **(10)**  
 $x^3 - 4x - 9 = 0$

**Q.3** Solve the following LPP by using graphical method: **(10)**  
 Maximize  $Z = x_1 + 3x_2$   
 Subject to  
 $3x_1 + 6x_2 \leq 8;$   
 $5x_1 + 2x_2 \leq 10;$   
 such that  $x_1, x_2 \geq 0.$

**Q.4** Solve the following Assignment Problem by using Hungarian method for minimization of costs. **(10)**

Jobs \ Machines	P	Q	R	S
A	31	25	33	29
B	25	24	23	21
C	19	21	23	24
D	38	36	34	40

**Q.5** Forecast the demand for an item for the year 2013 from the following data: **(10)**

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Demand in (Rs. '000')	21	29	39	35	40	60	70	75	80

**Q.6** Differentiate between PERT and CPM. **(10)**

**P. T. O**