Total No. of Questions :8]   *[Total No. of Printed Pages :2*

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MVCT/MBCT/MVCP-101(New)

M.E./M.Tech. I Semester

Examination, June 2017

Advance Mathematics

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
   ii) All questions carry equal marks.

1. Solve the following transportation.

Warehouses

		W_1	W_2	W_3	W_4	Supply
	F_1	21	16	25	13	11
Origins	F_2	17	18	14	23	13
	F_3	32	27	18	41	19
Demand		6	10	12	15	

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2. Solve the following assignment problem and find optional solution:

Task

Employee	1	2	3	4
1	5	8	8	6
2	4	6	5	8
3	6	10	7	4
4	9	9	7	3

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3. Explain (M/M/1) : (N / FCFS) model.

4. Discuss various steps involved in the application of PERT and CPM.
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5. What is game in game theory and explain the two person zero sum game giving a suitable example.

6. Determine the value of u_1, u_2 and u_3 so as to
maximize $z = u_1.u_2.u_3$
Subject to the constraint
$$u_1 + u_2 + u_3 = 10$$
and $u_1, u_2, u_3 \geq 0$

7. Ten objects are choosen at random from a population and their heights are found to be in inches 63, 63, 64, 65, 66, 69, 69, 70, 71. Discuss the suggestion that the mean height in the universe is 65 inches, given that for 9d of the value of t and 5% level of significance is 2.262.

8. What is Reliability? And also the failure rate of a certain component is $h(t) = \lambda_0 t$, where $\lambda_0 > 0$ is a given constant. Determine the Reliability. R(t) of the component. Repeat for
$h(t) = \lambda_0 t^{1/2}$.
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