Total No. of Questions : 8] SEAT No. :

P4135 [Total No. of Pages : 3

[4860]-341

M.E. (Computer Engineering)

NETWORK DESIGN ,MODELLING AND ANALYSIS

(2008 Pattern) (Semester - II)

Time : 3 Hours] *[Max. Marks : 100*

Instructions to the candidates:

1) ***Any three questions from each section.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data,if necessary.***

SECTION - I

Q1) a) Differentiate poisson and deterministic behaviour with suitable example? **[8]**

b) Explain different charactristics considered for building a network topology. **[8]**

Q2) Describe following with respect to network intensive applications(Any Two) **[16]**

a) Shared Memory Network Access

b) Latency Issues

c) Probability Distribution Function.

Q3) Write a short note on : **[18]**

a) Little's Theorem.

b) Blocking Probability.

c) Anaysis of M/G/1 queue on vacation

Q4) a) a) Consider an M/M/1 system in which customers arrive according to a Poisson process of rate λ. Service rate is $\mu = 20$ customers/minute. The average number of customers is N=3. Calculate λ and W. **[8]**

b) We want to draw random samples of two gaskets from a box containing 20 gaskets, three of which are defective. Find the probability function of random variable X = Number of defectives in the sample. **[8]**

P.T.O.

SECTION - II

Q5) a) Analyze performance of PSN network. **[6]**

b) Solve Terminal Assignment problem for given data. **[10]**

Weight of node = 01

Max, capacity of concentrator = 03

	G	H	I	K
a	8	8	2	5
b	9	3	7	2
c	2	11	3	1
d	10	6	7	2
e	4	4	6	0
f	2	3	3	12

Q6) a) Describe different tools for BW management and security Management. **[8]**

b) Solve Center of Mass Algorithm for the given input. **[8]**

Node	x	y	wt.
1	32	25	1
2	54	56	1
3	48	49	1
4	75	48	1
5	65	21	1
6	85	26	1

Q7) a) Explain different factors to ensure Quality of Service. **[8]**

b) Differentiate between Open Queing and Closed Queing. **[8]**

Q8) Write a short note on (Any Three) **[18]**

a) Network Planning and Implementation.

b) Performance Analysis of Network Layer.

c) Multipoint Line Layout Heuristics.

d) Bin Packing Algorithm.