Total No. of Questions : 8]

SEAT No. :

P4897

[Total No. of Pages : 2

[5155]-23
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) Explain in detail Poisson Random Variable with its suitable example? **[8]**

b) Exlpain Memory less property of Exponential Variable. **[8]**

Q2) Describe following network data Models (any two) **[16]**

i) M/G/1

ii) M/M/m/m

iii) m-server loss system

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

a) Throughput in the finite Buffer Case

b) Little's formula to an M/M/1 Queue

c) Advanced Queueing Models

Q4) a) Explain Bayes formula with suitable example. **[8]**

b) Consider an M/M/1 system in which customers arrive according to a Poisson process of rate λ. Service rate is $\mu = 50$ customers/ minute. The average number of customers is N = 4. Calculate λ and W. **[8]**

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SECTION -II

Q5) a) Explain Queuing Network Model of Nodes in a PSN. **[6]**

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

weight of node = 01

Max. capacity of concentrator = 04

	G	*H*	*I*	*K*
a	6	5	8	1
b	4	12	12	12
c	25	5	16	4
d	15	18	15	2
e	12	29	1	23
f	4	25	15	1

Q6) a) Describe different Security management tools. Explain importance of it. **[8]**

b) Explain Bin Packing algorithm with example. **[8]**

Q7) a) Explain with neat diagram architecture of network node. **[8]**

b) Explain different challenges in modifying network implementation. **[8]**

Q8) Write a short note on (any three) **[18]**

a) Role of Network Administrator

b) Subnet Mask

c) Performance analysis of datalink layer

d) Network Implementation

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