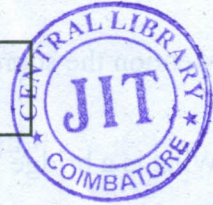


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Question Paper Code : 66087



M.E. DEGREE EXAMINATION, DECEMBER 2015/JANUARY 2016

First Semester

Computer Science and Engineering (With Specialization in Networks)

CP7101 : DESIGN AND MANAGEMENT OF COMPUTER NETWORKS

(Common to M.E. Computer Science and Engineering and M.E. Bio-metrics and Cyber Security)

(Regulations : 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is RMA ? State their importance in a network.
2. State the network dependencies that must be accommodated when upgrading the network infrastructure.
3. State the service metrics that are used to evaluate the capacity of a network.
4. What is meant by supportability in a network ? State the factors that drive supportability.
5. What is flow prioritization ?
6. List any two applications of flow analysis.
7. List the dependencies that exist between performance mechanisms in a network architecture.

8. What is a class B IP address ? How much class B subnets can there be ? How many hosts per class B subnet ?
9. Mention the sources that are used for gathering data in a network.
10. What is a bridge ?

PART – B (5 × 13 = 65 Marks)

11. (a) What is the need for requirement analysis ? Describe in detail the set of requirements that is derived from user input. (13)

OR

- (b) What is the use of process components ? Illustrate briefly the process components of a network with a diagram. (13)

12. (a) Describe the requirements of a network for predictable and guaranteed Performance. (13)

OR

- (b) Explain the process of developing delay requirements and capacity requirements. (13)

13. (a) Illustrate the process of flow identification and development with a simple example. (13)

OR

- (b) State the different form of flows and explain a flow specification algorithm with a simple example. (13)

14. (a) List and discuss the mechanisms involved in network management. (13)

OR

- (b) Present an architecture for security and privacy that can be used for a corporate network and discuss the same.

15. (a) Explain the role played by routing protocols in network design with any two examples. (13)

OR

- (b) Explain the various challenges involved in tracing a network for efficient design with an example. (13)

PART – C (1 × 15 = 15)

16. (a) An organization is assigned with the network number 140.25.0.0 and it needs to create a set of subnets that supports upto 25 hosts on each subnet. (15)

- (i) What is the subnet mask you would use to do this ?
- (ii) How many such subnets are possible ?
- (iii) Given that you have 25 hosts on each subnet, how much address space is being wasted ?
- (iv) What is the first usable host on the first subnet ?
- (v) What is the broadcast address of the last subnet ?

OR

- (b) You have been tasked with the problem of selecting network management solution for a medium size corporate network. The network includes several hundred systems spread across three buildings on the main campus in New Delhi and two satellite offices in Chennai and Nagercoil. The primary applications to support are e-mail, file and print sharing and a web based customer support application. For the given scenario, (i) analyze the requirements; (ii) identify the suitable architecture model and develop the component and network architecture and (iii) design appropriate routing strategies Give specific technologies (protocols, tools, devices, etc) which you will deploy. (15)