

(3 Hrs)

Marks : 80

Note :

- Solve any four questions.
- Make suitable assumptions whenever necessary.

- Q.1 [a] An autonomous university currently has 4 departments of engineering housed in one building with five floors, one floor dedicated to each branch, and a server room, office and central computing facility on the first floor. Two additional programmes viz, Pharmacy and MCA have been approved for the university, which would be housed in a separate building 1 km away. The laboratory structure of each floor in the new buildings would be similar. The university has been granted the IP address 220.57.24.0 via a 10 Mbps leased line. Design subnets so that each building is assigned a different subnet. Private IP addressing can be used for providing logical separation between the different departments. Give the design details for the backbone layer, distribution layer and access layer of the campus network. 12
- Draw the proposed network solution and include the details for IP-addressing in your design.
- Q.1 [b] Give the best practices of campus network design 08
- Q.2 [a] Explain hidden terminal problem. What are the disadvantages of the binary exponential back-off mechanism used in MACA? How are they overcome in MACAW? 10
- Q.2 [b] Enlist and explain the tasks involved in various phases of PPDIOO. 10
- Q.3 [a] What are the issues in resource reservation? Explain the various approaches of resource reservation. 10
- Q.3 [b] Explain RIP routing protocol. What is the difference between RIP v1 and RIP v2. 10
- Q.4[a] Compare and contrast IPv4 and IPv6. 10
- Q.4[b] Discuss importance of congestion avoidance mechanism. What are the various types of congestion avoidance mechanisms? Explain any two in brief. 10
- Q.5[a] Explain EIGRP routing protocol in detail. Compare it with OSPF. 10
- Q.5[b] Explain the concept of TCP congestion control mechanism. 05
- Q.5[c] Define scalability, availability and reliability. 05
- Q.6 Write short notes on the following (any two) 20
- [a] Virtualization and data centre design
- [b] DPRMA
- [d] High Availability Routing
- [e] Software Defined Networking

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