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**Question Paper Code : 71176**

M.E. DEGREE EXAMINATION, JUNE/JULY 2013.

Elective

Communication Systems

CP 9253/CP 953/10244 CME 61 — HIGH SPEED SWITCHING ARCHITECTURE

(Common to M.E. Computer and Communication, M.E. – Network Engineering and  
M.E. Digital Communications and Networking)

(Regulation 2009/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Distinguish between frames versus Cell switching.
2. Specify the list of switched LAN topologies.
3. What does the term 'asynchronous indicate in ATM networks?
4. State the benefits and limitations of deflection routing.
5. State how Shared output buffering impacts the performance of Queued switches.
6. Give some examples for Output Queued Switching Architecture.
7. 'What do you mean by "Sequence Preserving" in Packet Switching Architecture?
8. Compare Buffered with Buffer less Cross bar switch.
9. List some of the functionalities of Cell Switched Router.
10. Give some of the types of IP switches.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Compare and contrast between Cut through forwarding and Store and forward switching techniques. (8)
- (ii) Discuss in detail about virtual LANs and explain how they offer flexibility in network connection architecture. (8)

Or

- (b) (i) Explain the blocking and non blocking switching architecture with suitable example. (8)
- (ii) State how the fault tolerance is achieved in switching IAN Technology with an example. (8)
12. (a) (i) Indicate the need for ATM Network with suitable case study. (8)
- (ii) Explain the operation of Virtual connections and switching types used in ATM network. (8)

Or

- (b) (i) Specify the architecture of ATM and explain the functions of the three ATM layers. (8)
- (ii) Elaborate on ATM Signaling and Connection establishment process with neat illustration. (8)
13. (a) (i) An engineering firm provides each of its analyst with a personal computer, all of which are hooked up over a LAN to a database server. In addition, there is an expensive standalone graphics workstation that is used for special purpose design tasks. During the course of a typical 8-hour day, 10 engineers will make the use of the workstation and spend an average of 30 minutes at a session. Manager is satisfied with this arrangement since the utilization factor of the work station is only 5 hours out of 8. The engineers complain that the wait time for using the work station is long, often an hour or more, and are asking for more workstations. Explain the queuing analysis that should be done by the engineers to convince the manager. (8)
- (ii) Discuss in brief shared queuing in ATM switches with example. (8)

Or

- (b) (i) Explain how Combined Input Output Queuing Architecture is implemented using FIFO Input queues. (8)
- (ii) Explain in detail about multiple queuing networks and their performance analysis. (8)

14. (a) (i) Explain the architectures of Internet Switches and routers with neat sketches. (8)
- (ii) Discuss in detail about how multistage switching is achieved in Packet switching Network. (8)

Or

- (b) (i) Explain in detail about Back pressure Flow Control and Latency in Switching Fabric Architectures. (8)
- (ii) Discuss in detail about optical packet switching with suitable example. (8)
15. (a) (i) Briefly enumerate the running of IP over ATM Network with suitable illustration and point out its applications. (8)
- (ii) Explain the operation of Multi-protocol over ATM with implementation. (8)

Or

- (b) (i) Write a brief note on implementation of IPV6 over ATM with example. (8)
- (ii) Discuss in brief about Flow driven and Topology driven solutions in analyzing the performance of IP switching. (8)
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