Question Paper Code: 4033061

M.E. / M.Tech. DEGREE EXAMINATIONS, NOV/ DEC 2024
Third Semester
Communication Systems
P23CUO04 – HIGH SPEED SWITCHING AND NETWORKING
(Regulation 2023)

Time: Three Hours   Maximum: 100 Marks

Answer ALL questions

PART – A   (10 x 2 = 20 Marks)

1. What is a non-blocking switch?

2. Define buffering strategies in switching.

3. Recall the main components of VHF backbone networks?

4. Inter about the queuing theory of network analysis?

5. State the difference between Best-Effort service and Integrated services?

6. What is RSVP?

7. Define Little's theorem in queuing theory.

8. What is Pollaczek-Khinchin (P-K) formula used for?

9. Give an example for management information base.

10. How to ensure data integrity?

PART – B   (5 x 16 = 80 Marks)

11. (a) i) Discuss input-queued, output-queued, and combined Input-Output Queued (CIOQ) switching architectures.   (8)
    ii) Discuss MEMS-based optical switches and their role in modern communication networks.   (8)

(OR)

(b) i) Describe the working of Banyan networks and Batcher Banyan networks.   (8)

ii) Explain the difference between optical packet switches and optical burst switches.   (8)

12. (a) Explain how the PSTN Works? And discuss the modern Usage of the same.   (16)

(OR)

(b) Compare and contrast TCP/IP, FTP, and TELNET protocols in the context of high-performance networks.   (16)

13. (a) Discuss scheduling and policing mechanisms in multimedia networking and their impact on Quality of Service (QoS).   (16)

(OR)

(b) Explain RSVP message formats and message processing, routing, and merging in detail.   (16)

14. (a) Explain the birth-death Process with an example and derive the steady-state probabilities.   (16)

(OR)

(b) Explain Burke's Theorem in detail with a neat mathematical background.   (16)

15. (a) What is Advanced Encryption Standard (AES)? Explain the working of the cipher in detail.   (16)

(OR)

(b) Explain Simple Network Management Protocol (SNMP) in detail.   (16)

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