

Con. 4926-07.

(REVISED COURSE)

CD- 6486

(3 Hours)

[Total Marks : 100]

N. B. : (1) Question No. 1 is compulsory.

(2) Attempt any four questions out of the remaining six questions.

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| 1. | (a) Explain packet switching in brief. | 5 |
| | (b) Explain ATM traffic management in brief. | 5 |
| | (c) What is the difference between Congestion control and flow control. | 5 |
| | (d) Compare OSI model and TCP / IP model. | 5 |
| 2. | (a) Explain performance issues in ARQ. | 10 |
| | (b) Draw the layered OSI network architecture. Explain the functions of each layer and show the path of actual and virtual communication between the layers. | 10 |
| 3. | (a) Explain various transmission media in detail. | 10 |
| | (b) Explain IP with reference to IP addressing, IP fragmentation and reassembly. | 10 |
| 4. | (a) Explain the SONET multiplexing and SONET frame structure. | 10 |
| | (b) (i) Consider a 10 mbps single segment Ethernet LAN having a cable length of 500 metres and a mean frame length of 500 bytes. Assuming the speed of signal propagation to be 2.0×10^5 km/sec and an average of $e \approx 2.72$ contention slots per contention interval. Determine the channel efficiency. | 6 |
| | (ii) In sliding window flow control method, why the size of window is one less than the modulo range. | 4 |
| 5. | (a) What is the mechanism of sliding window flow control. | 10 |
| | (b) Explain the circuit switching adaptive routing algorithm. | 10 |
| 6. | (a) Explain Dijkstra's shortest path algorithm using graph. | 10 |
| | (b) Explain the standardised protocol architectures for LANs, which encompasses physical, medium access control and logical link control layers. | 10 |
| 7. | Write short note on the following :— | |
| | (a) HDLC data link control | 7 |
| | (b) IPv4 and IPv6 | 7 |
| | (c) Hubs, Bridges and Switches. | 6 |