

networks. Explain pure and birth-death process. (10)

(b) Compare and difference between TCP/IP and OSI models of each layer. (10)

8. Write notes on : (7 + 7 + 6)

- (a) Burke's Theorem
- (b) Satellite networks
- (c) Queuing models

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M.E. 3rd Semester ECE (Elective-III) Examination- December, 2016

COMPUTER COMMUNICATIONS

Paper : MEEC-611

Time : 3 hours

Max. Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Attempt any **five** questions.

1. (a) In a communication system, twenty four voice channels are to be multiplexed and transmitted over-twisted pair. What is the bandwidth required for FDM ? Let the bandwidth efficiency is 1 bps/Hz, find the bandwidth required for TDM using PCM. (10)
- (b) Compare circuit switching, packet switching and virtual circuit packet switching techniques with respect to different performance parameters. (10)

2. (a) Discuss the advantages and disadvantages of frame relay packet switching. Draw a diagram of the user-network interface protocol architecture and explain it. (10)

(b) Enlist various advantages of the use of virtual paths in ATM and hence explain the establishment using virtual paths. (10)

3. (a) Enlist various IEEE standards for wireless and wired Local Area Networks. Discuss various LAN devices and their functions. (10)

(b) Describe the structure of an optical fibre and explain the mechanism of light propagation along the fibre. (10)

4. (a) What are various routing strategies in packet switching networks? Discuss Dijkstra's algorithm in detail. (10)

(b) What is the network address in a block of addresses? How can you find the network address if one of the addresses in a block is given? (10)

5. (a) Compare the TCP header and UDP header. List the fields in the TCP header that are missing from UDP header. Give the reasons for their absence. (10)

(b) What is the reason that FTP does not have a message format? Why should there be limitation on anonymous FTP? (10)

6. (a) What is Cryptography? Explain symmetric key and Asymmetric key cryptography stating their applications and disadvantages. (10)

(b) Explain the key distribution problem in security. (10)

7. (a) List the procedural steps in modelling and analysis of computer communication.