

B.E/B.Tech(Full Time) DEGREE END SEMESTER EXAMINATIONS ,NOV/DEC 2011

ELECTRONICS AND COMMUNICATION ENGINEERING

SIXTH SEMESTER

EC381 DIGITAL SWITCHING AND TRANSMISSION

(REGULATIONS 2004)

Time: 3Hr

Max Mark : 100

Answer ALL questions

Part – A (10x 2 = 20 Marks)

1. Define packet switching.
2. What are the functions of MODEM?
3. Define out of band signaling.
4. Define Erlang.
5. Explain the multiplexing in optical transmission.
6. Explain the numbering plan used in telecommunication.
7. Define statistical and ensemble average?
8. What are the different services provided by ISDN?
9. In the queuing system what is the definition for M/M/R.
10. Define the birth death process in modeling of networks.

Part – B (5 x 16 = 80 Mark)

11. (i) Explain the time division time switch in the phased and slotted mode of operation. (8 Marks)
- (ii) Using the Time slot interchange (TSI) technique explain the working of time multiplexed time switching. (8 Marks)
- 12 a. (i) Compare the synchronous and asynchronous transmission (8 Marks)
- (ii) Explain the Working principle of memory controlled time division space switch and find its switching capacity. (8 Marks)

OR

- 12 b. (i) Explain the frame structure and the multiplexing the SONET/SDH transmission system (8 Marks)
- (ii) Explain briefly the transmitter and receiver blocks of satellite systems. (8 Marks)
- 13 a. Explain the protocol architecture of SS7 signaling. (16 Marks)

OR

13 b. Derive Erlang B formula for the infinite users. (16 Marks)

14 a. (i) Draw the backbone network of wireless local loop. And explain its functionalities using frame format.. (8 Marks)

(ii) Explain the principle of fiber in the local loop. What are the advantages.. (8 Marks)

OR

14b. (i) Explain in detail the message, packet and ATM switching.. (10 Marks)

(ii) Explain the blocking and delay characteristics of switching systems (6 Marks)

15a. Derive the Probability of serving equation for the delayed system using M/M/R queuing principle.. (16 Marks)

OR

15 b. (i) If the arrival process is Poisson process derive the equation for the arrival process with infinite subscribers. (16 Marks)