Roll No. ☐☐☐☐☐☐☐☐☐☐   **Total No. of Pages :02**

Total No. of Questions : 09

B.Tech.(EE)(2019 Onwards E-II)   (Sem.–7,8)
NETWORK AND DATA COMMUNICATION
Subject Code : BTEE-804E
M.Code : 71940

Time : 3 Hrs.   **Max. Marks : 60**

INSTRUCTION TO CANDIDATES :
1. **SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.**
2. **SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.**
3. **SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.**

SECTION-A

1. **Answer briefly :**

   a. Distinguish between Serial and Parallel Data Transmission.

   b. What is the bandwidth of fiber optics?

   c. Define the terms bit rate and baud rate. Give the relation between them.

   d. What are the different types of errors in data communication?

   e. Differentiate between circuit switching and packet switching.

   f. Explain frequency - Reuse principle.

   g. Why checksum field is optional in the case of IP protocol?

   h. What is the class of 221.23.45.67 IP address? Explain.

   i. Which layer provides end-to-end connectivity from host-to-host?

   j. Which MAC layer protocol is used by 802.11 WLAN?

SECTION-B

2. What are the different causes of transmission impairments? Discuss in detail.

3. Differentiate between circuit switching and packet switching.

4. Describe about various digital-to-digital signal encoding techniques.

5. Explain CRC with an example. How does single bit error differ from a burst error?

6. Describe the difference between cable modems and standard voice band modems.

SECTION-C

7. a. Explain CRC with an example. How does single bit error differ from a burst error?

   b. Discuss in detail internet protocol (IP) header of TCP/IP protocol suite.

8. Explain the OS1 Network architecture specifying the functions of each layer.

9. a. With a neat diagram, explain FDM with respect to multiplexing and demultiplexing, and mention its applications.

   b. Discuss spread spectrum way of data communication in detail. Explain different techniques employed under this technique.

NOTE : Disclosure of Identity by writing Mobile No. or Making of passing request on any page of Answer Sheet will lead to UMC against the Student.