USN

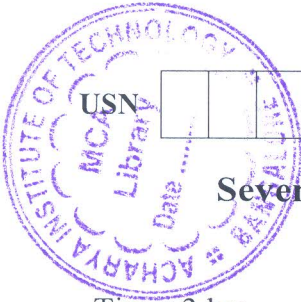**17EC741**

Seventh Semester B.E. Degree Examination, June/July 2023
Multimedia Communication

Time: 3 hrs.

Max. Marks: 100

Note: *Answer any FIVE full questions, choosing ONE full question from each module.*

Module-1

1   a. With the neat block diagram, explain :
       i) Digital transmission using modems
       ii) Multiple services via an high-speed modem. **(10 Marks)**
    b. Explain the multipoint conferencing modes of operation with neat diagram. **(10 Marks)**

OR

2   a. Determine the propagation delay associated with the following communication channels :
       i) A connection through a private telephone networks of 1km
       ii) A connection through a PSTN of 200km
       iii) A connection over a satellite channel of 50,000km
       Assume that the velocity of propagation of signal in the case of i) and ii) is 2×10^8 m/s and the case of iii) is 3×10^8 m/s. **(10 Marks)**
    b. Explain different broadcast television networks with neat block diagram. **(10 Marks)**

Module-2

3   a. Derive the time to transmit the following digitize images at both 64Kbps and 1.5Mbps.
       i) A $640 \times 480 \times 8$ VGA – Compatible Image
       ii) A $1024 \times 768 \times 24$ SVGA – Compatible Image. **(10 Marks)**
    b. Explain the Audio/Video synthesizer with schematic diagram. **(10 Marks)**

OR

4   a. Explain with block diagram of Raster scan display architecture. **(10 Marks)**
    b. Explain Pulse Code Modulation (PCM) signal encoding and decoding principles with the block diagram. **(10 Marks)**

Module-3

5   a. Explain the different compression principles. **(10 Marks)**
    b. Explain JPEG encoder schematic with neat block diagram. **(10 Marks)**

OR

6   a. Explain main features of distributed multimedia systems. **(07 Marks)**
    b. Explain the following with respect to multimedia operating systems.
       i) CPU management
       ii) Memory management
       iii)File system management. **(07 Marks)**
    c. Explain Resource Reservation Protocol (RSVP) architecture with block diagram. **(06 Marks)**

Module-4

7 a. Explain the differential pulse code modulation principles with neat block diagram.
(10 Marks)

   b. Explain with net block diagram of H·261 video encoder implementation schematic.
(10 Marks)

OR

8 a. Explain MPEG – 4 decoder schematic with neat block diagram. (10 Marks)

   b. Explain linear predictive coding signal encoder and decoder with neat schematic diagram.
(10 Marks)

Module-5

9 a. Explain the following with respect to Packet Network Environment.
i) Packet voice
ii) Packet video. (10 Marks)

   b. Explain the layer structure of network based multimedia system. (10 Marks)

OR

10 a. Explain video delay in ATM networks. (10 Marks)

    b. Explain Multiplexing in ATM networks. (10 Marks)

* * * * *