M. TECH IT (COURSEWARE ENGG) EXAMINATION
First Year - Second Semester – 2024
Multimedia Communication in Mobile Environment

TIME: 3 Hours | Full Marks: 100

Answer any ***five*** questions.
[All the question parts must be answered together]

1. a) State why SIP is better than the H.323 protocol. 10+5+5
   b) How does H.245 control signaling, conserve resources, and allow faster call setup?
   c) Draw the sequence diagram of call set-up and signaling between two H.323 Gateways.

2. a) Explain the call setup in SS7 signaling. 10+5+5
   b) Enumerate the functions of the TCAP protocol layer in the SS7 standard.
   c) Explain briefly the Service Information Field and Service Information Octet in the Message Signal Unit of SS7 protocol.

3. a) Describe the Session layer of the Wireless Application Protocol. 5+5+5+5
   b) Explain the *onenterbackward* event with an example in WML.
   c) How to call a WML script from a WML page?
   d) Why is WML script called a weakly typed language?

4. a) Describe the types of messages defined in Real Time Control Protocol 10+10
   b) Explain the DESCRIBE, SETUP, and PLAY requests and their possible replies in RTSP.

5. a) How is authentication performed in a GSM network? 5+5+10
   b) What are bursts? Explain various types of bursts in GSM.
   c) Explain briefly the Dedicated Control Channel and its types.

4. a) What are the functionalities of MMS-2, MMS-3, MMS-4 and MMS-5 interfaces? 10+10
   b) Explain with a diagram how SMS is delivered from one device in one network to another device in another network.

7. a) Draw the life cycle of the Service in Android. What are the types of Services available on Android? 5+5+5+5
   b) Why Dalvik VM is phased out for Android Runtime (ART)?
   c) What is the difference between bounded and unbounded services in Android?
   d) Explain briefly why Java byte code cannot be executed in Android?

8. Write short notes on (*ANY FOUR*) 5x4
   a) Proxy Server in SIP
   b) Home Location Register in GSM
   c) MCU in H.323
   d) ISUP message types in SS7
   e) Network and Switching Subsystem (NSS)