

28-Dec-2023 10:30 am - 01:30 pm 1T01037 - B.E.(Electronics and Telecommunication)
(SEM-VII)(Choice Base Credit Grading System) (R- 19) (C Scheme) / 42472 - MOBILE
COMMUNICATION SYSTEM QP CODE : 10038810

Time: 3 Hours

Max. Marks: 80

- N.B.: (1) Question No.1 is compulsory
(2) Write any three questions from Q.2 to Q.6.
(3) Draw a neat diagram wherever necessary.
(4) Assume suitable data if required and state it clearly.

- Q.1** Attempt any four **20**
A Explain power control process in WCDMA.
B A 40MHz band is allocated for Mobile communication with simplex BW of 30Khz per user. Calculate no. of duplex channels. Also calculate number of voice channel and number of control channel if 10% channels are dedicated for control information.
C Explain Various codes used in IS-95 CDMA system.
D What are the factors affecting small scale fading.
E Explain GSM features and services.
- Q.2 A** List the methods used to increase the system capacity. Explain any one in detail with advantages and disadvantages. **10**
B Draw GSM architecture and explain working of it. **10**
- Q.3 A** Compare multiple access techniques SDMA, TDMA, FDMA and CDMA. **10**
B What is Handoff, explain Handoff procedure with neat diagram and also, explain Mobile assisted and Base assisted Handoff. **10**
- Q.4 A** Draw UMTS block diagram and explain function of each block. **10**
B Mobile system is operating at 900MHz. For a user moving at a speed of 72km/h, calculate the received carrier frequency if the user is moving
(1) Directly away of from the BS
(2) Directly towards the BS.
(3) 60° to the direction of arrival of the transmitted signal
(4) Direction perpendicular to the direction of arrival of the transmitted signal. **10**
- Q.5 A** How MIMO system increases reliability and data rate. **10**
B Draw and explain 3GPP LTE architecture. **10**
- Q6** Write short notes (any two) **20**
A How RAKE receiver improves gain in the presence of multipath fading.
B Software Defined Radio
C Compare 1G, 2G, 3G and 4G
D Explain architecture of EDGE technology, how EDGE technology enhances data rate.
