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MAR_APR 2026 SUMMER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Mobile Technology (ETC)

Sub. Code: 81651/81861/84928/84929

Day and Date: Thursday ,04-06-2026 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:
1. **All questions are compulsory**
2. **Assume suitable data wherever necessary and mention it boldly**
3. **Figures to the right indicate full marks**
4. **Use Sketches/Diagrams wherever necessary**

Q1) Solve the following MCQs. **[14]**

i. SDMA differentiates users based on_____.
- A. Frequency
- B. Time
- C. Spatial separation
- D. Code

ii. The CDMA access technique assigns _____ to each user.
- A. Different time slots
- B. Unique frequency bands
- C. Separate codes
- D. None of the Above

iii. Increasing cluster size in a cellular network:
- A. Increases overall network performance
- B. Decreases capacity
- C. No impact on performance of network
- D. Increases data rate

iv. The control channels used in GSM for _____.
- A. Traffic Analysis
- B. Call setup
- C. Broadcasting
- D. Clustering

v. Which GSM service provides enhanced packet data?
- A. SMS
- B. EDGE
- C. HSCSD
- D. FDMA

vi. Reactive routing protocols work on _____.

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A. Maintaining tables periodically
B. Flooding for route discovery when needed
C. Broadcasting routing updates continuously
D. Building multicast trees only

vii. _____ mobile generation introduced packet switching services.

A. 1G
B. 2G
C. 3G
D. 4G

Q2) Solve Any Two.

a. Discuss personal communication systems. **[7]**

b. Compare FDMA, TDMA, and CDMA based on capacity and interference. **[7]**

c. Discuss factors affecting selection of cluster size in a cellular system. **[7]**

Q3) Solve Any Two.

a. Explain packet-switched data services on cellular networks with examples. **[7]**

b. Discuss small-scale fading. **[7]**

c. Explain basic propagation mechanisms: reflection, diffraction, and scattering. **[7]**

Q4) Solve Any Two.

a. Explain GSM radio transmission parameters. **[7]**

b. Discuss GPRS and EDGE services in GSM. **[7]**

c. Explain GSM security features: authentication and encryption. **[7]**

Q5) Solve Any Two.

a. Explain AODV routing protocol. **[7]**

b. Describe LTE architecture and its main components. **[7]**

c. Explain the architecture and important components of 5G. **[7]**

End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.

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सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (1154) B.Tech. CBCS (81651) Mobile Technology (ETC) Part 3 SEM 6
2] (101) Bachelor of Engineering (84929) Mobile Technology (ETC) Part 3 SEM 6
3] (1154) B.Tech. CBCS (84928) Mobile Technology (ETC) Part 3 SEM 6
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