

TED (15) – 6134

Reg. No.

(REVISION — 2015)

Signature

**DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/
MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019**

MOBILE COMMUNICATION

[Time : 3 hours]

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

I Answer *all* questions in one or two sentences. Each question carries 2 marks.

1. What is the ideal geometric pattern for a cell ? Give one reason for variation from ideal pattern in practical implementation.
2. State whether the following statements are TRUE or FALSE
 - (a) In CDMA system multiple users share the same band at the same time.
 - (b) The BSC manages the handoff of a mobile unit from one cell to another within BSS.
3. Write the IEEE standard for broadband wireless access standard.
4. What is WPA ?
5. Identify the wireless technologies most suited for the following cases.
 - (a) Computers in a large manufacturing plant.
 - (b) To make calls from a wireless headset connected remotely to a cell phone.

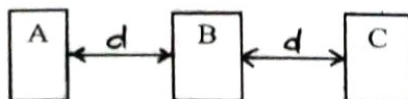
(5×2 = 10)

PART — B

(Maximum marks : 30)

II Answer any *five* of the following questions. Each question carries 6 marks.

1. Draw the overall GSM Architecture.
2. Consider three mobile systems A, B and C each with a communication link range of d meters are located in a straight line as shown below. A collision of signal may occur at B.
 - (a) Give the reason for occurring collision at B.
 - (b) Write the name of the problem.
 - (c) Give the name of the channel access scheme that can resolve the above problem.



3. List two forms of FDMA in satellite communication. Write a brief description about two forms of FDMA.
4. Write a short note on WAP Programming model.
5. Compare different wireless LAN technologies with respect to data rate, range, modulation technique and access method.
6. Define Piconets and Scatternets. What is the relationship between master and slave in a piconet.
7. Write short note on wireless sensor network.

(5×6 = 30)

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

- III List the steps in a typical call between two mobile users within an area controlled by a single mobile telecommunications switching office (MTSO). Explain each step with necessary diagrams.

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OR

- IV Explain how the following medium access control mechanisms regulate user access to the medium. Also state the advantages and disadvantages of each system, if any
- TDMA
 - CDMA
 - SDMA

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UNIT — II

- V Define GEO, LEO and MEO satellites. Compare GEO, LEO and MEO satellites with respect to following factors. Orbital Period, Propagation delay, No. of hand off, No. of satellites required to cover the planet, foot print, signal power, frequency reuse and applications.

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OR

- VI List and briefly define the capabilities provided by Mobile IP. Illustrate the operations that occur during the data exchange between a mobile node and another host.

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UNIT — III

- VII (a) List and briefly describe Wireless LAN applications.
- (b) Explain IEEE 802.11 MAC Logic.

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OR

- VIII (a) Explain the IEEE 802 architecture.
- (b) State the important requirements for Wireless LAN.

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UNIT — IV

- IX Draw the architecture of Bluetooth Protocol stack. Describe briefly each element in the protocol stack.

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OR

- X Describe the applications, requirements and Medium Access Control of IEEE 802.15.3.

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