



Name :

Roll No. :

Invigilator's Signature :

CS/B.Tech (EIE-N)/SEM-8/EC-802D/2011
2011
MOBILE COMMUNICATION

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A
(Multiple Choice Type Questions)

1. Choose the correct alternatives for any *ten* of the following :

$10 \times 1 = 10$

- i) The DECT operation frequency band is
- a) (1880 – 1900) MHz b) (1650 – 1880) MHz
- c) (2.5 – 3.5) MHz d) (3 – 4) GHz.
- ii) Which satellite has a distance of 36,000 km from the centre of the earth ?
- a) GEO b) MEO
- c) LEO d) HEO.
- iii) GSM uses for multiplexing.
- a) CDMA b) TDMA
- c) FDMA d) none of these.



xii) Indoor propagation model takes care of

- a) losses due to indoor antennas
- b) losses due to walls
- c) losses due to other wireless equipment
- d) losses due to active devices operating in ISM band.

GROUP – B
(Short Answer Type Questions)

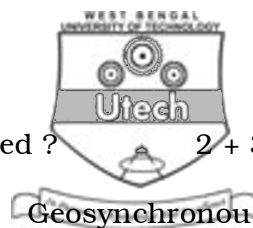
Answer any *three* of the following. $3 \times 5 = 15$

- 2. Derive signal to interference ratio for co-channel interfering cells. 5
- 3. What is WAP ? Explain the various useful aspects of WAP in mobile communication. 3 + 2
- 4. What are the advantages and disadvantages of CDMA over TDMA and FDMA ? 5
- 5. What is an ISM band and what are its advantages ? 5
- 6. Explain how a mobile station connects to and talk with another mobile station. 5

GROUP – C
(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

- 7. a) Draw & explain GSM architecture. 7
- b) Discuss GPRS location management procedure. 3
- c) Explain how data transfer through GPRS network and routing occurs. 5



8. a) What is Hand over ? How is it controlled ? 2 + 3
- b) Calculate the orbital velocity for Geosynchronous satellite. 5
- c) What are the different advantages and disadvantages of Geosynchronous satellite ? 5
9. Explain how mobile IP works ? What are the different challenges of Mobile IP ? What is Tunneling ? How does cellular IP solve the mobile IP challenges ? 5 + 5 + 2 + 3
10. a) In packet radio multiple access technique, explain with a schematic, how vulnerable period is set. How do we measure throughput of the system ? 4 + 2
- b) What are the major highlights and concepts of a 3G network ? 5
- c) With a schematic diagram, explain mobile network involving land line links. 4
11. Write short notes on any *three* of the following : 3 × 5
- a) Bluetooth
- b) CDMA
- c) Mobile computing
- d) Spread spectrum technology
- e) AMPS.
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