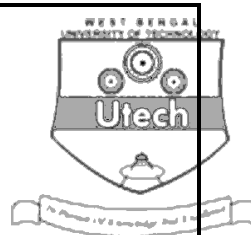
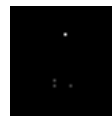


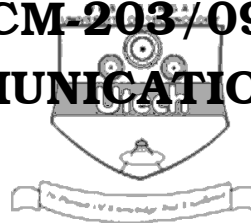
**No additional sheets are to be used and no loose paper will be provided**



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**CS/M.Tech (ECE)/SEM-2/ECM-203/09**  
**MOBILE & PERSONAL COMMUNICATION**  
**SEMESTER - 2**



Time : 3 Hours ]

[ Full Marks : 70

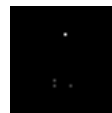
*The figures in the margin indicate full marks.*

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

Answer any *five* questions.

5 × 14 = 70

1. What are the basic differences between fixed telephone wire system and mobile telephone system ? What are the mediums through which these types of communication are made ? What are the different radio frequency ranges with wavelength are involved in these systems ? Where and when does the first amplitude modulation take in both the speech communication systems ? 14
2. What is the frequency scheme that is being used in push-button dialing system ? What is the name of this dialing system and what type of modulation is involved here ? What are the drawbacks that lead the analog mobile telephone system into cellular digital telephone system ? Describe very briefly regarding the limitation of facilities in mobile telephone system. 14
3. In GSM, there are different interfaces. How are those interfaces working in the said system ? Enumerate briefly with sketches, if necessary. 14
4. What do you mean by channels in mobile communication ? How are the channel frequencies distributed in different channels in micro-cell along with band gap ? Are the channel frequencies related with wavelength ? Explain briefly. 14
5. What do you mean by hand-off capabilities and frequency reuse in mobile communication ? What do you mean by Grade of service and what is the value of GOS, which can give minimum blockage during communication ? 14



6. Write down very briefly about the evolution of Mobile Communication. What are the primary basic carrier frequencies used in analog type mobile communication *i.e.* in IG system ? Explain briefly along with sketches and diagrams, if necessary. 14
7. What is the principle of Cellular Network ? From where is a mobile call originated which acquires a channel for moving towards a receiver ? What is the significance of hexagonal pattern in cellular geometry ? Why is circular pattern not chosen in Cellular Network System ? 14
8. What is an Antenna ? The BSS provides the numbers of BTS. Are all the BTS in a BSS provided with different types of Antenna system ? Justify very briefly. 14
9. What are the different types of transmission line ? With a very brief note, justify how and when they are categorized. What is characteristic impedance ? Is there any question of transmission line in case of mobile communication ? If so, justify very briefly. 14
10. Why does cellular telephone system evolve out from the conventional mobile telephone systems ? Why is 800 MHz chosen as carrier frequency for mobile communication ? Mention the allocation of carrier frequencies for other systems, which are being used in practice. 14

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END