CS/M.Tech(ECE)/SEM-2/ECM-203/09

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CS/M.Te ENGINEERING & MAI MOBILE & PERSONAL	NAGE	MENT	EX	AMIN	ATI	ONS,	JUL			- 2)	
Time : 3 Hours]									[Fu	ll Mai	rks : 7
INSTRUCTIONS TO THE CANDIDA 1. This Booklet is a Question-cum-Ans concerned subject commence from Page 1.	wer Bo		The B	ooklet	cons	ists o	f 32 p	ages.	The q	uestior	ns of th

- 2. You have to answer the questions in the space provided marked 'Answer Sheet'. Write on both sides of the
- 3. Fill in your Roll No. in the box provided as in your Admit Card before answering the questions.
- Read the instructions given inside carefully before answering. 4.
- 5. You should not forget to write the corresponding question numbers while answering.
- 6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
- 7. Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.
- 8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, which will lead to disqualification.
- 9. Rough work, if necessary is to be done in this booklet only and cross it through.

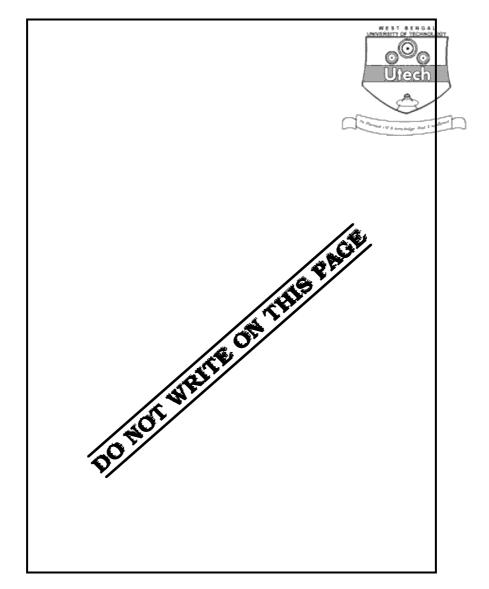
No additional sheets are to be used and no loose paper will be provided

FOR OFFICE USE / EVALUATION ONLY Marks Obtained Question Total Examiner's Number Marks Signature Marks Obtained

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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.

 $5 \propto 14 = 70$

- 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?
- 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.
- 3. In GSM, there are different interfaces. How are those interfaces working in the said system? Enumerate briefly with sketches, if necessary.
- 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.
- 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?

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- 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.
- 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?
- 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.
- 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.
- 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.

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