

Seat
No.

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मानव - 016

Mobile Communication

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Solve **any five** questions.
5. Draw neat diagrams and assume suitable data if necessary.

1. a) What is a need of frequency reuse? Explain reuse concept and show that $N = i^2 + ij + j^2$ where N is the number of cells per cluster. 10
b) Draw the block diagram of a cellular system and explain how a cellular telephone call is made between two mobile users. 10
2. a) Discuss various methods that may be used for improving the capacity in cellular systems. 8
b) Discuss the multiplexing techniques. List the differences between TDMA/ FDMA/ CDMA. 12
3. a) Draw the block diagram of GSM architecture and explain functioning of each block. 10
b) How does the privacy and security issues are handled in GSM network? 10
4. a) What is equalization? How is RAKE receiver helping to minimize interference? 10
b) Characterize the wireless channel. Why we assume Rayleigh distribution model for mobile channel? 10
5. a) Draw the transmitter and receiver block diagram of MSK and explain its significance to wireless. 10
b) Explain in detail about WLL and pager. 10

6. a) Define : 10
- i) Hand off
 - ii) Cluster
 - iii) Co-channel interference.
 - iv) Co-channel reuse ratio.
- b) What are the factors influencing small scale fading? How to mitigate fading effects? 10
7. a) Enlist important properties of BCH code, How many errors this code can correct? 10
- b) How is RS code differs from other block codes? What are the limitations of RS codes? 10
8. a) Describe function of various channels used in GSM mobile communication. 10
- b) Write a note on Personal Communication System. 10
