

Seat  
No.

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मानव - 017

## Communication System Design

P. Pages : 1

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. Attempt **any five**. Each question carries equal marks.
5. Draw well label diagram and assume suitable data whenever necessary.

1. a) Explain small scale multipath propagation and which are influencing factors.  
b) Explain different types of multipath fading.
2. a) Explain the QPSK with power spectrum.  
b) Compare BPSK and MSK.
3. a) Write short notes on :  
i) Channel model.  
ii) Envelope fading.  
b) Explain the frequency selective multipath fading.
4. a) Analyze the noise in unbalanced mixer.  
b) Write short notes on :  
i) Nonlinearity in Receiver Front end.  
ii) IIP 3 Receiver front end requirement.
5. a) Explain in detail the noise figure in Wideband LNA design.  
b) Compare Wideband and Narrowband LNA.
6. a) In high frequency analyze the distortion in Gilbert mixer.  
b) What is balancing of Gilbert Mixer, what is the significance of same.
7. a) Explain various features for a demodulator in communication.  
b) Explain low pass order sigma - Delta modulator.
8. a) Explain various validation methods used in design technology for wireless communication.  
b) What is design entry for wireless system design? Explain various simulation tools used in it.

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