

Seat  
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BEI1309

## Analog Communication (New) (1100)

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. From each question attempt **any two** sub questions.
5. Only non-programmable calculator is allowed.
6. Figures to the right indicate full marks.
7. Assume suitable data if required.

### UNIT - I

1. a) With the block diagram of generalised communication system explain communication. Also explain Modulation and Receiver. 10
- b) Give classification of Noise, describe the Shot Noise in detail. 10
- c) Define the equivalent noise temperature of a receiver. Calculate the receiver's noise figure in decibels and it's equivalent noise temperature when an antenna whose resistance is  $40\Omega$  and equivalent noise resistance of  $20\Omega$  is connected to receiver. 10

### UNIT - II

2. a) Define and describe vestigial sideband transmission and state their applications. 10
- b) Draw and explain block diagram of A.M. Transmitter. 10
- c) Draw and explain block diagram of the third method to generate SSB. 10

### UNIT - III

3. a) Derive equation for F.M. wave show that modulation Index in F.M. is always greater than one. 10

- b) i) What is pre-emphasis and De-emphasis. 5
- ii) Determine the value of the capacity reactance obtainable from a reactance FET whose  $g_m$  is 15 millisiemens. Assume that the gate to source resistance is one seventh of reactance of the gate to drain capacitor and that the frequency is 5MHz. 5
- c) Explain Indirect method of generation of F.M. 10

**UNIT - IV**

4. a) Explain Balance slope detector with characteristics. 10
- b) Draw and explain superheterodyne receiver. 10
- c) Explain the terms selectivity, sensitivity, fidelity, stability, signal to noise ratio. 10

**UNIT - V**

5. a) Explain TDM in details. 10
- b) Explain the Ground wave propagation. 10
- c) Explain fiber optics links, it's losses and advantages. 10

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