B.E. Fourth Semester (Information Technology) (CGS)

10720 : Communication Engineering : 4 IT 02

P. Pages : 2 | AU - 2605

Time : Three Hours | Max. Marks : 80

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Notes : 1. Assume suitable data wherever necessary.
2. Illustrate your answer necessary with the help of neat sketches.

1. a) What is communication? Explain the communication system with its elements. **6**

   b) Derive an expression for AM signal and also draw its frequency spectrum. **7**

OR

2. a) Explain the working of "Balance modulator using FET's" with its circuit arrangement and waveforms. **6**

   b) Calculate percentage power sawing when carrier and one of the sideband is suppressed in an AM signal modulated to the depth of 100% and 50%. **7**

3. a) What are functions of AM receiver? Explain the working of TRF receiver. **6**

   b) Explain the working of "Diode Detector". **7**

OR

4. a) Explain the block arrangement in super-heterodyne receiver. **6**

   b) What are selectivity and sensitivity? **7**

5. a) What is frequency modulation? Derive an expression for FM. **6**

   b) What are characteristics of Varactor diode? Explain its used for FM generation. **8**

OR

6. a) What are "Pre-emphasis" and "De-emphasis". **6**

   b) What is FM? Explain the operation of "FET reactance modulator". **8**

7. a) Explain the working of "Balance slope Detector" with its circuit arrangement. **6**

   b) Differentiate between AM and FM receiver. **7**

OR

8. a) Explain the block diagram of FM receiver. **6**

   b) Explain the working of "Foster-Seeley Detector" for frequency demodulation. **7**

9.	a)	What is pulse modulation? State and explain sampling theorem.	**6**
	b)	Explain the principle of operation of PCM.	**7**

OR

10.	a)	Explain PAM with its advantages.	**6**
	b)	Explain working of "Delta modulation".	**7**
11.	a)	Explain aliasing and aperture effect in modulation.	**6**
	b)	Derive and explain any four Fourier transform properties.	**8**

OR

12.	a)	Design and analyze sinusoidal and discrete pulse train signal.	**6**
	b)	State and prove convolution theorem.	**8**

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