Register Number:……..

B.E DEGREE EXAMINATIONS: APRIL/MAY 2014

(Regulation 2009)

Fifth Semester

ELECTRONICS AND INSTRUMENTATION ENGINEERING

EIE108: Communication Engineering

Time: Three Hours **Maximum Marks: 100**

Answer ALL Questions:-

PART A (10x1=10 Marks)

1. The process of impressing low frequency information signals on to a high frequency carrier signal is called-----
   a) Modulation b) De-modulation c) Companding d) None
2. AM Modulator is a ---------- device.
   a) Linear b) Non-Linear c) Sampling d) None
3. The bandwidth of an AM-DSBFC wave is equal to the ------- between the upper side frequency and lower side frequency.
   a) Addition b) Difference c) Division d) Multiple
4. FM de-modulator----------
   a) Integrator followed by a PM modulator
   b) PM demodulator followed by a differentiator
   c) FM demodulator followed by an integrator
   d) Differentiator followed by an FM modulator
5. If both amplitude and phase are varied proportional to the information signal ------ results.
   a) ASK b) FSK c) PSK d) QAM
6. The sampling process alters the frequency spectrum and introduces an error ----------
   a) frequency error b) phase error c) aperture error d) None
7. Amplitude Shift Keying is some time called as ----------
   a) Amplitude Modulation b) Phase Modulation
   c) Digital Amplitude Modulation d) None
8. The process of extracting a phase coherent reference carrier from receiver signal is ---------
   a) Modulator b) De-modulator c) Carrier recovery d) None

9. The point in an orbit that is located farthest from earth ----------
   a) Apogee b) Perigee c) Inclined orbit d) None
10. A fiber has a central core with a uniform refractive index called ---------- fiber.
    a) Step-Index b) Graded-Index c) Multi mode d) None

PART B (10 x 2 = 20 Marks)

11. Define Amplitude Modulation.
12. What is the relationship between receiver noise bandwidth and temperature?
13. What are the advantages of Angle Modulation?
14. Describe FM thresholding.
15. What is the purpose of the Sample and Hold circuit?
16. What is the difference between natural and flat-top sampling?
17. Define bandwidth efficiency
18. Define Carrier recovery.
19. State the importance of satellite.
20. Write down the advantages of optical fiber communication

PART C (5 x 14 =70 Marks)

21. a) With the help of neat block diagram explain functioning of super heterodyne radio receiver. List out the significance of it over TRF receivers.

(OR)

b) (i) Derive the expression of AM wave and its power relation. (10)

(ii)The carrier amplitude after amplitude modulation varies between 4V and 1V.calculate depth of modulation. (4)

22. a) Explain in detail about the generation of FM using Armstrong method.

(OR)

b) (i) Explain about foster-seeley discriminator in detail. (10)

(ii) What are the benefits of FM? (4)

23. a) Explain in detail about PCM Transmitter cum Receiver with neat block diagram.

(OR)

b) Discuss in brief about the Delta modulation transmitter cum receiver with neat block diagram.

24. a) Explain in detail the functioning of a QPSK digital transmitter cum receiver operation with relevant diagrams.

(OR)

b) Explain in detail the functioning of a FSK digital transmitter cum receiver operation with relevant diagrams.

25. a) (i) Discuss in brief about satellite system link models. (8)

(ii)Write short notes on satellite system parameters. (6)

(OR)

b) (i) Discuss in about optical fiber classifications. (6)

(ii) Explain in detail about optical fiber losses. (8)

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