

B.E., DEGREE EXAMINATIONS: NOV/DEC 2012

Fifth Semester

ELECTRICAL AND ELECTRONICS ENGINEERING

ECE260: Communication Engineering

Time: Three Hours

Maximum Marks: 100

Answer All the Questions:-

PART A (10 x 1 = 10 Marks)

1. A Super heterodyne receiver is tuned at 1000 kHz , if IF is 450 KHz, the image frequency is
(a) 1000 KHz (b) 450 KHz (c) 1900 KHz (d) 1450 KHz
2. The amplitude modulator works on the principle of
(a) Multiplication (b) Addition (c) Subtraction (d) Division
3. Standing wave ratio is
(a) I_{max}/I_{min} (b) V_{max}/V_{min} (c) V_{max}/I_{min} (d) I_{max}/V_{min}
4. Which is often called as Ribbon cable?
(a) open-wire line (b) Twin lead (c) Twisted pair (d) Shielded Cable
5. For which modulation technique, two phases are possible for single Carrier frequency.
(a) BFSK (b) PCM (c) PAM (d) BPSK
6. In which type of multiplexing, all the transmitters are interleaved in time.
(a) FDM (b) CDMA (c) TDM (d) SPADE
7. Which network provides data communication within a very limited geographical area.
(a) MAN (b) WAN (c) ISDN (d) LAN
8. Which code uses dot, dash and space?
(a) Morse (b) ASCII (c) EBCDIC (d) Bar code

9. Optical fiber uses the principle of

- (a) Refraction (b) Absorption (c) Reflection (d) Scattering

10. LASER uses the concept of

- (a) Stimulated emission (b) Spontaneous emission
(c) Avalanche breakdown (d) Zener breakdown

PART B(10 x 2=20 Marks)

11. Define Modulation index and percent modulation for an AM wave.
12. What is Heterodyning?
13. What is ground wave propagation?
14. List five types of transmission line losses.
15. What is overload distortion?
16. What is pulse code modulation?
17. What are the advantages of parallel transmission?
18. What are the seven layers of open system interconnection?
19. Define apogee and perigee.
20. Define refractive index.

PART C (5 x 14=70 Marks)

21. a) (i) Explain the working of super heterodyne receiver with necessary diagrams. (10)
(ii) Describe the characteristics of the above receiver. (4)
(OR)
(b) (i) Explain any one AM modulator circuit. (8)
(ii) Explain the principle of envelope detector. (6)
22. a) (i) What are standing waves? Derive SWR and reflection coefficient. (10)
(ii) For a transmission line with incident voltage of 5V and reflected voltage of 3V, determine Reflection coefficient and SWR. (4)

(OR)

b) Describe the following

(i) Ground Wave Propagation (7)

(ii) Space Wave Propagation (7)

23. a) (i) Explain the generation and detection of BFSK. (10)

(ii) State merits and demerits of BFSK. (4)

(OR)

(b) Write in detail the working of

(i) T1 digital carrier system (7)

(ii) D-type channel banks (7)

24. a) (i) Describe Serial and Parallel Interfaces. (8)

(ii) What are the various types of modems? Explain briefly. (6)

(OR)

b) What is ISDN? Write about the architecture, channels and interfaces of ISDN.

25. a) (i) Describe a satellite system link model. (10)

(ii) Explain the principle of various types of LEDs. (4)

(OR)

b) (i) Explain in detail about geosynchronous satellite. State its advantages and disadvantages. (10)

(ii) What are the various forms in optical fibers? (4)
