

G 1346

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2016

Seventh Semester

Branch : Electrical and Electronics Engineering

EE 010 705—COMMUNICATION ENGINEERING (EE)

(New Scheme—2010 Admission onwards)

[Improvement/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. What is image frequency ? What are its effects ?
2. What are the functions of pre- and post-equalising pulses ?
3. List three methods of navigation.
4. What is direct sequence spread spectrum in CDMA ?
5. Explain the principle of ASK signalling scheme.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Explain the merits and demerits of FM compared to the AM.
7. Define and explain compatibility. Describe the important points considered for maintaining compatibility.
8. An MTI radar operates at 8 GHz with a PRF of 5000 PPS. Calculate the blind speed.
9. Explain the parts and operation of transponders.
10. With a block diagram, explain adaptive Delta modulation scheme.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each full question carries 12 marks.

11. With a neat block schematics, explain the function of each block in the FM transmitter using Armstrong Modulator. What are the advantages gained by using pre-emphasis circuit ?

Or

Turn over

12. Draw circuit diagrams and explain their functions for : (4 marks)
- (i) Reactance modulator using BJT. (4 marks)
 - (ii) AGC circuit for AM. (4 marks)
 - (iii) Ratio detector.
13. (a) Explain interlaced scanning and frequency interleaving giving standard values. Describe their advantages. (7 marks)
- (b) Describe the colour burst signal and give its purpose. (5 marks)

Or

14. Describe the principle of NTSC signal. With a neat detailed block diagram, explain the function of each block in a colour NTSC transmitter.
15. Explain how isolation is achieved between the transmitter and receiver of an MTI radar. With a neat block diagram, describe the working of a MTI radar.

Or

16. With necessary diagrams, explain the principle and working and applications of Ground controlled approach system.
17. (a) Describe the altitude and control system of communication satellites. (6 marks)
- (b) Explain different orbits of satellite and their properties. (6 marks)

Or

18. (a) Find the velocity of a satellite at the perigee and apogee of its elliptical orbit in terms of the semi-major axis 'a' and eccentricity 'e'. (6 marks)
- (b) Discuss various antennas and antenna subsystem used in Satellite Communication. (6 marks)
19. Explain the features of BPSK. How it is generated and can be demodulated ? Compare with ASK and FSK.

Or

20. (a) Explain the principle of PCM and its advantages. (6 marks)
- (b) Describe a method of generating PAM using natural sampling. (6 marks)

[5 × 12 = 60 marks]