

B 2274

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2007.

Fourth Semester

Information Technology

IF 252 — TELECOMMUNICATION SYSTEMS

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is software defined radio?
2. State the type of multiplexing used in cable TV system to transmit many TV signals on a single cable.
3. Suggest two reasons for using directional antenna.
4. What is Citizen's band radio?
5. What is the purpose of cell splitting?
6. State the basic function of a transponder.
7. What is the purpose of spin stabilization?
8. The most commonly used wavelength of LED light in optical fiber communication is 1.3 micro meter. Why?
9. How can non-ISDN device be used with an ISDN system?
10. What is DTMF signaling?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Draw and explain super heterodyne receiver to demodulate an AM signal. (12)

(ii) Compare super heterodyne and TRF receiver. (4)

Or

(b) Explain FDM and TDM systems for multiplexing and de-multiplexing base band signals. Compare FDM and TDM systems. (16)

12. (a) (i) Sketch and explain the general block diagram of a pulsed radar. (12)

(ii) State four applications of radar. (4)

Or

(b) (i) Present the overall architecture of a basic cellular system and explain each subsystem. (12)

(ii) Explain the sequence of event when a cellular phone is turned on. (4)

13. (a) What are the two basic classification of fiber-optic cable; explain. Discuss the following three types of fiber-optic cable.

(i) Single mode step index

(ii) Multimode step index

(iii) Multimode graded index.

Or

(b) Write short notes on the following.

(i) Fiber-Distributed Data Interface

(ii) Gigabit Ethernet

(iii) Fiber channel

(iv) Synchronous Optical Network

14. (a)

(b)

15. (c)

- AM
(12)
(4)
14. (a) Draw and explain the general block diagram of an earth station. Also explain how different signals are interfaced with ground communication equipment transmit circuits.

Or

- (b) What are the primary factors that determine a satellite's useful life in space? State and explain four major applications of satellite.

- lexing
(16)
(12)
(4)
15. (a) Explain the process and hardware used to convert images to be transmitted into electrical signals in fax machine. Describe how fax signals are processed to speed up transmission.

Or

- (b) (i) Draw and explain the ISDN network architecture. (12)

- (ii) Explain the primary and basic rate interface in ISDN. (4)
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