

**H 1353**

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2006.

Fourth Semester

Information Technology

IF 252 — TELECOMMUNICATION SYSTEMS

Maximum : 100 marks

Time : Three hours

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define standing wave ratio.
2. What are the advantages of fiber optic cables over electrical cables?
3. Define frequency reuse concept, in cellular mobile communication.
4. State the specification for basic rate ISDN.
5. Define critical angle.
6. What are the different sources used in optical communication?
7. What is the type of antenna used in satellites?
8. What is the function of transponder?
9. Define fading.
10. What is the significance of characteristic impedance?

PART B — (5 × 16 = 80 marks)

11. (i) Draw the block diagram of the communication receiver and explain its functionalities.
- (ii) What are the different types of antennas? Explain each with the radiation pattern.

12. (a) (i) Write short notes on GPS receiver and surveillance satellites.  
(ii) Explain the application of satellite in satellite radio and satellite telephone service.

Or

- (b) (i) Explain the earth station subsystem with neat block diagram.  
(ii) What are the components of telemetry tracking and control subsystem? Explain each in detail.

13. (a) (i) Explain about AMPs.  
(ii) Explain digital cellular systems.

Or

- (b) Explain the operation of cellular telephone system with the transmitter and receiver block diagram.

14. (a) (i) Draw the block diagram of a fibre optic communication system and explain.  
(ii) Write short note on attenuation and dispersion.

Or

- (b) (i) Explain how a optical signal is detected using avalanche photodiode.  
(ii) Explain how optical cables are used in data communication.

15. (a) (i) Explain the operation of facsimile machine.  
(ii) Explain the operation of cordless telephones.

Or

- (b) (i) What is ISDN? Explain about ISDN interfaces.  
(ii) Write short notes on ISDN signals and ISDN frame format.

Time

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