45074 A

M.Sc. DEGREE EXAMINATION, APRIL 2015.

Fourth Semester

Physics

Paper IV — ELECTRONICS – II (ADVANCED COMMUNICATION SYSTEMS)

Time : Three hours Maximum : 75 marks

(No additional sheet will be supplied)

PART A — (5 × 3 = 15 marks)

Answer any FIVE questions

Each question carries 3 marks

Each Answer should not exceed 1 page.

1. What is sampling function? Discuss its properties.

2. What is the difference between Standard FSK and MSK? What is the advantage of MSK?

3. Explain the ISDN physical layer protocol.

4. Explain the working of CSMA.

5. Explain the principle of light propagation through fiber optic cable.

6. What is Numerical Aperture in Optical Fibers? Explain.

7. Explain atmospheric refraction of Radio Waves.

8. Explain different INSAT satellites and their uses.

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each Answer should not exceed 6 pages.

9. (a) Explain the working of differential PCM using a diagram.

   (b) Discuss the operation of Adaptive Delta modulation

Or

10. (a) Explain the operation of QPSK using a diagram.

    (b) Explain the Operation of QASK using a diagram.

11. Explain the following types of Computer Networks

(a) Local Area Network (LAN)

(b) Metropolitan Area Network (MAN)

(c) Wide Area Network.

Or

12. Explain the concepts of

(a) ALOHA

(b) Slotted ALOHA and CDMA Techniques.

13. (a) Describe different types of optical fibers.

(b) Write a note on optical fiber configurations.

Or

14. (a) Discuss different laws in optical fiber cables.

(b) Write a note on optical fiber system link budget.

15. With a neat block diagram explain the working of a LOS Microwave Communication system.

Or

16. Derive expression for up-link and down-link budget for Satellite Communication System. List INSAT series of Satellites.

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