45074–B

M.Sc. DEGREE EXAMINATION, APRIL 2018.

Physics

FOURTH SEMESTER

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 Answer carries 3 marks.

Each Answer should not exceed 1 page.

1. Explain sampling theorem.
2. Write about DPSK modulation.
3. Write about on WCDMA.
4. Write about ALOHA.
5. What is intensity modulation? Explain.
6. 'What is receiver sensitivity? Explain.
7. Sketch the digital microwave System block diagram.
8. Define the following:
   (a) Radiation pattern
   (b) Foot print.

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each Answer carries 15 marks.

Each Answer should not exceed 6 pages.

9. (a) With a neat block diagram explain the working of Delta Modulation.
   (b) What is signal to noise ratio? Derive an expression for the same in Delta Modulation.

Or

10. Explain the modulation and demodulation concepts of BPSK with necessary theory.

11. (a) With necessary block diagram explain the working of ISDN network.

(b) Explain characteristics of TDMA.

Or

12. Explain the concepts of CSMA and CDMA.

13. (a) Draw the circuit of an optical transmitter and receiver circuit and explain.

(b) Explain the advanced multiplexing strategies.

Or

14. (a) Write an essay on detection principles of coherent optical fiber systems.

(b) Write a note on multi carrier systems.

15. (a) Write a note on different propagation modes in the troposphere.

(b) Explain the working of a digital microwave system.

Or

16. (a) Derive up link and down link budget for a satellite system.

(b) Write a note of INSAT communication satellites.

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