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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

COMMUNICATION ENGINEERING

[Time: 3 hours

(Maximum marks: 100)

PART — A

(Maximum marks: 10)

Marks

- I Answer all questions in one or two sentences. Each question carries 2 marks.
 - 1. Define smart antenna.
 - 2. State sampling theorem.
 - 3. Define signal to noise ratio.
 - 4. State the need of limiter in FM receivers.
 - 5. Draw the frequency spectrum of DSBSC wave.

 $(5 \times 2 = 10)$

PART — B

(Maximum marks: 30)

- II Answer any five of the following questions. Each question carries 6 marks.
 - 1. Explain different layers of ionosphere.
 - 2. Explain the working of parabolic antenna.
 - 3. State any four needs for modulation.
 - 4. Illustrate pulse amplitude modulation.
 - 5. Draw the block diagram of Armstrong FM transmitter.
 - 6. Compare AM and FM receivers.
 - 7. Explain simple AGC with circuit diagram.

 $(5 \times 6 = 30)$



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Marks PART — C (Maximum marks: 60) (Answer one full question from each unit. Each full question carries 15 marks.) Unit — I III Explain different types of wave propagation. 9 (b) Describe MANET and list its applications. 6 IV Define the terms: (i) Critical frequency (ii) Maximum Usable Frequency (iii) Skip distance 9 (b) Explain folded dipole antenna. 6 Unit — II (a) Derive the expression for amplitude modulated wave. 8 Explain different digital carrier modulation schemes with necessary wave forms. 7 OR VI With neat diagram explain the working of balanced modulator. 8 Explain pulse code modulation. 7 Unit — III VII (a) Draw and explain the block diagram of AM transmitter. 8 (b) Explain pre-emphasis and de-emphasis. 7 VIII Explain different types of noise affects in communication system. (a) 7 (b) Explain the working of direct FM transmitter with block diagram. 8 Unit — IV IX Draw the block diagram of super heterodyne receiver and explain the function of each block. 9 (b) Define: (i) Fidelity (ii) Noise figure 6 OR X (a) Draw and explain the block diagram of FM receiver. 9 (b) Explain the working of envelop detector with diagram. 6