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C09–EC–304

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BOARD DIPLOMA EXAMINATION, (C–09)

SEPTEMBER/OCTOBER - 2020

DECE—THIRD SEMESTER EXAMINATION

COMMUNICATION ENGINEERING

Time : 3 hours] [*Total Marks* : 80

PART—A 3×10=30

Instructions : (1) Answer **all** questions.

(2) Each question carries **three** marks.

(3) Answer should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Classify various types of continuous wave modulation.

2. Define the terms noise figure and noise temperature.

3. What are the effects of overmodulation?

4. List any three merits of frequency modulation over amplitude modulation.

5. List the advantages of DSB-SC.

6. Define fidelity and selectivity of a radio receiver.

7. Make any three comparisons of AM and FM receivers.

8. What is image frequency in a radio receiver?

9. Define reflection coefficient and standing wave ratio of a transmission line.

10. Define skip distance.

PART—B

10×5=50

Instructions : (1) Answer *any* **five** questions.

(2) Each question carries **ten** marks.

(3) Answers should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. Explain the relationship among channel bandwidth, baseband bandwidth and transmission time.

12. *(a)* Write the frequency spectrum used for radio communication.

(b) Mention the applications of different frequencies in the spectrum.

13. Derive the time domain equation for amplitude modulated signal and draw the waveform.

14. Explain frequency division multiplexing with neat sketch.

15. Draw the block diagram of superheterodyne receiver and explain its operation.

16. Draw the block diagram of Armstrong frequency modulation transmitter and explain its working.

17. *(a)* Explain different layers of ionosphere.

(b) Explain vertical and horizontal of polarizations.

18. Describe the space wave propagation of electronic magnetic waves.

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