C16-EC–304

6235

BOARD DIPLOMA EXAMINATION, (C-16)

JUNE/JULY—2022

DECE - THIRD SEMESTER EXAMINATION

ANALOG AND DIGITAL COMMUNICATION SYSTEMS

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

PART—A 3×10=30

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

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

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

1. Define periodic and non-periodic signals.

2. Define modulation index of AM signal.

3. Classify different types of noise.

4. Define information capacity of a channel.

5. Define *(a)* FSK and *(b)* PSK.

6. State the need for digital modulation.

7. List any three specifications of transmitters.

8. State the need for AVC (AGC) in radio receivers.

9. List any three advantages of TDM.

10. List different types of modems.

*

PART—B

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

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

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

11. *(a)* Explain the need for DSB-SC and SSB-SC modulations. 6

(b) Define over modulation and list its effects. 4

12. *(a)* Explain time domain and frequency domain signals. 6

(b) Define pre-emphasis and de-emphasis. 4

13. *(a)* Draw the waveform of FM wave. 4

(b) Draw the time domain and frequency domain waveforms of an AM wave. 4

(c) Define bandwidth. 2

14. *(a)* Write the advantages of digital communication system over analog communication system. 4

(b) Explain about quantization noise. 4

(c) List the different data compression techniques. 2

15. Explain CRC method of error detection with an example. 10

*

16. Draw and explain the block diagram of Armstrong FM transmitter. 10

17. Explain the process of demodulation with envelope detector in AM receiver. 10

18. Explain time division multiplexing with block diagram. 10

★ ★ ★