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C16–EC–**404**

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BOARD DIPLOMA EXAMINATION, (C–16)

MARCH/APRIL—2018

DECE—FOURTH SEMESTER EXAMINATION

DIGITAL COMMUNICATION

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. State sampling theorem.

2. Define quantization and quantization noise.

3. List four digital signal encoding formats.

4. Define the terms bit overhead and overhead efficiency.

5. Mention three merits and demerits of ASK.

6. List the applications of digital modulation techniques.

7. Compare TDM and FDM.

8. State the need for a modem in data communication.

9. Classify different switching methods for switched telephone system.

10. Compare in-band and out-of-band signaling systems for telephony.

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 coding and decoding of Pulse Code Modulation (PCM) with neat block diagram.

12. Explain the Cyclic Redundancy Check (CRC) method of error detection with an example.

13. Explain the Hamming code in error detection and correction with an example.

14. *(a)* Explain the coherent demodulation of FSK with block diagram. 5

(b) Compare ASK, FSK and PSK. 5

15. Explain Quadrature Amplitude Modulation (QAM) with block diagram.

16. Explain Time Division Multiplexing (TDM) with block diagram.

17. Explain Digital Subscriber Line (DSL) and Asymmetrical Digital Subscriber Line (ADSL). 5+5=10

18. Explain the use of Frequency Division Multiplexing (FDM) in telephony.

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