4458

BOARD DIPLOMA EXAMINATION, (C–14)

MARCH/APRIL—2016

DECE—FOURTH SEMESTER EXAMINATION

DIGITAL COMMUNICATIONS

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. What is the significance of 'sampling theorem'?

2. What are the advantages and disadvantages of PAM?

3. Explain the Hamming code.

4. Define overhead efficiency.

5. An analog signal carries 4-bits per signal element. If 1000 signal elements are sent per second, find the bit rate.

6. What are the advantages of BPSK?

7. Write the disadvantages of TDM.

8. What is the need for modem?

9. Define local loop in telephone system.

10. List the different switched telephone systems.

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. *(a)* Compare PAM, PWM and PPM. 6

(b) Explain quantization noise. 4

12. Explain the PCM. Describe the coding and decoding of PCM in detail. 10

13. *(a)* Explain the cyclic redundancy checking (CRC) error detection with an example. 6

(b) Write the advantages of CRC method of error detection. 4

14. *(a)* Explain the non-return to zero (NRZ) encoding technique. 6

(b) List different types of errors during data transmission. 4

15. *(a)* Explain the 8-PSK. 8

(b) What are the advantages of ASK? 2

16. *(a)* Compare ASK, FSK and PSK. 5

(b) What are the application areas of digital modulation techniques? 5

17. Explain the time division multiplexing (TDM) in detail. 10

18. *(a)* Explain the use of FDM in telephony. 6

(b) Explain IP telephony (VOIP). 4

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