C09–EC–403

3469

BOARD DIPLOMA EXAMINATION, (C–09)

MARCH/APRIL—2016

DECE—FOURTH SEMESTER EXAMINATION

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. State the sampling theorem.

2. What are the salient features of QAM?

3. State the need for data compression and list any two compression methods.

4. State the need of a modem in data communication.

5. Write a short note on DSL.

6. What are the basic functions of EPABX?

7. Explain TDM.

8. Define front-to-back ratio and directivity of antenna.

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9. Define decibel and neper.

10. State the need for antenna array.

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)* Define quantization, bit rate and dynamic range of a PCM system. 7

(b) Explain PAM and PWM. 3

12. *(a)* Explain the error detection using parity bit. 4

(b) Explain the error correction using Hamming code. 6

13. Explain frequency-division multiplexing and time-division multiplexing.

14. *(a)* Describe the principle of spread-spectrum communication. 6

(b) Explain direct sequence system. 4

15. *(a)* Explain the topology of the switched telephone network. 6

(b) Explain the use of signal system-7. 4

16. Explain the operation of basic telephone equipment.

17. Explain the constructional features and radiation pattern of yagi antenna. Mention its applications.

18. *(a)* Explain the principle of mobile portable antenna. 6

(b) Explain the terms 'diversity' and 'down tilt' related to cellular-base station antennas. 4

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