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C14-EC-404

**4437**

**BOARD DIPLOMA EXAMINATION, (C-14)  
OCTOBER/NOVEMBER-2018  
DECE – FOURTH SEMESTER EXAMINATION**

**DIGITAL COMMUNICATIONS**

*Time : 3 Hours ]*

[ Total Marks: 80

**PART-A**

3X10=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. State sampling theorem.
2. Define bit rate and dynamic range for PCM system.
- \* 3. Define bit overhead and overhead efficiency.
4. List different types of error detection techniques.
5. State the need for digital modulation.
6. State the importance of constellation diagram.
7. Write any 3 comparisons between TDM and FDM.
8. State the advantages of ISDN.
9. Mention various signals present on local loop telephone line
10. State the advantages of DTMF.

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## PART-B

10X5=50

**Instructions** :

1. Answer any **Five** questions.
2. Each question carries **ten** marks.
3. Answer should be comprehensive and the criterion for valuation is the content but not the length of the answer

11. Explain coding and decoding of a PCM signal
12. Explain the operation of vocoders.
13. Explain CRC method of error detection with an example.
14. Explain ASK modulation and ASK coherent demodulation with block diagram for each.
15. (a) Draw and explain FSK demodulator using PLL.  
(b) Write any two merits and demerits of FSK.
16. Explain time division multiplexing with block diagram
17. Explain asynchronous digital subscriber line (ADSL) technology.
18. Explain signaling system seven (SS7)

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