M. Sc. (Electronics) (Sem. II) (CBCS) Examination

April / May - 2018

Paper - 07 : Digital Communication Systems

Faculty Code : 003

Subject Code : 1152003

Time : $2\frac{1}{2}$ Hours]   [Total Marks : **70**

Instructions :   (1)   All questions carry equal marks.

(2)   Figures on right hand side indicate marks.

1   Answer the following in brief : (any **seven**)   **14**

(1)   Define aperture and acquisition time.

(2)   What is Nyquist sampling rate ?

(3)   Define information capacity.

(4)   Explain M-ary.

(5)   What is the purpose of the signaling bit ?

(6)   What is a guard band? When is a guard band used ?

(7)   What is the purpose of dial tone ?

(8)   What is the difference between TLP and a DLP ?

(9)   List three types of crosstalk.

(10)   What is a local office telephone exchange ?

2   Answer the following : (any **two**)   **14**

(a)   Define and describe frequency-shift keying with diagram.

(b)   What is the purpose of a clock recovery circuit ? When it is used ?

(c)   Describe folded binary codes.

3 Answer the following : (any **two**) **14**

    (a) Define and describe pulse code modulation with diagram.

    (b) Define companding and explain analog companding.

OR

3 Answer the following : (any **two**) **14**

    (a) Describe frame format and operation of the T1 digital carrier system.

    (b) Define codec and give a brief explanation about how they work.

4 Answer the following : (any **two**) **14**

    (a) Describe the operation and basic functions of a standard telephone set.

    (b) Describe loading coils and bridge taps.

    (c) Define interoffice trunks, tandem trunks and tandem switches.

5 Write short notes on : (any **two**) **14**

    (a) Cellular telephone network with basic diagram

    (b) Frequency reuse

    (c) GSM system Architecture

    (d) First generation analog cellular systems.

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