

**(DEC 325)**

**B.Tech. DEGREE EXAMINATION, MAY - 2015**

**(Examination at the end of Third Year)**

**ELECTRONICS & COMMUNICATIONS**

**Paper - V : Digital Communications**

**Time : 3 Hours**

**Maximum Marks : 75**

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*Answer question No.1 compulsory*

*(15)*

*Answer ONE question from each unit*

*(4 × 15 = 60)*

- 1) a) Define Digital communication.
- b) State sampling theorem.
- c) Define PCM.
- d) Define M-ary signalling.
- e) What is QPSK?
- f) What is the use of syndrome?
- g) Define Entropy.
- h) State Shannon's theorem.
- i) Write the Properties of mutual information.
- j) Define minimum distance.
- k) What is cyclic code?
- l) List the Advantages of convolution codes.
- m) What is ISI?

**UNIT - I**

- 2) a) Explain the block diagram of PCM.
- b) Explain the following :

- i) Duo binary signalling
- ii) Modified Duo binary signalling

OR

- 3) a) Explain the block diagram of DM system.
- b) Explain the importance of predictor in DPCM system.

**UNIT - II**

- 4) a) Explain the operation of QPSK transmitter.
- b) Distinguish b/w base band & pass band transmission techniques.

OR

- 5) Derive an expression for the probability error of BFSK.

**UNIT - III**

- 6) a) Explain the measure of information & its properties.
- b) Writes short notes on :
  - i) Entropy
  - ii) Mutual information

OR

- 7) a) Explain the Sharron-Fano coding with an example.
- b) Explain the Huffman-coding with an example.

**UNIT - IV**

- 8) a) Explain the error correction & detection capabilities of linear block codes.
- b) What is meant by forward error correcting codes. State its advantages?

OR

- 9) Explain the time domain & transform domain approaches in convolution encoder with an example.

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