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BIEL-035

DIPLOMA – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (DECVI)

Term-End Examination

00369

December, 2016

BIEL-035 : DIGITAL COMMUNICATION

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any **five** questions. All questions carry equal marks. Missing data, if any may be suitably assumed. Use of scientific calculator is permitted.*

1. Give the basic block diagram of a digital communication system and list its advantages over an analog communication system. 7+7

2. Define the following : $4 \times 3\frac{1}{2} = 14$

(a) Channel Capacity Theorem

(b) Shannon-Hartley Theorem

(c) Hartley's Law

(d) Entropy

3. With a neat block diagram of PCM transmitter and receiver, explain the operation. 14

4. (a) Compare and contrast the following digital modulation techniques : *10*

ASK, FSK and PSK.

(b) Give the application of the above modulation techniques. *4*

5. (a) What are the different line codes that are used for digital communication systems ? *4*

(b) Discuss their classification along with the waveforms. *10*

6. (a) Differentiate between natural and flat-top sampling. *7*

(b) State and explain the sampling theorem and Nyquist rate of sampling. *7*

7. Write short notes on any ***two*** of the following : *2×7=14*

(a) Advantages of TDMA over FDMA

(b) Error Detection and Correction Codes

(c) M-ary Encoding Techniques