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BIEL-035

00742

DIPLOMA–VIEP ECE

Term-End Examination

December, 2011

BIEL-035 : DIGITAL COMMUNICATION

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt **any five** questions in all. Question **No. 1** is **compulsory**. All question carry **equal** marks.*

1. Choose correct answer. **2x7=14**

(a) The Shannon-Hartley law :
  (i) refers to distortion
  (ii) defines bandwidth
  (iii) describes signalling rates
  (iv) refers to noise

(b) Quantizing noise occurs in :
  (i) TDM (ii) PCM
  (iii) FDM (iv) PPM

(c) Digital Modulation Techniques in which the frequency of the carrier is switched between two values is known as :
  (i) ASK (ii) FSK
  (iii) PSK (iv) None

(d) Which of the following multiplexing technique is digital in nature ?
  (i) TDM
  (ii) FDM
  (iii) Both (i) and (ii)
  (iv) None of the above

(e) ASCII is an (a)_____ code.

(i) Parity

(ii) error detection

(iii) error correction

(iv) alphanumeric

(f) The spread spectrum technique uses different carrier frequencies that are modulated by the source signal. At one moment, the signal modulates one carrier frequency; at the next moment, the signal modulates another carrier frequency. This technique is called _____ .

(i) Frequency hopping spread spectrum

(ii) Direct sequence spread spectrum

(iii) P.N Sequence

(iv) None of the above

(g) According to Nyquist theorem, the sampling rate be _____ the highest frequency in the original signal.

(i) Half of the (ii) Same as

(iii) at least twice (iv) at least thrice

2. Draw block diagram of basic digital communication system and explain function of each block. Also give advantages of digital communication. **10+4**

3. (a) Compare PCM and DM. **4**

(b) Define and describe PAM, PWM, PPM. **10**

4. Explain the working of the ASK receiver with help of its block diagram. **14**

5. (a) Explain concept of TDMA and FDMA. **10**

(b) Explain need of Multiplexing in digital communication. **4**

6. (a) Explain Hamming code. State its applications. **7**

(b) What is Baudot code ? State its applications. **7**

7. With the Help of block diagram, explain working principle of Frequency hope spread spectrum. **14**

8. Write Short Notes on (***any Four***) **3.5x4**

(a) Entropy

(b) Companding

(c) M-ary encoding

(d) Line coding

(e) WDM

(f) Application of spread spectrum.
