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BICS-034

00326

DIPLOMA VIEP COMPUTER SCIENCE AND ENGINEERING

Term-End Examination

June, 2013

BICS-034 : PRINCIPLES OF COMMUNICATION ENGINEERING

Time : 2 hours *Maximum Marks : 70*

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

Choose the correct answer. **7x2=14**

1. (a) Amplitude modulation is the process of :

(i) Superimposing a low frequency on a high frequency.

(ii) Superimposing a high frequency on a low frequency.

(iii) Carrier Interruption

(iv) Frequency shift and phase shift

(b) Both FM (Frequency Modulation) and PM (Phase Modulation) are which type of modulation ?

(i) Amplitude

(ii) Phase

(iii) Frequency

(iv) Angle

(c) The ratio of the peak modulating signal voltage to the peak carrier voltage is referred to as :

(i) The voltage ratio
(ii) Decibels
(iii) Modulation index
(iv) Mix factor

(d) A pre-emphasis circuit is a :

(i) Low pass filter
(ii) High pass filter
(iii) Phase shifter
(iv) Band pass filter

(e) Selectivity is the ability of a receiver to :

(i) pick up weak signals
(ii) pick up strong signals
(iii) separate signals having different frequencies
(iv) mix signals of different frequencies

(f) The desirable SWR of a transmission line is :

(i) 0
(ii) 1
(iii) Infinity (∞)
(iv) Any value

(g) An antenna that transmits or receives equally well in all directions is :

(i) Omnidirectional
(ii) Bidirectional
(iii) Unidirectional
(iv) Quasidirectional

2. (a) What is modulation and why it is needed ? 7

(b) Discuss various types of Electronics Communication Systems. 7

3. Derive an expression for AM wave and also sketch the wave form of an AM wave, then derive equation for modulation index from it. 14

4. (a) Explain the working of FM slope detector. 7

(b) Define the characteristics of AM radio receiver namely, sensitivity, selectivity and fidelity. 7

5. (a) Describe the block diagram of Armstrong FM system. 7

(b) Differentiate between single and double impedance matching stubs. 7

6. Explain the structure, radiation pattern and applications of any one of the following antenna 14

(a) Yagi-Uda Antenna

(b) Microwave Horn Antenna

7. (a) Compare Ionospheric and Ground wave propagation. 7

(b) Explain Duct propagation. 7

8. Write short note on **(Any four)** **4x3½=14**

(a) Bandwidth requirement in FM

(b) Principle of heterodyning

(c) Antenna Gain

(d) Polarization

(e) Maximum usable frequency

(f) Deviation Ratio