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BICS-034

DIPLOMA – VIEP – COMPUTER SCIENCE AND ENGINEERING (DCSVI)

Term-End Examination

00656

June, 2016

BICS-034 : PRINCIPLES OF COMMUNICATION ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions. Question no.* ***1*** *is* ***compulsory****. Each question carries equal marks.*

1. Choose the correct answer. *7×2=14*

(a) An agreed-upon format for transmitting data between two devices is called

(i) modes

(ii) prototype

(iii) protocol

(iv) protopology

(b) In a communication system, noise is most likely to affect the signal

(i) at the transmitter

(ii) in the channel

(iii) at the destination

(iv) in the information source

(c) Amplitude Modulation is used for broadcasting because

(i) it is more noise immune

(ii) it requires less transmitting power

(iii) its use avoids receiver complexity

(iv) it provides necessary bandwidth for high fidelity

(d) Communication in both directions, but one direction at a time, is known as

(i) Half Duplex

(ii) Simplex

(iii) Full Duplex

(iv) Demodulation

(e) In TV transmission, the modulation schemes for Video and Audio are respectively,

(i) FM and AM

(ii) FM and FM

(iii) AM and FM

(iv) AM and AM

(f) The VSWR of an infinite line is

(i) zero

(ii) maximum

(iii) infinity

(iv) one

(g) A shorted quarter wave and an open half wave acts like a

(i) parallel resonant circuit

(ii) series resonant circuit

(iii) tuned resonant circuit

(iv) either series or parallel resonant circuit

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

(b) Draw the block diagram of an FM receiver and explain its working. 7

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

4. (a) Explain the working of a superheterodyne receiver. 7

(b) What is impedance matching ? Explain the various methods of achieving impedance matching. 7

5. (a) Describe the working of a radio detector circuit. 7

(b) Describe various types of losses in transmission lines. 7

6. Describe the structure, radiation pattern and applications of any ***one*** of the following antennae : *14*

   (a) Loop Antenna

   (b) Microwave Dish Antenna

7. (a) What is fading and how does it affect the performance of a communication system ? *7*

   (b) What do you understand by space wave propagation ? *7*

8. Write short notes on any ***four*** of the following : $4 \times 3\frac{1}{2} = 14$

   (a) Modulated Transistor Amplifier

   (b) Pre-emphasis and De-emphasis

   (c) Maximum Deviation Ratio

   (d) Virtual Height

   (e) Polarization

   (f) Antenna Gain