No. of Printed Pages : 4

BICS-034

DIPLOMA – VIEP – COMPUTER SCIENCE AND ENGINEERING (DCSVI)

00033

Term-End Examination

December, 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) In the communication system, noise is most likely to affect the signal

(i) at the transmitter

(ii) in the channel

(iii) in the information source

(iv) at the destination

(b) The modulation index of an AM wave is changed from 0 to 1. The transmitted power will be

(i) unchanged

(ii) halved

(iii) doubled

(iv) increased by 50 percent

(c) For the transmission-line load matching over a range of frequencies, it is best to use a

(i) balun

(ii) broadband directional coupler

(iii) double stub

(iv) single stub of adjustable position

(d) To couple a coaxial line to a parallel-wire line, it is best to use a

(i) slotted line

(ii) balun

(iii) directional coupler

(iv) quarter-wave transformer

(e) One of the following is ***not*** an omnidirectional antenna :

(i) Half-wave dipole

(ii) Log-periodic

(iii) Discone

(iv) Marconi

(f) Frequencies in the UHF range normally propagate by means of

(i) ground waves

(ii) sky waves

(iii) surface waves

(iv) space waves

(g) When electromagnetic waves travel in free space, only one of the following can happen to them :

(i) Absorption

(ii) Attenuation

(iii) Refraction

(iv) Reflection

2. (a) Define a duplex communication system. Explain the full-duplex and half-duplex systems. 7

(b) Draw the block diagram of a communication system and explain the functions of each block. 7

3. (a) Draw and explain the block diagram of an FM transmitter. 7

(b) Write at least seven differences between Amplitude Modulation and Frequency Modulation. 7

4. (a) What are the various types of Radio receivers and Heterodyne receivers ? 7

(b) What is Phase-Locked Loop (PLL) ? Write its applications. 7

5. (a) Define Standing Wave Ratio (SWR). Explain the implications of SWR on medical applications. 7

(b) Explain in brief Impedance matching stubs. 7

6. (a) Describe the characteristics and applications of a Dipole Antenna. 7

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

7. Write short notes on the following :

(a) FM Detector 5

(b) Loop Antenna 5

(c) Sky Wave Propagation 4