

**DIPLOMA – VIEP – COMPUTER SCIENCE AND  
ENGINEERING (DCSVI)****Term-End Examination****December, 2015****BICS-034 : PRINCIPLES OF COMMUNICATION  
ENGINEERING***Time : 2 hours**Maximum Marks : 70*

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

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1. Choose the correct answer.

$7 \times 2 = 14$

- (a) The type of modulation used for sound in TV transmission is
- (i) AM
  - (ii) FM
  - (iii) PCM
  - (iv) PWM
- (b) A pre-emphasis circuit is
- (i) low pass filter
  - (ii) high pass filter
  - (iii) phase shifter
  - (iv) band pass filter

- (c) A field can exist, if it satisfies
  - (i) Gauss' law
  - (ii) Faraday's law
  - (iii) Coulomb's law
  - (iv) All Maxwell equations
  
- (d) Simultaneous two-way communication is known as
  - (i) Full duplex
  - (ii) Simplex
  - (iii) Half duplex
  - (iv) Bi-communication
  
- (e) Tropospheric scatter is used with frequencies in the following range :
  - (i) HF
  - (ii) UHF
  - (iii) VLF
  - (iv) VHF
  
- (f) An antenna that transmits or receives equally well in all directions is
  - (i) omnidirectional
  - (ii) bidirectional
  - (iii) unidirectional
  - (iv) quasidirectional

- (g) Fidelity of a radio receiver depends on
- (i) RF amplifier
  - (ii) IF amplifier
  - (iii) Audio amplifier
  - (iv) Detector
2. (a) Draw the block diagram of a communication system and explain the functions of each block. 7
- (b) What do you understand by electromagnetic spectrum and its various bands? 7
3. (a) Describe the working of FM slope detector. 7
- (b) Differentiate between single and double impedance matching stubs. 7
4. (a) Define the terms critical frequency and skip distance in detail. 6
- (b) Explain the phenomena of duct propagation. 4
- (c) What is ground wave propagation? 4
5. (a) What functions are performed by an antenna? What do you mean by antenna reciprocity? 8
- (b) Describe various types of losses in transmission lines. 6

6. Explain the structure, radiation pattern and applications of any **one** of the following antennas : 14
- (a) Yagi-Uda Antenna
  - (b) Microwave Horn 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) Polarization
  - (b) Modulation
  - (c) Virtual Height
  - (d) Quarter Wave Transformer
  - (e) Maximum Deviation Ratio
  - (f) Antenna Gain
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