

**DIPLOMA - VIEP - ELECTRONICS AND
COMMUNICATION ENGINEERING (DECVI)**

Term-End Examination

00923

December, 2016

**BIEL-032 : PRINCIPLES OF COMMUNICATION
ENGINEERING**

Time : 2 hours

Maximum Marks : 70

Note : Attempt any five questions. Question no. 1 is compulsory. Use of scientific calculator is permitted.

1. Choose the correct answer.

7×2=14

(a) When the load impedance equals to Z_0 of the line, it means that the load _____ all the power.

(i) reflects

(ii) absorbs

(iii) attenuates

(iv) radiates

- (b) The output of a mixer in a receiver system produces
- (i) the difference between the modulated RF and the local oscillator
 - (ii) the sum of the modulated RF and the local oscillator
 - (iii) an audio signal
 - (iv) the difference and the sum of both the modulated RF and local oscillator frequencies
- (c) Computer to computer communication is
- (i) Simplex
 - (ii) Duplex
 - (iii) Half Duplex
 - (iv) Both Duplex and Half Duplex
- (d) The type of modulation in the TV picture transmission is
- (i) amplitude modulation
 - (ii) phase modulation
 - (iii) frequency modulation
 - (iv) phase or frequency modulation

(e) Which of the following antennas uses a number of varying length parallel elements ?

- (i) Helical antenna
- (ii) Pyramidal horn antenna
- (iii) Corner reflection antenna
- (iv) Yagi uda antenna

(f) What kind of antenna polarization should you use when working with medium and low frequencies ?

- (i) Induction
- (ii) Horizontal
- (iii) Electrical
- (iv) Vertical

(g) Which region of the ionosphere is ionized at all hours of day and night ?

- (i) D
- (ii) E
- (iii) F
- (iv) G

2. (a) Write the principles involved in parabolic reflectors. 7

(b) What is the use of reflector and director in Yagi-Antenna system ? 7

3. (a) Draw the block diagram of AM superheterodyne radio receiver and explain the function of each block. 7
- (b) Explain the concept of pre-emphasis and de-emphasis. 7
4. (a) Explain briefly - about ground wave propagation with a neat sketch. 7
- (b) Mention the various problems associated with sky way mode of propagation. How are these problems overcome ? 7
5. (a) What are the advantages of FM over AM ? 7
- (b) A 5 kW carrier is modulated to a depth of 70%. Calculate the total power in the modulated wave. 7
6. Define any *seven* of the following : 7×2=14
- (a) Modulation
- (b) Sensitivity
- (c) Fidelity of a radio receiver
- (d) Frequency deviation
- (e) Critical frequency
- (f) Skip distance
- (g) Fidelity
- (h) Antenna gain
- (i) Directivity

7. Write short notes on any *two* of the following : **2×7=14**

- (a) Loop Antenna
 - (b) Types of Electronic Communication
 - (c) Need of AGC
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