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BIEL-032

DIPLOMA – VIEP – ELECTRONICS AND COMMUNICATION ENGINEERING (DECVI)

Term-End Examination

00306

June, 2016

BIEL-032 : PRINCIPLES OF COMMUNICATION ENGINEERING

Time : 2 hours *Maximum Marks : 70*

Note : *Attempt any* ***five*** *questions. Question no.* ***1*** *is* ***compulsory.***

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

(a) Which is the function of a radio receiver ?

(i) Modulates an RF signal

(ii) Radiates an RF signal

(iii) Demodulates an RF signal

(iv) Generates an RF signal

(b) Which type of wave propagation is useful for communication at low frequencies ?

(i) Ground wave

(ii) Sky wave

(iii) Direct wave

(iv) Skip wave

(c) A line becomes distortionless if

(i) it is properly matched

(ii) it is terminated into Z_0

(iii) LG = CR

(iv) LR = GC

(d) Characteristic impedance of a coaxial cable is

(i) 0 Ω

(ii) 50 Ω

(iii) 377 Ω

(iv) ∞ Ω

(e) A diode can be used as

(i) an oscillator

(ii) an amplifier

(iii) a detector

(iv) a modulator

(f) Communication is a process of

(i) keeping in touch

(ii) broadcasting

(iii) exchanging information

(iv) transmitting information

(g) The bandwidth of Frequency Modulation is

(i) $2(\Delta f + f_m)$

(ii) f_m

(iii) $\Delta f + 2f_m$

(iv) $2\Delta f + f_m$

2. Explain the principle of operation of an FM superheterodyne receiver with a neatly labelled block diagram. *14*

3. (a) Define Sensitivity, Selectivity and Fidelity of an AM radio receiver. *9*

(b) What is meant by Automatic Gain Control (AGC) ? *5*

4. (a) A lossless transmission line is terminated in a load which reflects a part of the incident power. The measured VSWR is 2. Find the percentage of the power that is reflected back. *8*

(b) Why is double stub matching preferred over single stub matching ? *6*

5. (a) Explain how ducts can be used for microwave propagation. *10*

(b) Define critical frequency. *4*

6. (a) What do you mean by Polarization ? *4*

(b) Mention the applications of the following antennas : *2×5=10*

(i) Horn antenna

(ii) Dish antenna

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

(a) Slope Detector

(b) Skip Distance

(c) Duct Propagation

(d) PLL

(e) Types of Electronic Communication