KNT/KW/16/5186

Bachelor of Science (B.Sc.) Semester–V (C.B.S.) Examination

ELECTRONIC COMMUNICATION

(Electronics)

Paper–1

Time : Three Hours] [Maximum Marks : 50

N.B. :— (1) **All** questions are compulsory and carry equal marks.

(2) Draw neat and well labelled diagram wherever necessary.

1. **EITHER**

(A) What is the need of modulation ? List the types of modulation and explain any one of them in detail. 3+1+6

OR

(B) With the help of block diagram, explain the functions of transmitter and receiver of electronic communication system. 5+5

2. **EITHER**

(A) Explain the role of ionosphere in communication system. Explain the classification of antenna on the basis of frequency. 5+5

OR

(B) Define the following terms :

(i) Directive gain

(ii) Radiation resistance

(iii) Antenna loss

(iv) Antenna efficiency

(v) Power gain.

Sketch the radiation pattern of different types of antenna. 5+5

3. **EITHER**

(A) With the help of block diagram, explain FSK modulator and demodulator. 10

OR

(B) Give the difference between parallel and serial transmission. Explain Synchronous and Asynchronous data transmission. Give their advantages and disadvantages. 4+4+2

4. **EITHER**

(A) Explain fiber optic based communication system. Define the following terms :

(i) Acceptance angle

(ii) Numerical aperture. 8+2

OR

(B) Explain the concept of cellular telephone system and write its advantages. Explain the different components of cellular telephone system. 10

5. Solve any **ten** :

(A) Compare frequency modulation and phase modulation.

(B) What do you mean by duplex communication ?

(C) Calculate the frequency of a 2 m signal.

(D) What is meant by propagation of EM wave ?

(E) What is the use of Repeater in Communication ?

(F) Draw the radiation pattern of half wave dipole antenna.

(G) State the Shannon Law.

(H) Write names of different codes used in data communication.

(I) What is the unit of measuring speed of data rate ?

(J) What is FAX ?

(K) Draw the basic structure of an optical fibre.

(L) State two applications of FOC. 1×10