NKT/KS/17/5186

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

ELECTRONICS

(Electronic Communication)

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 diagrams wherever necessary.

EITHER

1. (A) Explain different types of Electronic Communication with suitable example. 10

OR

(B) What is Modulation ? Explain the need of modulation. Describe the process of amplitude modulation. 1+3+6

EITHER

2. (A) Explain Ground wave propagation of communication signal. Explain the basic process of satellite communication. 5+5

OR

(B) List different types of antennas. Define the terms related to antenna : Directive gain, Radiation resistance, Antenna loss, Antenna efficiency, Power gain.

Explain the role of reflectors in antenna. 2+5+3

EITHER

3. (A) Draw the block diagram of Digital Communication system and explain the function of each block in brief. Give the difference between serial and parallel data communication. 6+4

OR

(B) State Shannon theorem of Information theory. Find the maximum channel capacity, with a bandwidth 3100 Hz and S/N ratio of 30 dB. Explain FSK technique of digital transmission. 2+3+5

EITHER

4. (A) Give the construction of optical fiber and explain its types. Explain basic optical fiber communication system with suitable diagram. 5+5

OR

(B) What is Fax system ? State its uses. Draw the block diagram of fax machine and explain function of each block. 4+6

5. Solve any **ten** :–

(a) What is transceiver ?

(b) Calculate the wavelength of 4 MHz signal.

(c) State two applications of FM.

(d) What are different layers of ionosphere ?

(e) Determine the length of antenna operating at frequency of 500 kHz.

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

(g) What is synchronous data transmission ?

(h) State the advantages of ASK.

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

(j) State two applications of FOC.

(k) State two advantages of cellular phone.

(l) Define Acceptance angle related to FOC. 1×10