

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