AU – 2873

Seventh Semester B. E. (Electronics and Telecom) Examination

SATELLITE AND OPTICAL FIBRE COMMUNICATION

Paper – 7 XT 04

(USC – 10633)

P. Pages : 3

Time : Three Hours] [Max. Marks : 80

Note : (1) Separate answer book must be used for each section in the subject Geology, Engineering material of civil branch and Separate answer book must be used for Section A and B in Pharmacy and Cosmetic Tech.
(2) All questions carry equal marks.
(3) Answer **Three** questions from Section A and **Three** questions from Section B.
(4) Due credit will be given to neatness and adequate dimensions.
(5) Assume suitable data wherever necessary.
(6) Illustrate your answer wherever necessary with the help of neat sketches.
(7) Use pen of Blue/Black ink/refill only for writing the answer book.

SECTION A

1. (a) Define satellite communication. Give application of satellite communication. 6

   (b) Explain orbital effect in satellite communication system performance. 7

OR

2. (a) Explain different frequency band available for satellite communication. 6

   (b) State and explain :

   (1) MEO

   (2) LEO

   (3) HEO

   (4) GEO. 7

3. (a) Explain atmospheric losses in detail. 6

(b) Explain different types of Antennas used for satellite communication. 7

OR

4. (a) Define and explain :—

(i) Cross link

(ii) Down link

(iii) Uplink 6

(b) Explain details the construction and working of transponder. 7

5. (a) Draw and explain VSAT antenna in brief. 7

(b) What is GPS ? Explain its application. 7

OR

6. (a) Draw and explain VSAT earth station system. 7

(b) With the help of schematic diagram, Explain the operation of VSAT transmitter and receiver. 7

SECTION B

7. (a) Explain the power flow in optical fiber. 6

(b) What is intramodel dispersion ? Obtain mathematical formulation for rms pulse broadening due to material dispersion. 7

OR

8. (a) Explain non linear scattering losses associated with optical fiber in detail. 6

(b) Define and explain :—

(i) Numerical Aperature (NA)

(ii) Total internal reflection

(iii) Acceptance Angle. 7

9. (a) Comparison between LED and LASER optical sources in detail. 6

(b) Explain the following details :

(i) Bending losses

(ii) Scattering losses

(iii) Absorption losses. 7

OR

10. (a) Define :

(i) Specific Detectivity

(ii) Detectivity

(iii) Noise equivalent power. 6

(b) Explain the double heterojunction LED structure and explain its advantages. 7

11. (a) Explain wavelength multiplexing and optical switches. 7

(b) Explain the following :

(i) Photo conductive

(ii) Photo transistor. 7

OR

12. (a) Define :

(i) Responsivity of a photodetector.

(ii) Quantum efficiency. 7

(b) Explain in detail optical transmitter and receiver. 7