

6TH SEM/ECE/EEE/ELECTRICAL(INST & CTRL)/ETC/ 2022(S)

Th1 ADVANCED COMMUNICATION ENGINEERING

Full Marks: 80

Time- 3 Hrs

Answer any five Questions including Q No.1& 2
Figures in the right-hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Define doppler effect.
 - b. Write the difference between duplexer and circulator.
 - c. Write Kepler's laws of planetary motion (any **TWO**).
 - d. What are transponder and crosslink in satellite communication?
 - e. Define critical angle and acceptance angle of an optical fibre.
 - f. What do you mean by step index and graded index optical fibre?
 - g. Define space and time switching.
 - h. Define MODEM and draw its simplified block diagram.
 - i. Differentiate between fixed and dynamic channel assignment strategies.
 - j. What do you mean by cell splitting and cell sectoring?

2. Answer **Any Six** Questions 6 x 5
 - a. Derive the range equation and briefly explain different performance factors of RADAR.
 - b. Draw the block diagram of MTI RADAR and explain its working.
 - c. Explain time division multiple access (TDMA) and write its advantages and disadvantages.
 - d. Describe the construction and working of a PIN diode.
 - e. Explain different types of losses in optical fibre.
 - f. What is the difference between PBX and EPABX? How does a PABX system work?
 - g. With neat block diagram explain the architecture of GPRS system.

3. Explain the working of pulsed radar system with the help of its block diagram. 10
4. Describe different satellite orbital pattern (LEO, MEO, GEO) and compare these patterns. 10
5. Describe the working of optical communication system with the help of its block diagram. 10
6. With neat block diagram explain the Architecture of GSM System. 10
7. Write short notes on any **TWO** 10
 - I. LASER
 - II. GPS
 - III. VSAT