

Reg. No .....

Name .....

24P4028

**M. Sc. DEGREE END SEMESTER EXAMINATION - MARCH 2024**

**SEMESTER 4 - PHYSICS**

**COURSE : 21P4PHYT15EL - COMMUNICATION SYSTEMS**

*(For Regular - 2022 Admission and Supplementary - 2021 Admission)*

Duration : Three Hours

Max. Weights: 30

**PART A**

**Answer any 8 questions**

**Weight: 1**

1. What are single-mode fibres? (E, CO 1)
  2. What is FSK used in digital modulation techniques? (A, CO 1)
  3. What are meridional rays? (A, CO 1)
  4. Explain frequency hopping spread spectrum . (Cr, CO 1)
  5. What do you understand by the frequency reuse factor in wireless communication. (A, CO 1)
  6. What do you understand by satellite uplink frequency? (An, CO 1)
  7. What do you mean by ASK in digital modulation techniques? (A, CO 1)
  8. What does VSAT indicate? (An, CO 1)
  9. Illustrate the basic RADAR system with a block diagram. (An, CO 2)
  10. What is an FMCW radar? (U, CO 2)
- (1 x 8 = 8)**

**PART B**

**Answer any 6 questions**

**Weights: 2**

11. Describe Ballistic Missile Early Warning System. (A, CO 2)
12. What are the features of MEO? (A, CO 1)
13. Brief about bistatic radar. (A, CO 2)
14. Explain the Umbrella cell approach in mobile communication. (A, CO 1)
15. Describe advantages of optical fiber communication. (A, CO 1)
16. What is Time division multiplexing? (A, CO 1)
17. Differentiate hard and soft handoff? (A, CO 1)
18. Write down the features of CDMA in Satellite networking. (Cr)

**(2 x 6 = 12)**

**PART C**

**Answer any 2 questions**

**Weights: 5**

19. Explain the classification of RADAR systems. (R, CO 2)
20. Describe in detail a wide area paging system with diagram. (A, CO 1)
21. Briefly explain the various digital transmission techniques in digital communication. (A, CO 1)
22. Write short note on multimode fibers. (A, CO 1)

**(5 x 2 = 10)**

### OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.
CO 1	To understand the basic principles of different communication systems.	U	1, 2, 3, 4, 5, 6, 7, 8, 12, 14, 15, 16, 17, 20, 21, 22	33
CO 2	To understand the basic principles underlying radar and their applications	An	9, 10, 11, 13, 19	11

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;