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**UNIVERSITY**

(Karunya Institute of Technology & Sciences)

(Declared as Deemed-to-be University under Sec.3 of the UGC Act, 1956)

Reg.No. \_\_\_\_\_\_\_\_\_\_\_\_\_

**End Semester Examination – Nov/Dec - 2016**

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|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **12EC237** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **SATELLITE COMMUNICATION** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Point on the satellite obits closest to the earth is called………… | (1) |
| 2. | What is meant by azimuth angle? | (1) |
| 3. | Define EIRP. | (1) |
| 4. | What is the need for up conversion? | (1) |
| 5. | A satellite cross-link means\_\_\_\_\_\_ | (1) |
| 6. | What is the advantage of frequency reuse? | (1) |
| 7. | Define guard time. | (1) |
| 8. | List the different multiple access techniques. | (1) |
| 9. | What band does VSAT first operate? | (1) |
| 10. | What is the frequency range used in MSAT networks? | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11. | Explain the Kepler’s laws of planetary motion. | (3) |
| 12. | Explain the operation of low noise amplifiers used in earth stations. | (3) |
| 13. | What are the special features of path diversity? | (3) |
| 14. | Write short notes on TDMA and its features? | (3) |
| 15. | Discuss about low orbit satellites. | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. |  | Explain Telemetry, commanding and ranging subsystems in detail. | (15) |
| (OR) | | | |
| 17. | a. | Explain the steps involved in placing a satellite in geostationary orbit. | (8) |
| b. | Discuss the types of satellite orbits along with its merits and demerits. | (7) |
| 18. |  | Explain the antenna system used to receive satellite signals and explain the operation of the receiver with a block diagram. | (15) |
| (OR) | | | |
| 19. |  | Discuss the details of up and down converters with necessary block diagrams. | (15) |
| 20. |  | Draw the block diagram of a basic satellite link and analyze its performance. | (15) |
| (OR) | | | |
| 21. |  | What is interference? Explain different forms of interference sources. | (15) |
| 22. |  | Explain the principle of TDMA with its frame structure and analyze its frame efficiency? | (15) |
| (OR) | | | |
| 23. |  | With suitable schematic diagram, explain the principles of SPADE system. | (15) |
| 24. | a. | Explain about MSAT networks and it applications in detail. | (8) |
| b. | Write short notes on INSAT. | (7) |
| (OR) | | | |
| 25. | a. | Explain the features of INTELSAT with detail specifications. | (8) |
| b. | Explain briefly about INMARSAT. | (7) |

ALL THE BEST