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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 :** | **09EC222/11EC206** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Communication Theory and Systems** | **Max. marks :** | **100** |

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| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Define the term bandwidth. | (1) |
| 2. | Mention the significance of a carrier signal. | (1) |
| 3. | Write the mathematical expression for modulation index of an amplitude modulated wave. | (1) |
| 4. | What is meant by a Narrowband FM. | (1) |
| 5. | Define : Demodulation. | (1) |
| 6. | State the acronym for PLL. | (1) |
| 7. | Define heterodyning. | (1) |
| 8. | Class C amplifiers are used as RF tuned amplifier. True/ False | (1) |
| 9. | Mention any atmospheric interference. | (1) |
| 10. | Define: Signal to Noise ratio | (1) |

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| **PART B(5 X 3= 15 MARKS)** | | |
| 11. | Describe the concepts of baseband and pass band signals. | (3) |
| 12. | Differentiate Narrow band FM and Wideband FM. | (3) |
| 13. | Briefly explain about product modulator. | (3) |
| 14. | State the disadvantages of Tuned Radio frequency receiver. | (3) |
| 15. | Elucidate on Noise Figure. | (3) |

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| **PART C(5 X 15= 75 MARKS)** | | | |
| 16. |  | Explain in detail the block diagram of communication system. | (15) |
| (OR) | | | |
| 17. |  | What is modulation? Explain in detail, why modulation is absolutely essential for transmissions. Discuss on various types of modulation. | (15) |
| 18. |  | Define and Derive the expression for Amplitude modulation and it’s Power calculation with necessary waveforms. | (15) |
| (OR) | | | |
| 19. |  | Define and Derive the mathematical expression for FM signal. | (15) |
| 20. |  | Explain the working of a Balanced modulator. | (15) |
| (OR) | | | |
| 21. |  | With neat diagram explain about the Balanced slope detector. | (15) |
| 22. |  | With a neat block diagram, explain the functioning of a Super heterodyne receiver | (15) |
| (OR) | | | |
| 23. |  | Explain in detail about Pre-emphasis and De-emphasis. | (15) |
| 24. |  | Derive the expression for signal to noise power ratio for SSB-SC AM system. | (15) |
| (OR) | | | |
| 25. |  | Explain in detail about the various types of Noise. Mention any two in detail. | (15) |

ALL THE BEST