****

**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**

|  |  |  |  |
| --- | --- | --- | --- |
|  |  | **Semester :** | **2016-17 ODD** |
| **Code :** | **11EC208** | **Duration :** | **3 hrs** |
| **Sub. Name :** | **Linear Integrated Circuits and Applications** | **Max. marks :** | **100** |

|  |  |  |
| --- | --- | --- |
| **Q. No.** | **Questions** | **Marks** |
| **PART-A(10X1=10 MARKS)** | | |
| 1. | Define Integrated circuits. | (1) |
| 2. | What is the purpose of oxidation? | (1) |
| 3. | Write down the applications of op-amp. | (1) |
| 4. | What are the limitations of basic differentiator circuit? | (1) |
| 5. | The output wave form of Astable multivibrator is\_\_\_\_\_\_\_\_\_ | (1) |
| 6. | What is the function of regulator? | (1) |
| 7. | What are the demerits of passive filters? | (1) |
| 8. | Draw the frequency response of high pass filter. | (1) |
| 9. | What are the advantages of R-2R ladder DAC over weighted resistor DAC? | (1) |
| 10. | List out direct type ADC. | (1) |

|  |  |  |
| --- | --- | --- |
| **PART B(5 X 3= 15 MARKS)** | | |
| 11 | What are the advantages of integrated circuits? | (3) |
| 12 | What are the applications of comparator? | (3) |
| 13 | Write short notes on series op-amp regulator. | (3) |
| 14 | What are the applications of IC 555? | (3) |
| 15 | Define capture range. | (3) |

|  |  |  |
| --- | --- | --- |
| **PART C (5 X 15= 75 MARKS)** | | |
| 16. | With neat diagrams, explain the various steps involved in the monolithic IC technology fabrication process in detail. | (15) |
|  | (OR) |  |
| 17. | What are the different methods of fabrication of integrated resistors? Explain the same in detail. | (15) |
| 18. | Explain about the operation of Log amplifier and determine its output expression. | (15) |
|  | (OR) |  |
| 19. | Describe the operation of integrator and differentiator circuit using op-amp and determine its output voltage. | (15) |
| 20. | Explain the working of Astable multivibrator using IC 741 and derive an expression for its frequency of oscillation. | (15) |
|  | (OR) |  |
| 21. | With a neat diagram, explain about IC723 general purpose regulator. | (15) |
| 22. | Explain in detail about Low Pass first order with neat circuit diagram and derive its transfer function. | (15) |
|  | (OR) |  |
| 23. | With a neat circuit diagram, explain in detail about the functional block diagram of IC555. | (15) |
| 24. | With a neat block diagram, explain the operation of a phase locked loop. | (15) |
|  | (OR) |  |
| 25. | With the help of a neat block diagram, explain the operation of dual-slope ADC. | (15) |