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**C16-EC-401****6435**

**BOARD DIPLOMA EXAMINATION, (C-16)**  
**OCT/NOV—2018**  
**DECE—FOURTH SEMESTER EXAMINATION**  
**LINEAR IC AND APPLICATIONS**

*Time : 3 hours ]**[ Total Marks : 80***PART—A**

3×10=30

**Instructions :** (1) Answer **all** questions.  
(2) Each question carries **three** marks.  
(3) Answers should be brief and straight to the point and shall not exceed *five* simple sentences.

1. Classify the ICs based on level of integration.
2. Define slew rate and CMRR.
3. List the advantages of IC regulators.
4. List the applications of voltage and current time base generator.
5. Draw the circuit diagram of buffer and scale changer by using op-amp.
6. Draw the pin diagram of 555 IC (8-pin).
7. Draw the circuit diagram of FM demodulator using PLL.
8. List the advantages of instrumentation amplifier.

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9. State the need of D/A convertor.
10. Define the terms monotonicity and settling time of D/A converter.

**PART—B**

10×5=50

**Instructions** : (1) Answer *any five* questions.

(2) Each question carries **ten** marks.

(3) The answer should be comprehensive and the criterion for valuation is the content but not the length of the answer.

11. (a) Distinguish between linear and digital ICs.  
(b) Explain the surface Mount Technology.
12. (a) Draw and explain operation of differential amplifier.  
(b) Explain the operation of fixed negative voltage IC regulator.
13. Draw and explain the working of Bootstrap sweep generator using Op-amp.
14. (a) Explain the working of Op-amp astable multi-vibrator with waveforms.  
(b) Explain the working of Op-amp as a differentiator.
15. Draw and explain the working of mono-stable multi-vibrator using 555 IC.
16. Draw and explain voltage controlled oscillator LM 566.
17. Draw and explain the circuit diagram of D/A conversion using binary weighted resistor.
18. (a) Explain voltage to current convertor.  
(b) Explain the pin out diagram of MAX1112 serial ADC.

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