

## 4609

## BOARD DIPLOMA EXAMINATION, (C-14) OCT/NOV-2018 DAEIE—FIFTH SEMESTER EXAMINATION

## LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

[Total Marks: 80 *Time* : 3 hours

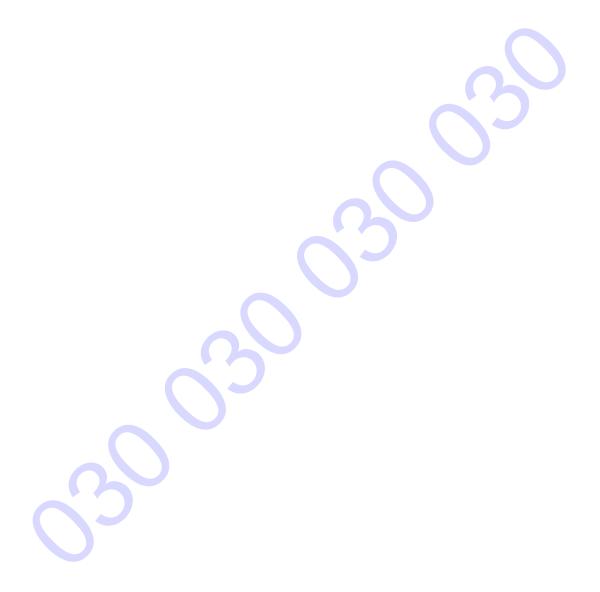
## PART—A

 $3 \times 10 = 30$ 

- **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. State the requirement of an operational amplifier.
  - **2.** Define slew rate.
  - **3.** State the principle of open loop operational amplifier.
  - **4.** Draw the circuit of voltage to current converter.
  - **5.** Draw the ideal and practical frequency response plots for high pass filter(HPF).
  - **6.** State the merits of active filters over passive filter.
  - **7.** Write about the function of tigger and reset pins of 555 IC timer.
  - Write the formula for output frequency of astable multivibrator.
  - **9.** Draw the basic comparator circuit using op-amp.
- **10.** List any three applications of PLL.

PART-B  $10 \times 5 = 50$ 

- **Instructions:** (1) Answer any **five** questions.
  - (2) Each questions carries **ten** marks.
  - (3) Answers should be comprehensive and the criteria for valuation are the content but not the length of the answer.
- 11. Explain the operational of differential amplifier with circuit diagram.
- **12.** Define the trems:
  - (a) Voltage gain (A<sub>v</sub>)
- (b) Output imedance( $Z_0$ )
- (c) Input bias current
- (d) Input offset voltage
- **13.** Explain the operation of summing and difference amplifier with circuit diagram.
- **14.** Explain the operation of instrumentation amplifier with circuit diagram.
- 15. Explain the operation of low pass filter (LPF) using operational amplifier with circuit diagram.
- **16.** Explain the operation of mono-stable multivibrator using 555 IC timer with circuit diagram.
- 17. Explain the operation of Wien-bridge oscillator with circuit diagram.
- **18.** (a) Draw the circuit diagram of Schmitt trigger cricuit using op-amp.
  - (b) Draw the block diagram of 555 IC timer.



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