

Total No. of Questions : 8]

SEAT No. :

PB3613

[6261]-18

[Total No. of Pages : 2

S.E. (Electrical Engineering)

ANALOG AND DIGITAL ELECTRONICS

(2019 Pattern) (Semester- III) (203143)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) *Solve Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Assume Suitable additional data if necessary.*
- 5) *Use of non-programmable calculator is allowed.*

- Q1)** a) Mention the advantages of PLD's. **[4]**
- b) Differentiate between RAM and ROM. **[6]**
- c) With neat diagram explain PAL. Mention its advantages and disadvantages. **[8]**

OR

- Q2)** a) Write a short note on semiconductor memories. **[4]**
- b) What is CPLD? Mention the features of CPLD. **[6]**
- c) With neat diagram explain the detail architecture of FPGA. **[8]**

- Q3)** a) Draw the pin diagram of IC 741 and name the pins. **[3]**
- b) Explain with neat diagram and output waveforms, Op-Amp as a zero crossing detector. **[6]**
- c) Draw and explain V-I converter using operational amplifier. **[8]**

OR

P.T.O.

- Q4)** a) Mention the applications of instrumentation amplifier. [3]
b) With neat diagram explain op-amp as peak detector circuit. [6]
c) Explain generation of sine waveform using OPAMP. Draw the required waveforms. [8]

- Q5)** a) Define filter and mention its type. [4]
b) Draw and explain the three terminal fixed voltage regulator IC. [6]
c) With neat diagram explain astable multivibrator using IC 555. [8]

OR

- Q6)** a) Draw the block diagram of regulated power supply. [4]
b) Explain the internal structure of IC 555 with proper diagram. [6]
c) With neat diagrams analyze first order low pass filter using Op-Amp. [8]

- Q7)** a) Compare HWR and FWR circuits. [3]
b) Explain the working of single-phase full wave centre tapped diode rectifier with pure resistive load. [6]
c) With the help of circuit diagram and relevant waveforms, explain the operation of a 3-phase diode bridge rectifier with resistive load. [8]

OR

- Q8)** a) Define following terms. [3]
i) Form factor
ii) Ripple factor
iii) TUF
b) With relevant diagrams explain half wave diode rectifier with RL load. [6]
c) Explain the working of single-phase full wave diode bridge rectifier with pure resistive load. [8]

