Enroll. No. _____

SILVER OAK COLLEGE OF ENGINEERING & TECHNOLOGY

ADITYA SILVER OAK INSTITUTE OF TECHNOLOGY

BE - SEMESTER–II • MID SEMESTER-I EXAMINATION – SUMMER 2019

SUBJECT: Basic Electronics (3110016) (EE/CE/IT/EC)

DATE: 14-03-2019 TIME:12:00 pm to 01:30 pm TOTAL MARKS:40

Instructions: 1.Q. 1 is compulsory.
2. Figures to the right indicate full marks.
3. Assume suitable data if required.

Q.1* (a) What is Diode approximation [03]

(b) Define Peak Inverse Voltage. State PIV of half wave and full wave rectifiers. [03]

(c) Name the universal gates, Construct all other gates using NAND gates. [04]

Q.2 (a) Draw and explain unregulated power supply system. [06]

(b) Draw and explain V-I characteristics of P-N junction diode [05]

(c) Explain following terms with respect to P-N junction diode [04]
(1) Depletion layer (2) Potential barrier

OR

Q.2 (a) Describe the rectification and working of bridge rectifier circuit with neat circuit diagram. [06]

(b) Draw symbol, truth table of all digital logic gates. [05]

(c) Explain different parameters of Half wave rectifier (1) Ripple factor (2) Transformer utilization factor (3) Rectification Efficiency (4) Irms Vrms [04]

Q.3 (a) A diode having internal resistance of 20 Ω is used for half wave rectification. If the applied voltage V = 50 sin(ω t) and load resistance of 800 Ω . Find: (a) Im, Idc, Irms (b) DC output voltage (c) Efficiency of Rectification. [06]

(b) Explain different types of Clipping circuits. [05]

(c) Explain operation of Zener Diode as voltage regulator. [04]

OR

Q.3 (a) A sinusoidal voltage of peak value of 40 V and frequency 50 Hz is applied at the input of a half wave rectifier, No filter is used. The load resistance is 500 Ω . Diode has Rf = 5 Ω , Rr = ∞. Calculate DC value, rms value of load current, load voltage and rectification efficiency. [06]

(b) Explain different types of Clamping circuits. [05]

(c) Compare zener and avalanche breakdown. [04]