LTS

Roll No. .....

E-136

# ELECTRONIC DEVICES AND CIRCUITS – III

## 3K4-IED-20

**Time : 3 hrs.** **M.M : 100**

***Note :—***

1. *Part 'A' may be attempted in first 6 pages of Answer Sheet.*
   *भाग 'क ' के सभी उत्तर, उत्तर–पुस्तिका के प्रथम छः पृष्ठों में ही करने हैं।*
2. *Part 'B' in rest of the Sheets of Answer Sheet.*
   *भाग 'ख 'के उत्तर, उत्तर–पुस्तिका के अगले शेष पृष्ठों में लिखिये।*
3. *Answers may be given in English or Hindi.*
   *प्रश्नों के उत्तर अंग्रेजी अथवा हिन्दी में दीजिये।*

## *PART - 'A'*

**1. Answer any ten questions :** **(10x2=20)**

(a) What is full form of VCO and PLL.
(b) Draw the symbol of SCR and SUS.
(c) What is Voltage regulation?
(d) Which type of time base genrator is used in electrostatic deflection systems?
(e) What are the two basic modes in which the 555 timer operates?
(f) What is holding current in an SCR?
(g) How does LASCR differ from SCR?
(h) What is the need for voltage regulators?
(i) Why do IC's need small power for their operation?
(j) What is diffusion technique of formation of resistors most widely used?
(k) What are the types of UPS?
(l) Define flyback time.
(m) Define sweep time is saw tooth generator.
(n) What do you mean by clamper?

**2. Answer any five Questions :** **(5x4=20)**

(a) Draw the block diagram of VCO.
(b) Draw the VI characteristics of TRIAC.
(c) Mention the application of LASCR and SCR.
(d) Discuss the princples of shunt voltage regualtors.
(e) Write shorts notes on R-C integrator.
(f) Discuss briefly on dual tracking power supply.

(g) Draw the circuit diagram of constant current generation of linear sweep voltage circuit using OP-amp.

(h) Draw the circuit daigram of astable multivibrator.

## PART- B

**Attempt any three Questions :** **(3x20=60)**

3. (a) Explain the basic working principle of SMPS.
   (b) Describe the various processes used to fabricate IC's.

4. With the help of circuit diagrams explain the working principle of monostable multivibrator circuit. Give its waveforms.

5. (a) Enumerate Various methods which are employed for generating time base waves.
   (b) Explain the method of generation of saw tooth wave. Using charging and discharging of a capacitor

6. Describe the working principle, contruction and V-I characteristics of LASCR.

7. (a) Explain the block diagram of IC 555 timer.
   (b) Determine the peak output voltage for a positive series clipper circuit shown in fig(1). The input signal is sinusoidal of peak value 15V and a barrier Voltage for Silicon diode is 0.7V.

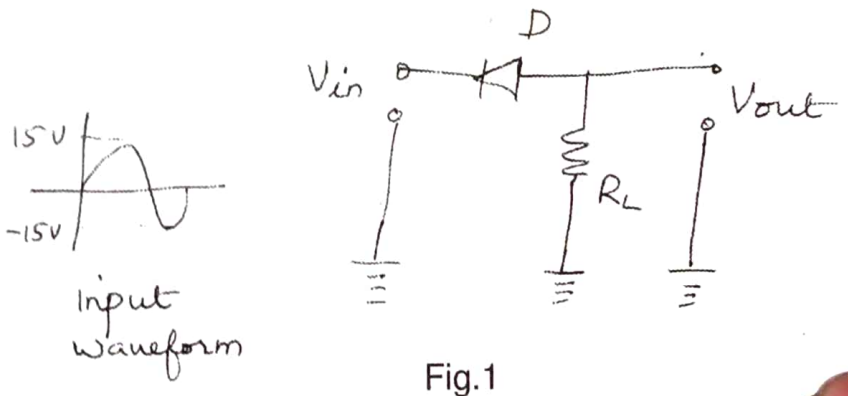


Fig.1