(b) Draw the block diagram of CRO and explain the function of each block in detail. 10

SECTION – D

8. What is LED ? Discuss its principle, construction, working, advantages and disadvantages. Also make comparison between LED and LCD. 20

9. (a) Make a comparison between dynamic scattering and field effect LCD displays. 10

(b) Write short note on fourteen segment display. 10

Roll No. .....

24004

B. Tech. 2nd Semester
(Common for all Branches)
Examination – May, 2017

BASICS OF ELECTRONICS

Paper : ECE-101-F

Time : Three Hours] *[Maximum Marks : 100*

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt ***five*** questions in all, selecting ***one*** question from each Section. Question No. **1** is ***compulsory***. All questions carry equal marks.

1. (a) What is an ideal diode ? 2

(b) Give definition of forbidden energy gap and knee voltage. 4

(c) Define common mode rejection ratio. 3

(d) What is the main difference between amplifier and oscillator ? 2

(e) Discuss the drawback of S-R flip-flop. 2

(f) Write about basic logic gates. 3

(g) Why LED emits light of different colours. 2

(h) Define dot matrix display. 2

SECTION – A

2. (a) What is PN junction diode ? Draw and explain its terminal characteristics. 10

(b) Make a comparison between the following : 10

(i) Intrinsic and extrinsic semiconductors.

(ii) Drift and diffusion currents.

3. (a) Draw the circuit of an R-C coupled amplifier. Draw its gain versus frequency characteristics and indicate cutoff frequency and bandwidth. 10

(b) An amplifier with a negative feedback provides an output voltage of 5 V with an input voltage of 0.2 V. On removal of feedback, it needs only 0.1 V input to give the same output. Determine :

(i) Gain without feedback.

(ii) Gain with feedback.

(iii) Feedback ratio. 10

SECTION – B

4. (a) Describe the principle of operation of a wein bridge oscillator and give the condition for sustained oscillation. 10

(b) Explain use of Op-Amp as a summing, scaling, and average amplifier. 10

5. (a) Draw the pin diagram of IC 741 used as an Op-Amp and explain the function of each pin. 10

(b) Write a short notes on voltage regulator. 10

SECTION – C

6. (a) Realize EX-OR gate using four NAND gates only. 10

(b) Draw and explain the circuit diagram of J-K flip-flop. Give its truth table also. 10

7. (a) Make a comparison between combinational and sequential circuits. 10