Roll No. .....

Total No. of Questions : 6] [Total No. of Printed Pages : 5

EX-73

B.Tech. Ist Semester (CSE, IT & Electronics) Examination, 2022-23

Basic Electronics Engineering

Paper - BE - 105

Time : 3 Hours] **[Maximum Marks : 60**

Note : -Ques. No. 1 is compulsory. Attempt any two parts from Ques. No. 2 to Ques. No. 6.

1. Write short answers :

(i) Define junction capacitances of a diode.

(ii) What is the principle of operation of LED ?

(iii) What is early effect ?

(iv) Define and classify multivibrator circuits.

(v) Classify transducess.

2. (a) Define the following.

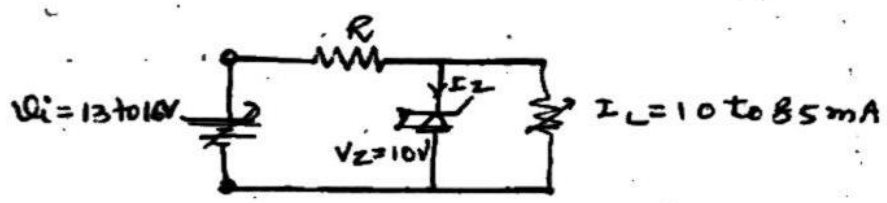
(i) Intrinsic and extrinsic semiconductors.

(ii) Depletion region and barrier potential.

(b) Discuss the working of P-N junction diode in forward and reversebias. Explain how and why breakdown occurs.

(c) Explain the construction and working of point contact diode.

3. (a) Find the value of R in the following circuit of a zener regulator.



Also give the difference between zener and analache break down.

(b) Compare all the rectifier circuits based on.

(i) PIV

(ii) Ripple factor

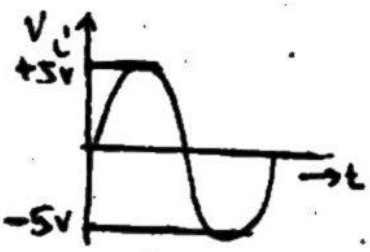
(iii) Efficiency

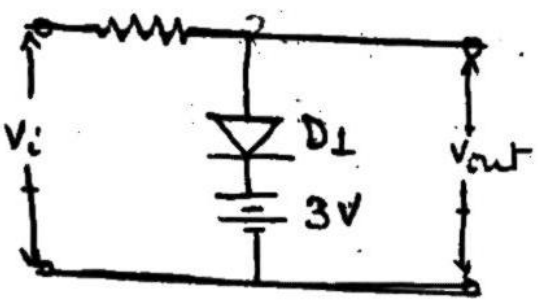
(iv) Output waveform

(v) Circuit

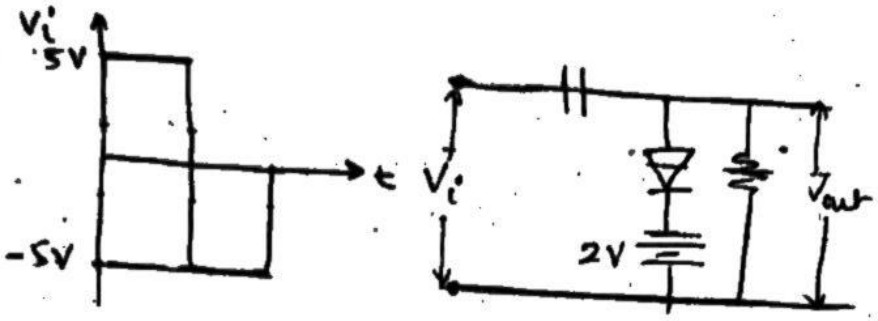
(c) Draw o/p waveform (V_{out}) for the following circuits. When D1 is an ideal diode. Explain the working of the circuits.

(i)





(ii)



4. (a) With the help of input and output characteristics curves of CE configuration in BJI, Explain different region of operation.

(b) Why is biasing required in BJI ? Explain with diagram voltage divider Biasing circuit.

(c) Discuss the working of MOSFET. A/So give its construc tional features.

5. (a) Describe the working of IC 555 time in Astable mode. Give its applications.

(b) Derive the gain formula for op-AMP in inverting and non inverting mode.

(c) Write short note on schmitt trigger circuit.

6. (a) Explain the principle of operation of strain guage. Define guage factor.

(b) Draw the block diagram of CRO and Explain in detail deflection and focussing system.

(c) Explain the working of sampling oscilloscope with suitable block diagram.

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