Total No. of Questions : 6]

Roll No. 2282 300078

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EW-71

B.Tech. Ist Semester (CSE, IT & Electronics) Examination, 2021-22

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 :

EW–71   (1)   P.T.O.

   (i)   Define barrier potential. What is its importance ?

   (ii) What is the basic principle of operation of varactor diode

   (iii) Name three region of operation in BJT. and mention cor responding applications.

   (iv) Give ideal characteristics of OP-AMP.

   (v) Where do we use storage oscilloscope ?

2. (a) Based or energy bound theory of crystal differentiate between metals, semiconductors and insulators.

    (b) With the help of VI characteristics curves. Explain the behaviour of ideal and practical diode.

    (c) Describe junction capacitances of a semiconductor diode.

3. (a) Explain the principle of operation of light emitting diode.

    (b) Compare half wave, full wave and bridge rectifier based on different parameters.

    (c) Write short note on Tunnel diode.

4. (a) Discuss input and output characteristics of CE configura tion and show the affect of Early effect on the character istics curves.

(b) Why is biasing required in BJT circuits ? Discuss voltage divider biasing circuit.

(c) Draw the physical structure of JFET and Explain its operation.

5. (a) What are multivibrators. Give it's classification and applications.

(b) Draw and explain zero crossing detector circuit of OP-AMP in both inverting and non-inverting mode.

(c) Discuss the working of 555 timer in Astable mode.

6. (a) Describe deflection and focussing system of CRO.

(b) Write short note on LVDT.

(c) Explain the working of sampling oscillocope with its block diagram.

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