

Roll No.

Total Pages : 3

BT-ID-18

31022

BASICS OF ELECTRONICS ENGINEERING

Paper : ECE-101 N

Opt. (I)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt five questions in all by selecting at least one question from each unit.

UNIT-I

- 1. (a) Differentiate between active and passive components with suitable examples. Why BJT is an active component ? [8]
- (b) Explain the working of p-n diode in forward and reverse bias with V-I characteristics showing threshold and breakdown voltages. [7]

OR

- 2. (a) How p-n diode can be used as a Switch? [7]
- (b) Differentiate between the zener and avalanche breakdown phenomenon in reverse biased diode. [8]

UNIT-II

- 3. (a) Differentiate between BJT and p-n diode? Which is suitable for amplification? [8]
- (b) Derive the relation between α and β of BJT? [7]

OR

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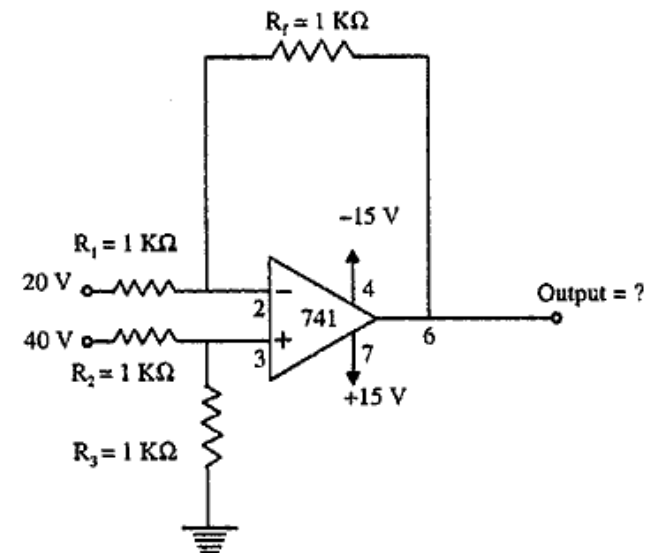
- 4. (a) What is biasing and what is its need in BJT operation? [7]
- (b) Explain the circuits of fixed bias and emitter bias circuits with equations. [8]

UNIT-III

- 5. (a) Why Op-Amp is called as Operational amplifier? How is it different from normal amplifier? [7]
- (b) What are the three modes of operation of Op-Amp? Write their output equations with corresponding circuits. [8]

OR

- 6. (a) Prove that the output equation of Differential Mode of Op-Amp is $V_0 = R_f/R_1(V_+ - V_-)$ [7]
- (b) Find the output of the following Differential mode Op-Amp circuit : http://www.kuonline.in [8]



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UNIT-IV

7. (a) What is MOSFET ? How enhancement MOSFET is different from depletion MOSFET? [7]
- (b) How FET is different from BJT? What are the various types of FET? [8]

OR

8. (a) Explain the operation and V-I characteristics of SCR (silicon controlled rectifier). [8]
- (b) Explain the operation and V-I characteristics of DIAC. [7]

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