Exam. Code: 0905
Sub. Code: 6952

1128
**B.E., First Semester**
**EC-101: Basic Electronics**

Time allowed: 3 Hours

Max. Marks: 50

*NOTE: Attempt five questions in all, selecting atleast two questions from each Unit.*

x-x-x

## UNIT – I

I.  a) With the help of suitable diagrams, differentiate between n-type and p-type extrinsic semiconductor materials.

b) How are semiconductor diodes used for rectification purpose? Explain the working of a half wave rectifier.     (2x5)

II.  a) Describe the construction of an npn transistor.

b) Draw the output characteristics for a common-base transistor amplifier and explain its various regions.     (2x5)

III.  a) Explain the enhancement mode of JFET along with its transfer curves.

b) What are some of the applications of MOSFETs? Explain any one in detail. (2x5)

IV.  Describe the application of an op-amp as a:
   a) Phase shifter
   b) Integrator     (2x5)

## UNIT – II

V.  a) How can a feedback circuit be used as an oscillator? Explain.

b) What is a weighted code? Give an example of a weighted and explain it.     (2x5)

VI.  a) What are universal gates? How are they different from universal gates?

b) Give the characteristic tables of RS, D JK and T flip-flops.     (2x5)

VII.  a) Design a full-adder and implement using logic gates.

b) Differentiate between decoders and demultiplexers.     (2x5)

VIII.  a) What are transducers? List the different classification of transducers with examples each.

b) With the help of waveforms, differentiate AM, FM and PM.     (2x5)

x-x-x