**Roll No……..** **Total No. of Printed Pages: 1**

**Total No. of Questions: [09]**

**B. Tech (EE) (Semester – 3rd)**

**ANALOG ELECTRONIC CIRCUITS**

**Subject Code: BELES1302**

**Paper ID: [18111511]**

**Time: 03 Hours** **Maximum Marks: 60**

**Instruction for candidates:**

1. Section A is compulsory. It consists of 10 parts of two marks each.
2. Section B consist of 5 questions of 5 marks each. The student has to attempt any 4 questions out of it.
3. Section C consist of 3 questions of 10 marks each. The student has to attempt any 2 questions.

**Section – A** **(2 marks each)**

Q1 Attempt the following:

a. Give the effect of feedback on Gain & Bandwidth on the negative amplifier?
b. Define the terms: transconductance, Voltage Gain and Power gain of an amplifier.
c. What is Harmonic distortion in Power amplifiers?
d. What is Barkhausan criterian in Oscillators?
e. What are multistage amplifiers?
f. What is an Oscillator. Classify Oscillators.
g. What is a MOS Capacitor?
h. What are the types of Power Amplifiers?
i. Define Multivibrator. Which are the commonly used multivibrators?
j. Give difference between ADC and DAC using an example for each?

**Section – B** **(5 marks each)**

Q2 Discuss the RC coupled multistage amplifier briefly using suitable circuit diagrams.

Q3 Explain the working principle of Hartley Oscillator? Give its advantages & disadvantages.

Q4 Explain the working of a Differential Amplifier using suitable circuit diagram.

Q5 Describe the working operation of a Bipolar Junction Transistor briefly? Draw its V-I Characteristics.

Q6 Discuss a Triangular wave generator using a suitable diagram.

**Section – C** **(10 marks each)**

Q7 Discuss various Amplifier Models using suitable equivalent circuits and analyze them?

Q8 Explain the working principle and operation of a Field Effect Transistor? Give its advantages, disadvantages and applications?

Q9 Write short note on: Op-Amps for Active filters.