**AKGEC/IAP/FM/02**

**Ajay Kumar Garg Engineering College, Ghaziabad**

**Department of ECE**

**Sessional Test-2**

Course: B.Tech Semester: 3rd

Session: 2017-18 Section: EN-1& EN-2

Subject: Analog & Digital Electronics Sub. Code: REC-309

Max Marks: 50 Time: 2 hour

***Note***: Answer **all** the sections.

**Section-A**

A**. Attempt all the parts. (5x2 =10)**

1. Write down the advantages of negative feedback.
2. Give the applications of Multiplexer.
3. What is Barkhausen Criteria?
4. Differentiate between Combinational & Sequential Circuits.
5. Name two piezoelectric materials used in the construction of crystal oscillator.

**Section-B**

**B. Attempt all the parts. (5x5 = 25)**

6. List 5 characteristics of an amplifier modified by negative feedback.

1. Explain Decoders. Realize a 4\*16 decoder using two 3\*8 decoders.
2. Discuss the working of Wein-Bridge oscillator.
3. What is Priority Encoder? Explain it with its truth table and logic circuit.
4. Discuss how the circuit of Hartley oscillator differs from that of a Colpitts

Oscillator.

**Section-C**

**C. Attempt all the parts. (2x7.5 = 15)**

1. What are flip-flops? Find the characteristic equation of SR, JK, D and T flip flop

with the help of K- Map.

1. Explain Multiplexers with an example. Implement the following Boolean

function using all 4:1 multiplexers.

**F(A,B,C,D,E) = ∑m (0,1,2,3,6,8,9,10,13,15,17,20,24)**