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## **CS-3002-CBGS**

### **B.E., III Semester**

Examination, December 2020

### **Choice Based Grading System (CBGS)**

### **Electronic Devices and Circuits**

*Time : Three Hours*

*Maximum Marks : 70*

**Note:** i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) What is a Zener diode? Explain Zener breakdown and avalanche break down.  
b) Explain a feedback amplifier with the help of block diagram. Define negative and positive feedbacks.
2. Explain how transistor works as an Amplifier.
3. a) Write Barkhausen criterion of oscillations. Explain working of RC phase shift oscillator.  
b) What do you mean by Power amplifiers? Differentiate Class A, Class B and Class C power amplifiers?
4. a) Explain the construction of n channel and p channel FET. Differentiate FET with BJT.  
b) Write the principle of working of an oscillator. Draw and explain Colpitts oscillator.

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5. a) Draw circuit diagram of astable multivibrator and explain its working. Why is it called free running multivibrator.  
b) What is operational amplifier? Define the terms slew rate and CMRR.
  
6. a) Define differential gain, common mode gain and CMRR. Derive the relationship between them.  
b) Describe the operation of positive and negative Clipper with the help of circuit diagram.
  
7. a) What are the advantages of IC technology? Also write its limitations.  
b) Explain the production process of monolithic IC.
  
8. Write short notes on any two of the following:
  - a) Wien bridge oscillator
  - b) LED
  - c) Crystal oscillator
  - d) IC classification

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