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## EE/EX-3004-CBGS

### B.E. III Semester

Examination, June 2020

### Choice Based Grading System (CBGS)

### Analog Electronics

Time : Three Hours

Maximum Marks : 70

- Note:** i) Attempt any five questions out of eight questions.  
ii) All questions carry equal marks.  
iii) Assume suitable data, if required.
1. a) Write some of the difference between p-n junction and p-n junction diode? Explain with a suitable example.  
b) Explain the temperature dependence and break down characteristics of p-n junction diode.
  2. a) Discuss the comparison between varactor diode, Schottky diode and Tunnel Diode.  
b) What do you mean by Transistors? Give a brief classification of all types of transistors.
  3. a) Explain the comparison between CB, CE and CC configuration.  
b) Derive a relation for drain current  $I_d$  for E MOSFET.
  4. a) Explain the concept of feedback in any circuit? Explain it with example.  
b) Define and explain the Barkhausen Criterion. Explain the concept of frequency oscillations.

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5. a) Discuss about the current series and current shunt feedback with suitable circuit.  
b) Write any five differences between the push pull and complementary push pull amplifiers.
6. a) Write short note on De rating curve. Explain the class AB amplifier. Derive its relation as well.  
b) Write short note on Hartley colpitts oscillator and UJT Oscillator circuits.
7. a) Derive expressions for the multi vibrators and square wave generators for the circuits which behave as an OPAMPS.  
b) Derive an expression for the Op-Amp inverting and non-inverting circuits.
8. Write short notes on any four of the following:
  - a) Schmitt Trigger
  - b) Wein Bridge Oscillator
  - c) LED
  - d) FET
  - e) Cascade amplifier
  - f) Boot strapping technique

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