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FIRST SEMESTER

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Roll No.
B. Tech.[CE]
FEB-2019

SUPPLYMENTORY EXAMINATION

CEC 105 BASIC ELECTRONICS AND INSTRUMENTATION

Time: 3 Hours

Max. Marks: 40

Answer ALL Questions
Assume suitable missing data, if any

1. (a) Explain P and N type semiconductors with examples 04
(b) Explain Full wave bridge rectifier with capacitor filter 04
2. (a) Derive the relation between α , β and γ for transistor. 04
(b) Derive the expression for operating point of a fixed bias circuit and explain why it is seldom used 04
3. (a) Explain the following circuits using Op Amp:
(i) Three input Adder (ii) Differential Amplifier 04
(b) With a neat circuit diagram explain the operation of colpitts oscillator 04
4. (a) Design a Full substrator 02
(b) Design a one bit comparator 02
(c) Obtain a minimal expression using K-map and implement with logic gates 04
$$F(A,B,C,D) = \sum m(0,1,4,6,7,9,15) + \sum d(3,5,11,13)$$
5. (a) Explain the working of Colpitt's oscillator 04
(b) Enumerate the transducer selection factors? 04
6. Write short notes on any TWO of the following 2x4=8
(a) Common Base configuration
(b) Demultiplexer
(c) Zener regulator
(d) Principle of oscillations and how they are developed