

II B. Tech I Semester Supplementary Examinations, October/November - 2019
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
 (Com. to CE, ME, CHEM, AME, MM, PE, PCE)

Time: 3 hours

Max. Marks: 70

- Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
 2. Answer **ALL** the question in **Part-A**
 3. Answer any **THREE** Questions from **Part-B**

PART -A

1. a) Distinguish between inductive and capacitive (3M)
- b) What is the function of commutator in a d.c machine (3M)
- c) Mention the major components of a transformer. (4M)
- d) Define slip and slip- speed and give the equation of slip. (4M)
- e) How OP-AMP acts as integrator. (4M)
- f) What are the advantages of feedback amplifier? (4M)

PART -B

2. a) Derive expressions for star to delta and delta to star for a resistive network. (8M)
- b) Two resistors of 40 and 60 ohms in parallel are connected in series with two 0.5 ohm resistors. Find the voltage across the series resistors and across the parallel resistors when 125 volt is applied to the entire circuit. (8M)
3. a) State the methods to control the speed of a d.c motor. (8M)
- b) A 230 V dc shunt motor takes 5A at no load and runs at 1000 rpm. Calculate the speed when load current is 30 A. the armature and field resistances are 0.2 ohm and 230 ohms respectively. (8M)
4. a) Explain the principle and operation of a transformer. (8M)
- b) Obtain the expression for regulation of a transformer. (8M)
5. a) Explain the working principle of a 3-phase induction motor. (8M)
- b) Obtain the regulation by synchronous impedance method. (8M)
6. a) Draw the circuit diagram of Bridge rectifier and explain its operation with the help of wave forms. (8M)
- b) Explain how OP-AMP can act as differentiator. (8M)
7. a) Explain the operation of p-n-p transistor with a neat diagram. (8M)
- b) Explain the frequency response of a CE amplifier (8M)