Code No: R1621012 **R16** SET - 1

II B. Tech I Semester Supplementary Examinations, May - 2019
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
(Com to CE & PE)

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 **FOUR** Questions from **Part-B**

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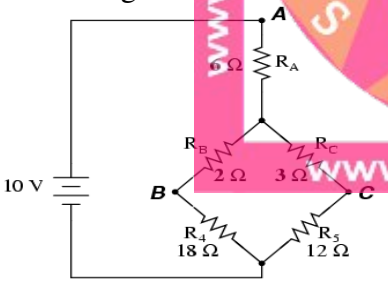
PART –A

1. a) State Kirchhoff's Laws. (2M)
   b) What is the function of starter in a dc motor. (3M)
   c) List out different types of losses that occur in the core f a transformer. (3M)
   d) A 6 pole, 3 phase induction motor is supplied from 50 Hz. Determine its synchronous speed. (2M)
   e) Explain briefly about PN junction diode. (2M)
   f) What is PNP junction transistor? (2M)

PART -B

2. a) Explain in detail about series and parallel combination of resistances, inductances and capacitances. (7M)
   b) Find voltage across 12Ω resistance in the below figure. (7M)



3. a) Derive emf equation of a dc machine (7M)
   b) Explain in detail about principle of operation of dc motor. (7M)

4. a) Discuss the constructional features and operation of a transformer (7M)
   b) A kVA, 200/500 V, 50 Hz, single phase transformer has equivalent resistance referred to primary is 0.15Ω. Find total copper losses on full load and efficiency while supplying full load at 0.9 p.f. lagging. (7M)
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5. a) Draw and explain torque-slip characteristics of a induction motor. (7M)
   b) A 3-phase, 12 pole alternator is coupled to an engine running at 500 rpm. the alternator supplies an induction motor which has a full load speed of 155 rpm. Find the slip and number of poles of the motor. (7M)

6. a) Discuss in detail about half wave rectifier. (7M)
   b) Explain in detail about full bridge rectifier. (7M)

7. a) Discuss briefly about single stage CE Amplifier. (7M)
   b) Describe clearly about frequency response of CE amplifier. (7M)