S. B. Roll. No.....

BASIC ELECTRICAL ENGINEERING
2nd Exam/ECE/MECHATRONIC/0961/Jun'2021
(For 2018 batch onwards)

Duration: 1.15Hrs. **M.Marks:25**

SECTION-A

Q1. Attempt any three questions. **3x5=15**

i. State Kirchhoff's current and voltage laws along with suitable circuit.
ii. State and explain Maximum power transfer theorem.
iii. Two Resistances having resistance of 12Ω & 20Ω are connected in parallel across a 240V d.c. supply. Calculate total resistance of the circuit.
iv. Differentiate between Magnetic and electric circuits.
v. What is a cell? What are the differences between a primary and secondary cell?
vi. Distinguish between A.C. and D.C.
vii. What is power factor? Give its importance.

SECTION-B

Q2. Attempt any one question. **1x10=10**

a. Derive mathematical expression for energy stored in a magnetic field.
b. State Norton's theorem. List the steps used for obtaining Norton's equivalent circuit.
c. Discuss with suitable diagram the principle of operation of Wheatstone bridge and determine the condition for balance.
d. Write a detailed note on following:- i) Solar cell ii) Direct voltage source