Total No. of Printed Pages:2

SUBJECT CODE:- 317
FACULTY OF ENGINEERING AND TECHNOLOGY
F.E(ALL) Examination Nov/Dec 2015
Elements of Electrical Engineering
(Revised)

[Time: Two Hours] **[Max Marks : 40]**

"Please check whether you have got the right question paper."

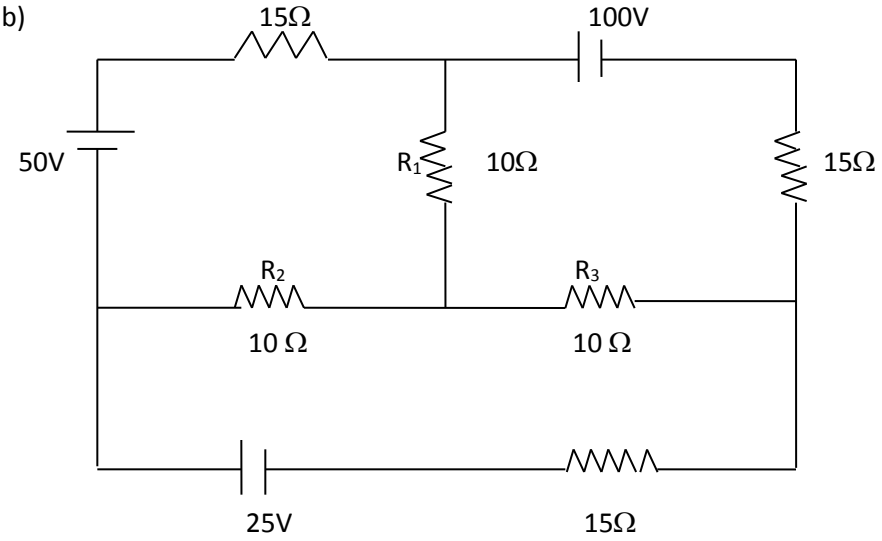
N.B i) Q.No.1 is compulsory.
ii) Attempt any two questions from the remaining questions.
iii) Assume suitable data, if necessary.

Q.1 Solve any five 10

a) State the effect of temperature on i) wood ii) copper
b) Define time constant of capacitor
c) Define temperature coefficient of resistance
d) State the law of division of current.
e) Define reluctance, permeability
f) Define M.M.F and magnetic field strength.
g) Draw the curve for capacitor voltage during charging & discharging.
h) Define self and mutual inductance

Q.2 a) Derive the expression for effect of temperature on R.T.C. 05
b) State and explain the mutually induced E.M.F. 05
c) Derive the charging equation of the capacitor 05

Q.3 a) State and explain the venin's theorem. 05
b) 05



Find branch current using loop current method through R_2=10Ω resistance.

c) Find current flowing through '2Ω' resistance using node analysis. 05

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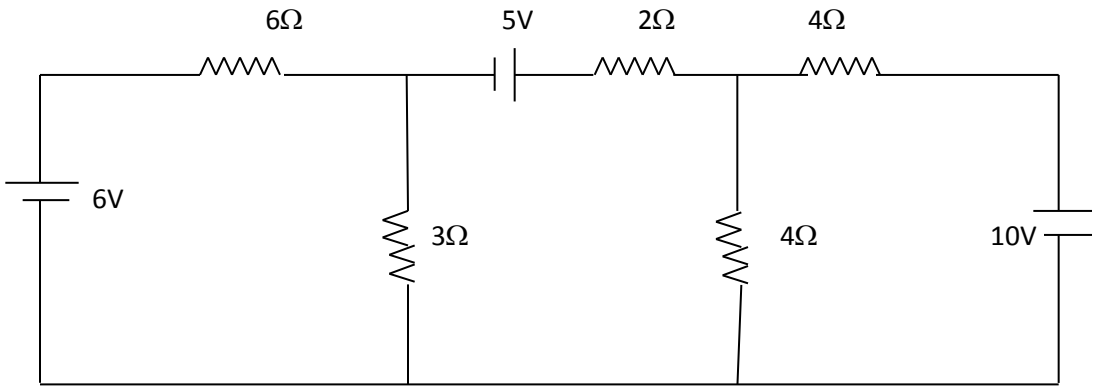
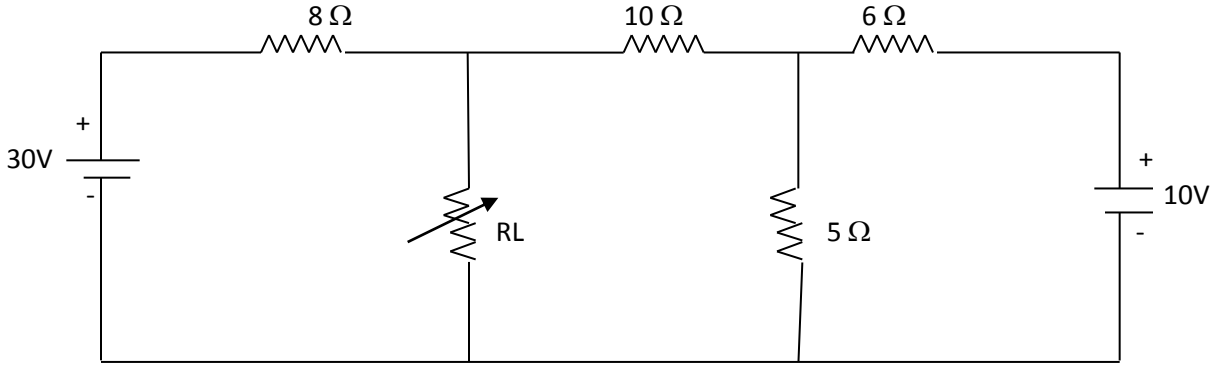
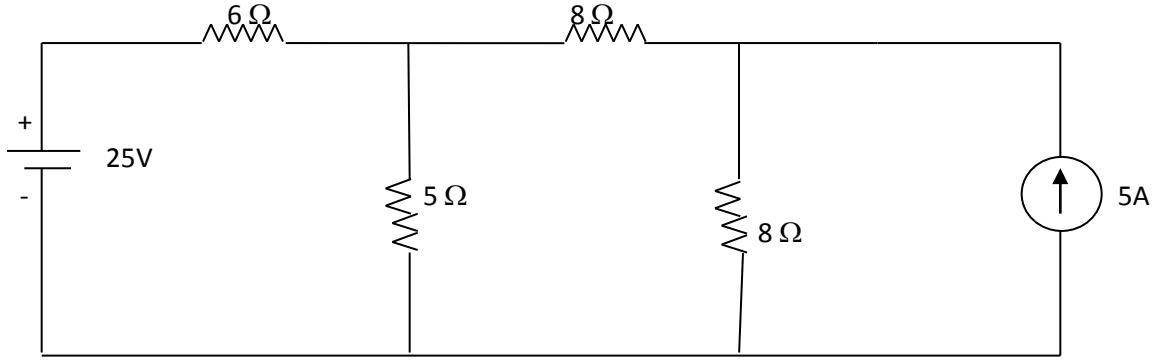


Q.4 a) Find the value of 'R2' such that it absorbs maximum power. Also fined this maximum power. 05



b) State and explain the superposition theorem. 05

c) Using The venin's theorem, calculates current through 5Ω resistor of the circuit show in fig. 05



Q.5 a) Explain the phenomenon of hysteresis & eddy current loss 05

b) Give the, comparison between electrical circuit and magnetic circuit. 05

c) A mild steel ring has a mean circumference of 500mm and uniform cross section area 200mm^2. 05
Relative permeability of the ring is $\mu\gamma$=1200. Calculate;

i) MMF required to produced flux of 200 μ wb.

Ii) If an air gap of '1mm' is cut in the ring find flux produced in the gap if MMF remain same.

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