



Sanjay Ghodawat University, Kolhapur

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

2018-19

EXM/P/09/01

Year and Program: 2018-19
Electrical & Electronics Engg

School of Technology

Department of Electrical Engg
SY B.Tech E & E

Course Code: EET 205

Course Title: Network Analysis

Semester – III

Day and Date Monday
10/06/2019

End Semester Examination
(ESE) May 2019

Time: 3 Hrs.

Max Marks: 100

2-30 to 5-30 P.M.

Instructions:

- 1) All questions are compulsory.
- 2) Assume suitable data wherever necessary.
- 3) Figures to the right indicate full marks.

Q.1 Solve the following.

Marks Bloom's CO
Level

- a) Apply Mesh analysis to find loop currents for the circuit shown in fig 1.a.1

07

L3

CO1

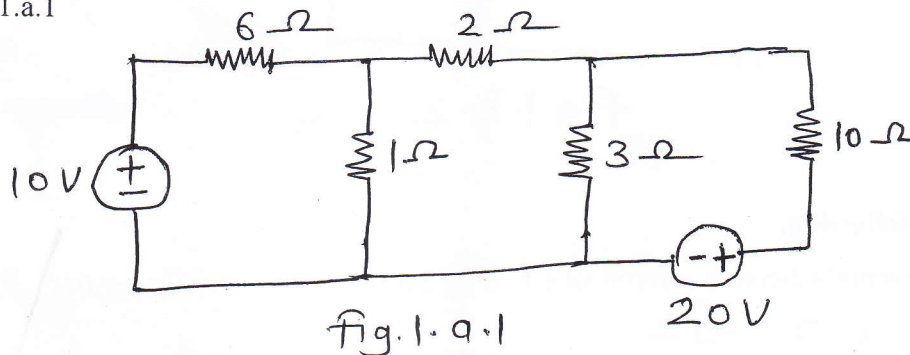


Fig 1.a.1

OR

- a) Apply Nodal analysis to find ' V_x ' for the circuit shown in fig 1.a.2

07

L3

CO1

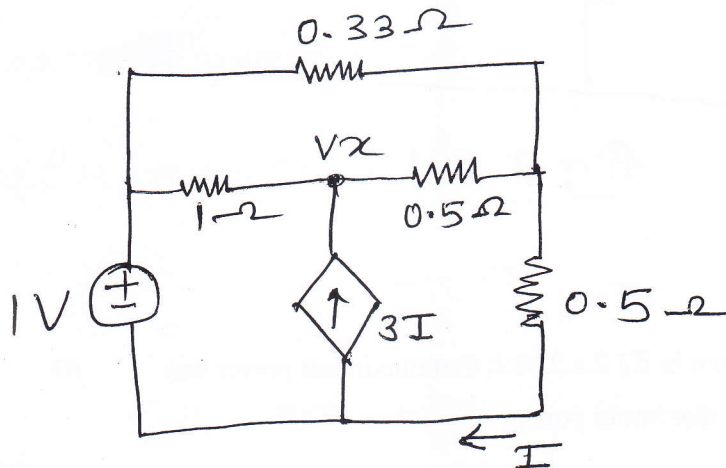
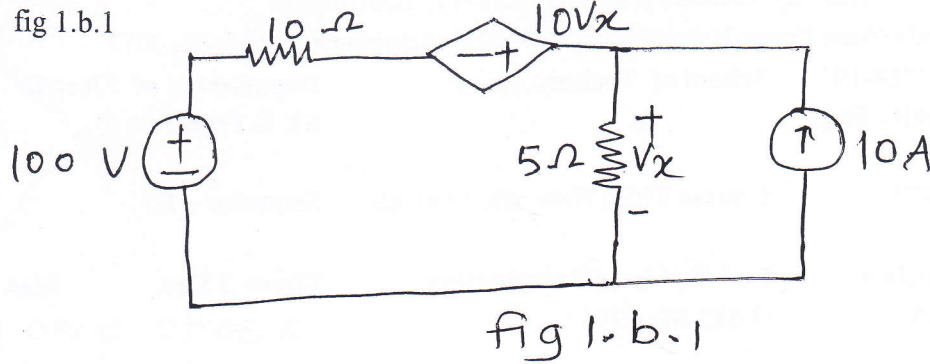


Fig 1.a.2

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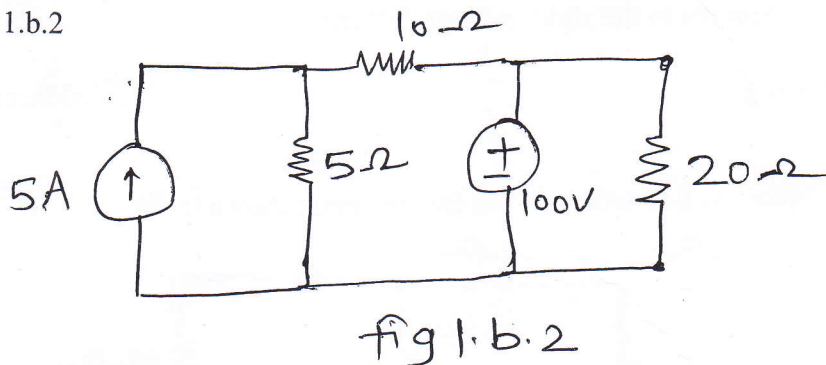
Page 1/6

- b) Find current through 10 ohm resistor by using Superposition theorem in 08 L3 CO2
fig 1.b.1



OR

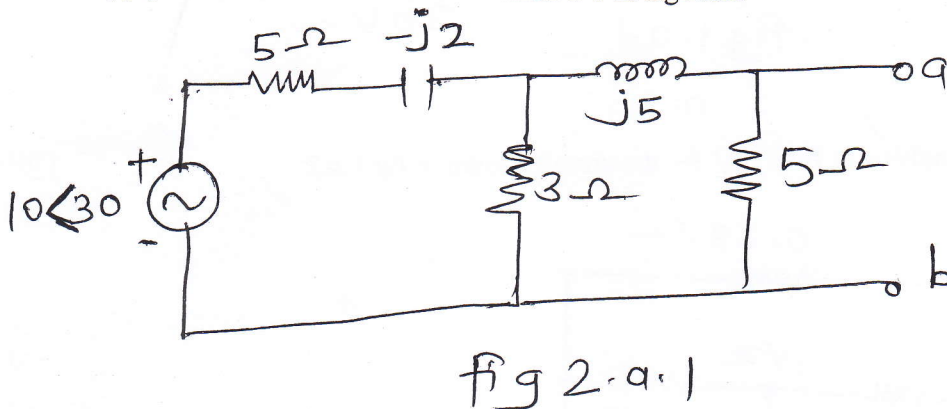
- b) Find current through 20 ohm resistor by using Thevenin's theorem in 08 L3 CO2
fig 1.b.2



Q.2 Solve the following.

- a) Apply Thevenin's theorem at terminal a-b in fig 2.a.1

07 L3 CO3



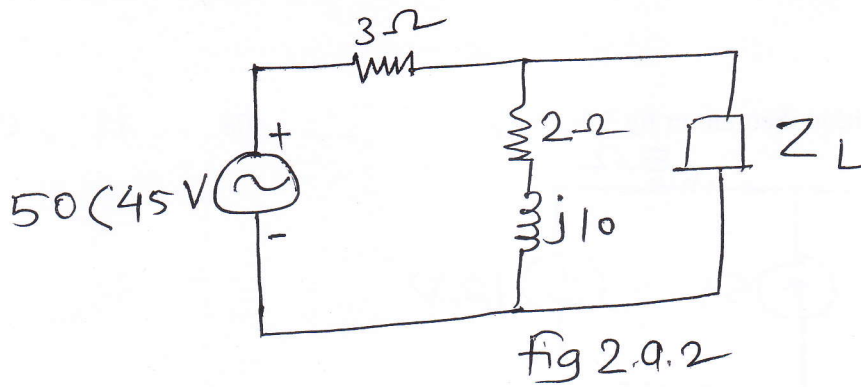
OR

- a) Find the value of Z_L shown in fig 2.a.2 such that maximum power can be transferred to it. Find maximum power.

07 L3 CO3

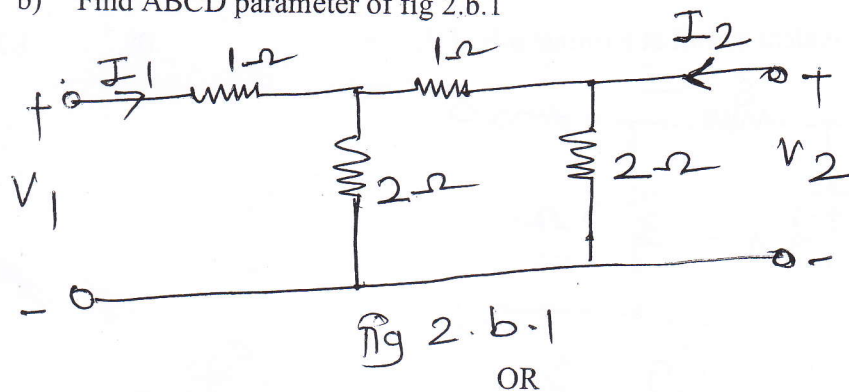
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Page 2/6



b) Find ABCD parameter of fig 2.b.1

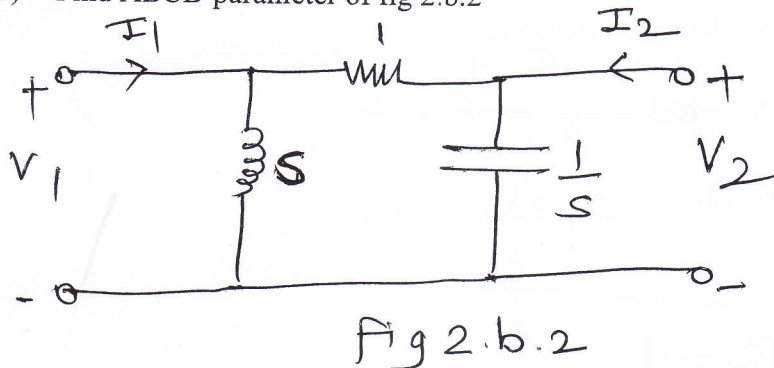
08 L3 CO4



OR

b) Find ABCD parameter of fig 2.b.2

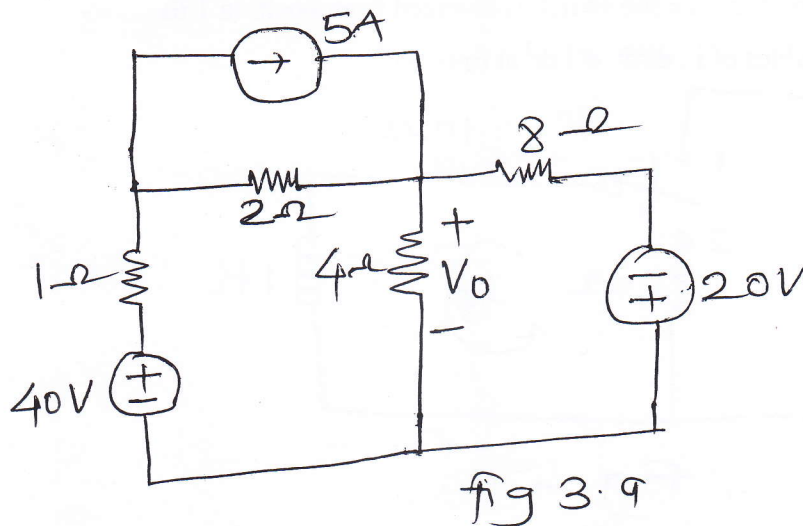
08 L3 CO4



Q.3 Solve any Two

a) Find V_o by using ~~super~~-mesh analysis in fig 3.a

08 L3 CO1



ESE

page 3/6

- b) Find V_o by using superposition theorem in fig 3.b

08

L3

CO2

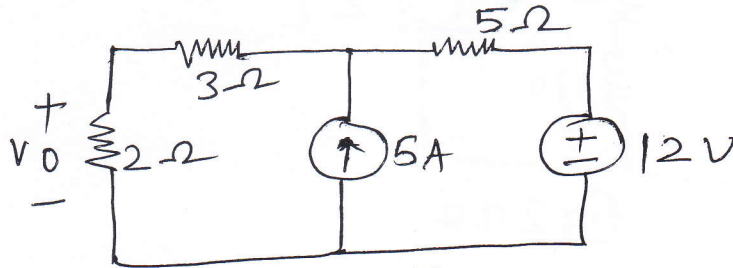


fig 3.b.

- c) Find Thevenin's equivalent circuit at terminal a-b of fig 3.c

08

L3

CO3

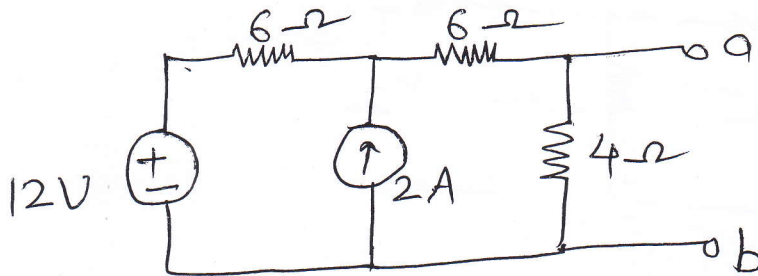


fig 3.c

- d) Determine Y parameters for the circuit shown in fig 3.d

08

L3

CO4

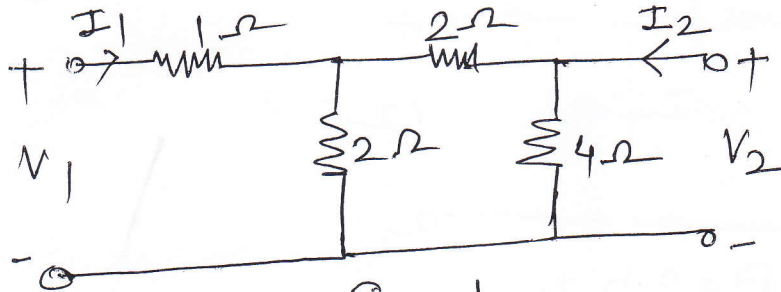


fig 3.d.

Q.4 Solve any Two

- a) In the network shown in fig 4.a the switch is changed from position 1 to 2 at time $t=0$, find values of i , di/dt , d^2i/dt^2 at time $t=0^+$

09

L3

CO5

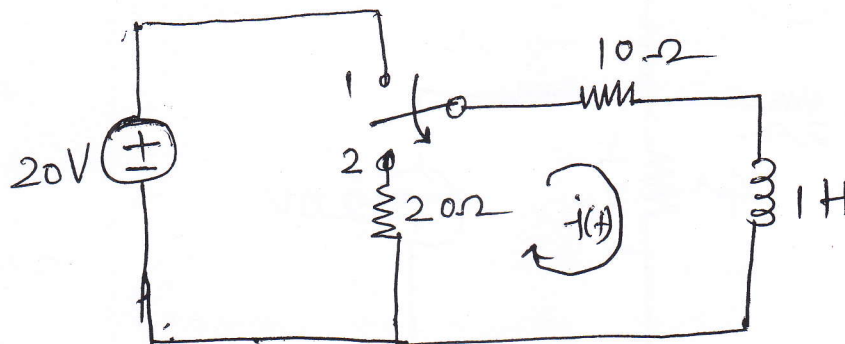
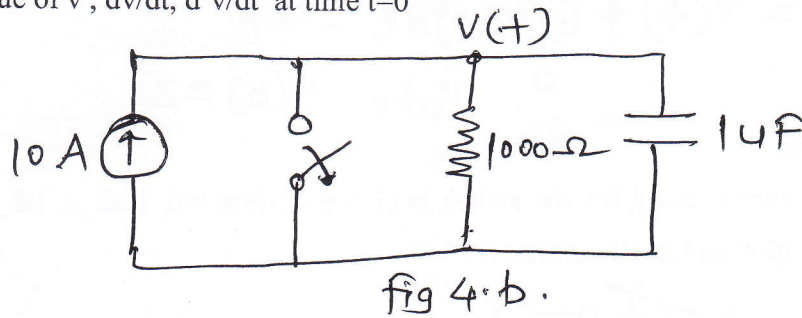


fig 4.a.

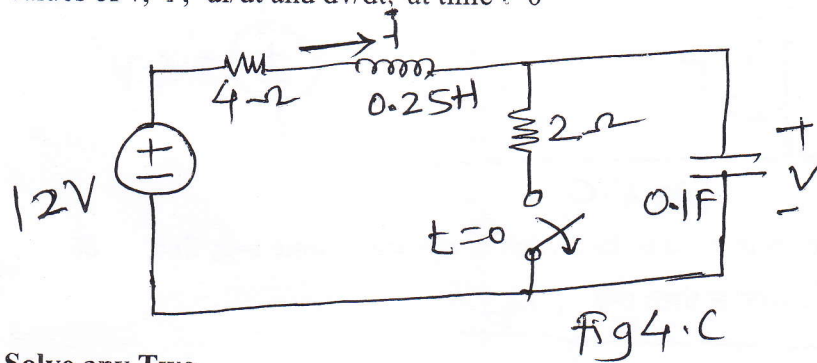
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Page 4/6

- b) In the network shown in fig 4.b the switch is opened at time $t=0$, find 09 L3 CO5
value of v , dv/dt , d^2v/dt^2 at time $t=0^+$

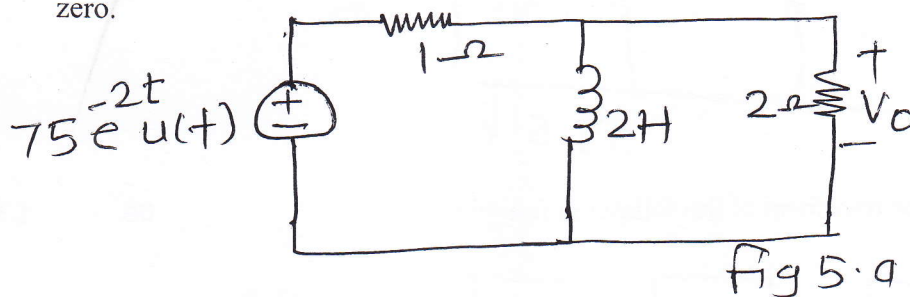


- c) In the network shown in fig 4.c the switch is opened at time $t=0$, find 09 L3 CO5
values of v , i , di/dt and dv/dt , at time $t=0^+$

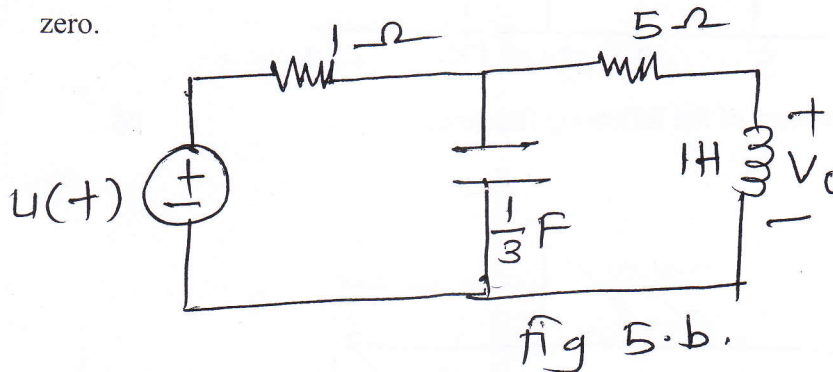


Q.5 Solve any Two

- a) Find V_0 for the circuit shown in fig 5.a, assume initial conditions are 09 L3 CO6
zero.



- b) Find V_0 in the circuit shown in fig 5.b, assume initial conditions are 09 L3 CO6
zero.



ESE

Page 5/6

- c) Solve for the response $Y(t)$ in the following differential equation.

09

L3

CO6

$$\frac{dy}{dt} + 5y(t) + 6 \int_0^t y(t) dt = 4(t),$$

Take $y(0) = 2$

Q.6

Solve any Three

- a) In the network shown in fig 6.a the switch is closed at time $t=0$, find values of v , i , di/dt and dv/dt , at time $t=0^+$

06

L3

CO5

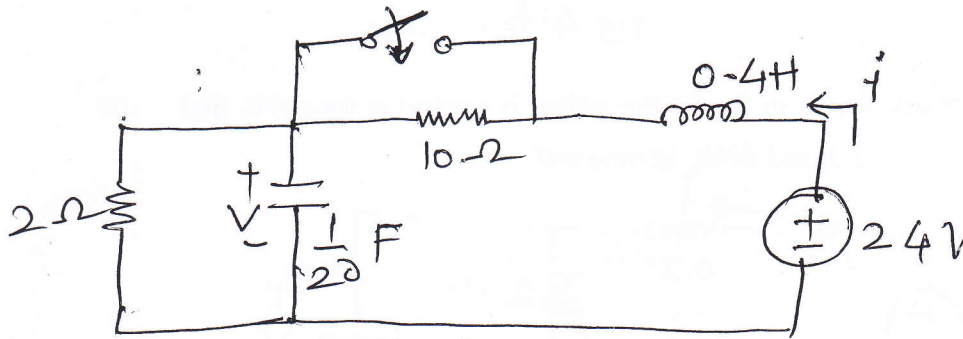


fig 6.9

- b) In the network shown in fig 6.b the switch is opened at time $t=0$, find value of v , dv/dt , d^2v/dt^2 at time $t=0^+$

06

L3

CO5

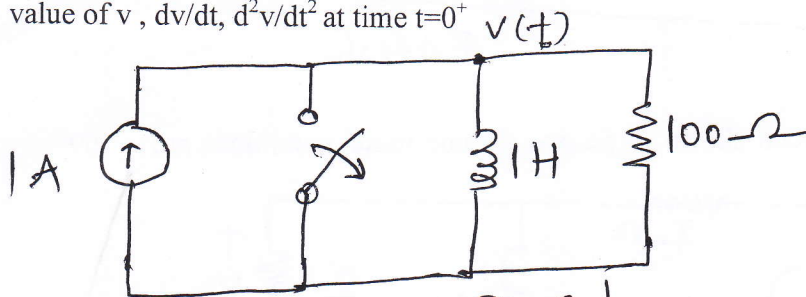


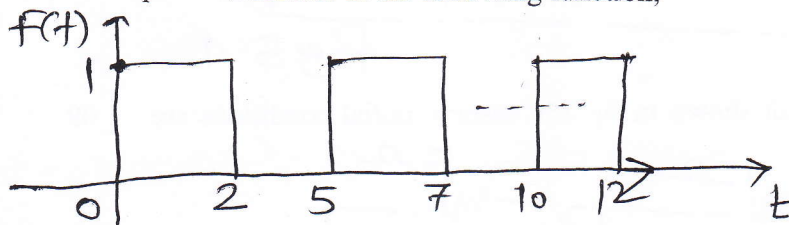
fig 6.b.

- c) Find the Laplace transform of the following function,

06

L3

CO6

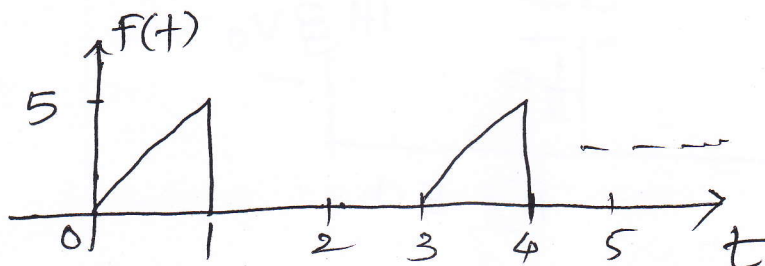


- d) Find the Laplace transform of the following function,

06

L3

CO6



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