

Q-4

Attempt all questions

(14)

- (a) Calculate current 'I' in circuit shown in Fig.1 using Loop analysis.

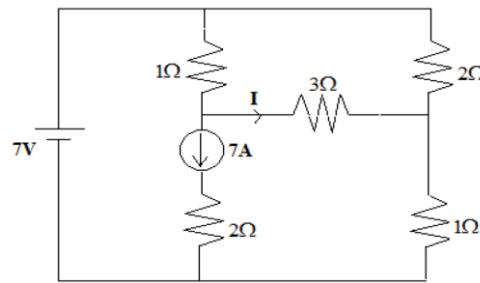


Fig.1

- (b) Using any method, obtain the voltage V_{AB} across terminals A and B in the network, shown in Fig.2.

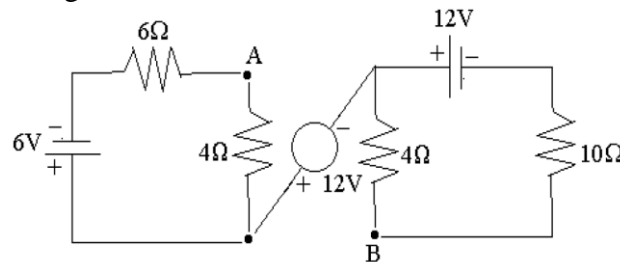


Fig.2

Q-5

Attempt all questions

(14)

- (a) For the circuit as shown in Fig.3 switch S is changed from position 'a' to 'b' at $t = 0$. Find values of i , di/dt , and d^2i/dt^2 at $t = 0$.

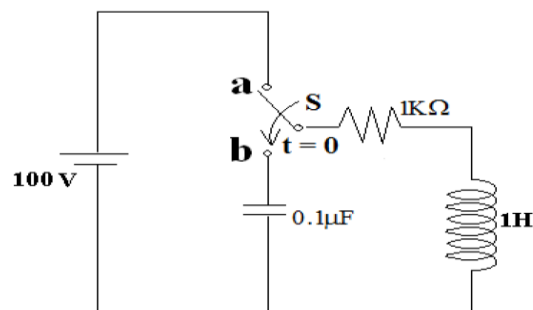


Fig.3

- (b) Define and Prove the Initial value and Final value Theorem.

Q-6

Attempt all questions

(14)

- (a) State Thevenin's Theorem and find the current flowing through the load resistor 22Ω in the circuit shown in Fig.4 by applying Thevenin's theorem.



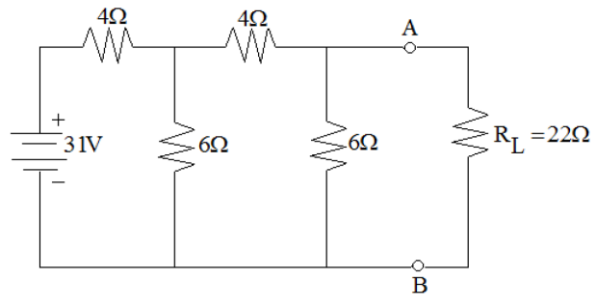


Fig.4

- (b) State and prove maximum power transfer theorem.

Q-7

Attempt all questions

(14)

- (a) Derive an expression for the current $i(t)$ in a series R-C circuit when it is excited by an impulse input with zero initial conditions.
 (b) Find the Laplace transform of (i) Unit Step Function (ii) Exponential Function.

Q-8

Attempt all questions

(14)

- (a) Derive an expression for the transmission parameters of a two port network.
 (b) Derive the Relationship between Z and Y parameter.

