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(Answer any five questions)

1. How are link list more efficient than array ?
2. What is dynamic memory allocation ?

3. What are the operations that can be performed on a stack?
4. Define Binary tree ? What is the maximum number of nodes in a binary tree of height k ?

5. What are the advantages of Binary search over linear search?
6. Write algorithm of Bubble sort.
7. What do you mean by hashing in Data Structure ?
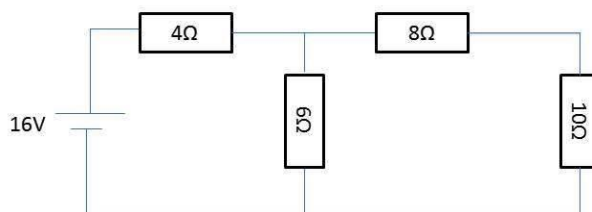
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(Answer any five questions)

1.   (a) State and prove maximum power transfer theorem.

      (b) Find the current through the 6Ω resistance by using superposition theorem.

2. What are the characteristics of an ideal OPAMP? Why OPAMP is generally not used in open loop mode? Draw the circuit diagram of a integrator and explain its operation.

3. What is D/A converter? Draw and explain a 4 bit D/A converter with binary weighted resistors.

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5. (a) Why the base of a transistor is made thin with low doping concentration?

    (b) Draw the circuit and output characteristic curves of a p-n-p transistor in CE mode. Show the different operating regions

6. Draw the circuit diagram of full wave rectifier. Explain its operation with the help of voltage waveforms.

7. What is fixed biasing of a transistor? Explain with a circuit diagram. Calculate its stability factors.