

# National Institute of Technology, Delhi

Name of the Examination: B. Tech.

Branch : CSE

Semester : 2<sup>nd</sup>

Title of the Course : Introduction to Electrical &  
Electronics Engineering

Course Code : EEB100

Time: 1.5 Hours

Maximum Marks: 25

Note : 1. Answer all the questions.

2. Do not write anything on the question paper except Roll number

1. Calculate (i)  $V_{Th}$  and (ii)  $R_{Th}$  between the open terminals A and B in the circuit shown in Fig.1. All resistance values are in ohms.

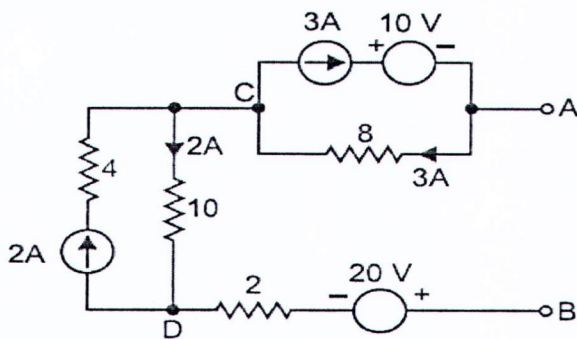


Fig. 1

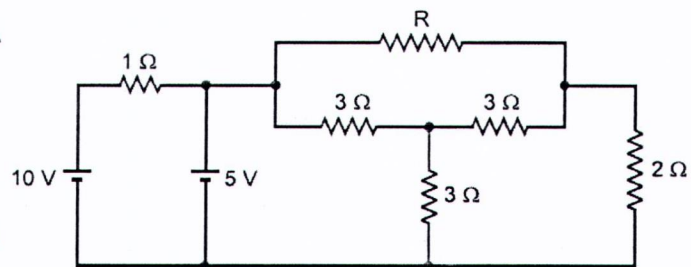


Fig. 2

2. Determine a non-negative value of  $R$  such that the power consumed by the  $2\ \Omega$  resistor in Fig. 2 is maximum.
3. Explain how the transistor can be used as an amplifier and as a switch.
4. Explain the connection diagram and working of JK flip flop. What are the advantages and disadvantages?
5. (a) Convert  $756.625_{10}$  to Binary, Octal and Hexa decimal number [3]
- (b) How many BCD corrections are required for the for the following BCD addition

$$(0101\ 1001\ 0100)_{BCD} + (0101\ 1001\ 0110)_{BCD}$$

[2]