2018

CBCS

1st Semester

ELECTRONICS

PAPER—GE1T

(Honours)

Full Marks : 40

Time : 2 Hours

The figures in the right-hand margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

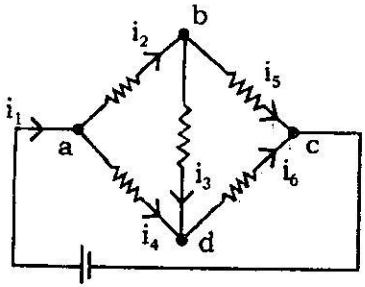
Electronics Circuit and PCB Designing

Group—A

1. Answer any *five* questions : 5×2

(i) Find the magnitude and direction of the unknown currents in figure below.

Given $i_1 = 10A, i_2 = 6A, i_5 = 4A$



(ii) Write down advantages of bridge rectifier circuit over full wave rectifier circuit.

(iii) What is the function of filter circuit ?

(iv) Write down relationship between α, β and γ of a transistor.

(v) Define Q. point.

(vi) What is thermal runway ?

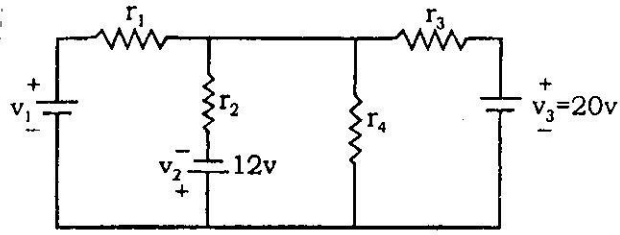
(vii) Write two names of solder alloy ?

(viii) What are the different photoresist material used in Photo printing ?

Group—B

2. Answer any *four* questions : 4×5

(i) In the network a figure below, find the current through the 10 Ω register using Thevenin's Theorem. 5



$r_1 = 2\Omega,\ r_2 = 5\Omega,\ r_3 = 1\Omega,\ r4 = 10\Omega,$

(ii) Draw the block diagram of series regulated power supply and explain each of the sections. 2+3

(iii) Draw full wave bridge rectifier circuit and explain its operation. 2+3

(iv) Write down working principle of *NPN* transistor. Show its different current component. 3+2

(v) Explain voltage divider bias circuit with proper circuit diagram.

(vi) Write short notes on surface Mount Technology.

Group—C

3. Answer any *one* questions : 1×10

(i) Draw CE amplifier circuit and its r_e model, and derive voltage gain, input impedance, output impedance and current gain. 1+1+2+2+2+2

(ii) Write down basic printing process for double sided PCB. What is wet film resists? Differentiate wet film resist and dry film resist. 5+2+3

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