Q.1[CO1] For the circuit shown in Fig.1 determine the unknown current using KCL.

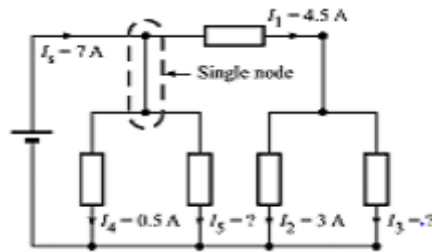[ANS: I_5= 2 Amp, I_3= 1.5 Amp]

Fig. 1

Q.2 [CO1] Determine the node voltage at nodes B and C in the network shown in Fig.2.
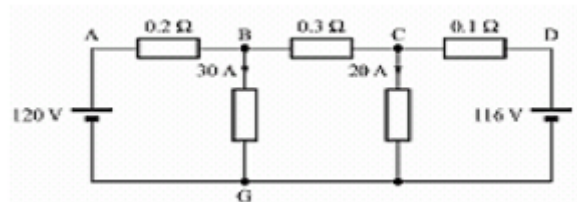
[ANS: V_B=V_C= 114 Volt]

Fig. 2

Q.3 [CO1] Using loop current analysis, find the loop current shown in Fig. 3.

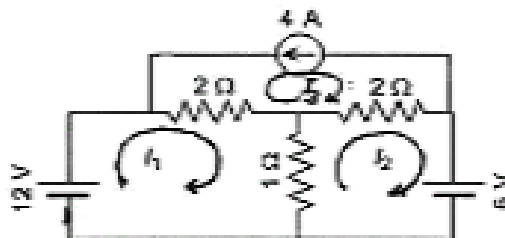[ANS: I_1= -0.25 Amp, I_2=-4.75 Amp, I_3= -4.0 Amp]

Fig. 3

Q. 4 [CO1] Determine the node voltage V_a for the circuit of Fig. 4.
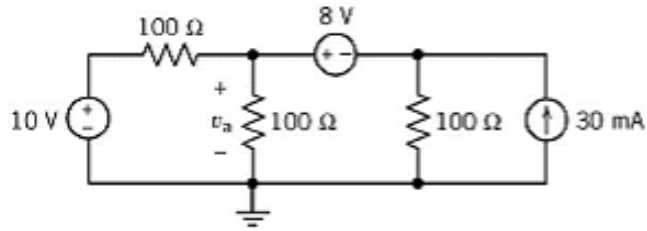
[ANS: V_a= 7 Volt]

Fig.4

Q. 5 [CO1] The circled number in Fig. 5 is node number. The node voltage of this circuit are $V_1 = 10$ V, $V_2 = 14$ V and $V_3 = 12$ V:

(a) Determine the value of current i_b.

(b) Determine the value of r, the gain of the CCVS.
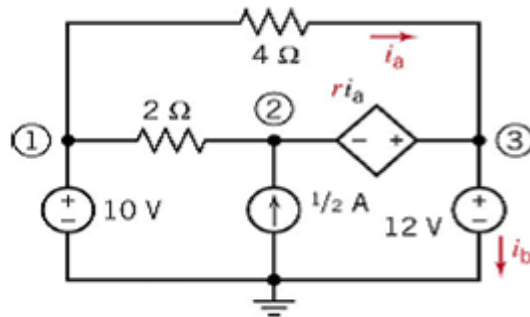
[ANS: (a) $i_b = -2$ Amp, (b) 4V/A]

Fig. 5

Q. 6 [CO1] Determine the value of the voltage measure by the voltmeter in Fig. 6.
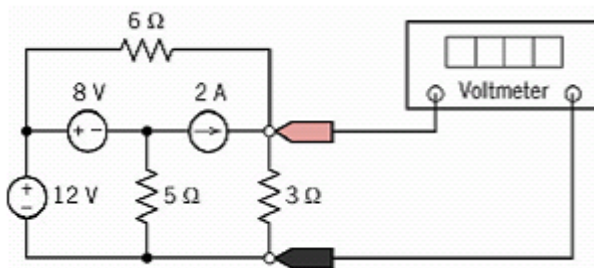
[ANS: 8 V]

Fig. 6