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TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

PHYSICS
DPP
DAILY PRACTICE PROBLEMS
DPP NO. 2

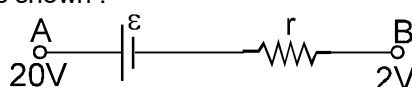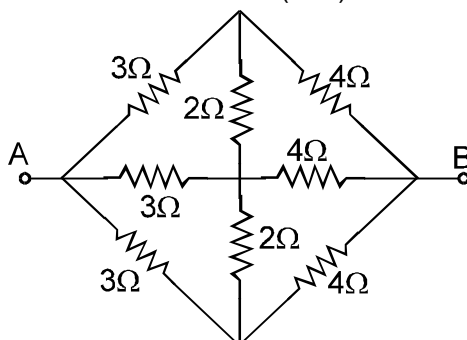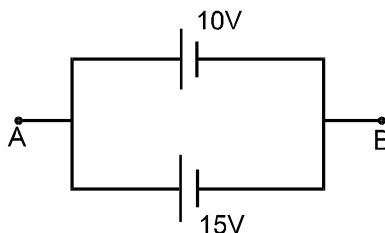## PHYSICS: CURRENT ELECTRICITY

DPP No. : 2

1. In the figure a part of circuit is shown :

(1) current will flow from A to B
(2) current may flow from A to B
(3) current will flow from B to A
(4) the direction of current will depend on r.

2. The equivalent resistance between A and B will be (in Ω)


(1) 2/7   (2) 8   (3) 4/3   (4) 7/3

3. There is a current of 1.344 amp in a copper wire whose area of cross-section normal to the length of the wire is $1\,mm^2$. If the number of free electrons per cm^3 is 8.4×10^{22}, then the drift velocity would be
(1) $1.0\,mm/sec$ (2) $1.0\,m/sec$ (3) $0.1\,mm/sec$ (4) $0.01\,mm/sec$

4. Two cells of e.m.f. 10 V & 15 V are connected in parallel to each other between points A & B. The cell of e.m.f. 10 V is ideal but the cell of e.m.f. 15 V has internal resistance 1 Ω. The equivalent e.m.f. between A and B is :
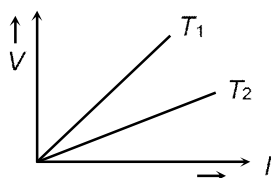

(1) $\frac{25}{2}$ V   (2) not defined   (3) 15 V   (4) 10 V

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5. If the reading of ammeter A_3 in figure is 0.75 A. Neglecting the resistances of the ammeters, the reading of ammeter A_2 will be :

15Ω — A_2

20Ω — A_1

A_3 — 60Ω
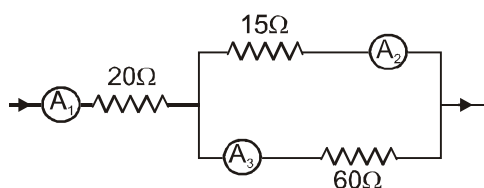
(1) 1.5 A   (2) 3 A   (3) 4.5 A   (4) 6 A

6. Read the following statements carefully :

Y : The resistivity of semiconductor decreases with increase of temperature.

Z : In a conducting solid, the rate of collisions between free electrons and ions increases with increase of temperature.

Select the correct statement (s) from the following :

(1) Y is true but Z is false   (2) Y is false but Z is true

(3) Both Y and Z are true   (4) Y is true and Z is the correct reason for Y

7. In a wire of circular cross-section with radius r, free electrons travel with a drift velocity V when a current I flows through the wire. What is the current in another wire of half the radius and of the same material when the drift velocity is 2V

(1) 2I   (2) I   (3) I / 2   (4) I / 4

8. If an ammeter is to be used in place of a voltmeter then we must connect with the ammeter a

(1) Low resistance in parallel   (2) High resistance in parallel

(3) High resistance in series   (4) Low resistance in series

9. A strip of copper and another of germanium are cooled from room temperature to 80 K. The resistance of

(1) Each of these increases

(2) Each of these decreases

(3) Copper strip increases and that of germanium decreases

(4) Copper strip decreases and that of germanium increases

10. The voltage V and current I graph for a conductor at two different temperatures T_1 and T_2 are shown in the figure. The relation between T_1 and T_2 is

T_1

T_2

V — I

(1) $T_1 > T_2$ (2) $T_1 \approx T_2$ (3) $T_1 = T_2$ (4) $T_1 < T_2$