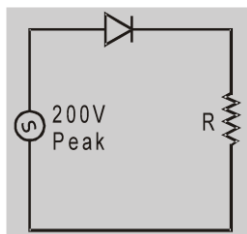


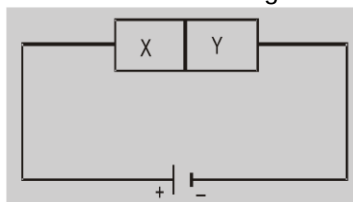
Self Practice Paper (SPP)

This Section is not meant for classroom discussion. It is being given to promote self-study and self testing amongst the Resonance students.

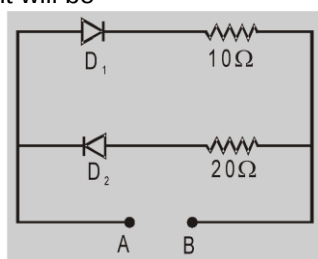
1. In the circuit shown in the figure, A.C. of peak value 200 volts is being rectified. As compared to the resistance R, the diode resistance is negligible, the r.m.s. value of potential across the R in volts will be approximately-



- (1) 200 (2) 100 (3) $\frac{200}{\sqrt{2}}$ (4) 280
2. A semi-conductor X is made by doping a germanium crystal with arsenic ($Z = 33$). A second semi-conductor Y is made by doping germanium with indium ($Z = 49$). The two are joined end to end and connected to a battery as shown. Which of the following statements is correct-



- (1) X is p-type, Y is n-type and the junction is forward biased.
 (2) X is n-type, Y is p-type and the junction is forward biased.
 (3) X is p-type, Y is n-type and the junction is reverse biased.
 (4) X is n-type, Y is p-type and the junction is reverse biased.
3. In the following figure a battery of 2 volt is connected between A and B. It is assumed that the resistance of a diode is zero in forward bias and infinite in reverse bias. If positive terminal of the battery is connected to A, then the current flowing in the circuit will be-



- (1) 0.1 A (2) 0.2 A (3) 0.3 A (4) Zero
4. The reverse current in a P-N junction diode at low reverse voltage is $25\mu\text{A}$. The value of forward current at forward voltage of 0.05 V will be if $\frac{KT}{e} = 0.025$ volt-
- (1) 16 mA (2) 1.6 mA (3) 0.16 mA (4) 160 mA

SPP Answers

1. (2) 2. (4) 3. (2) 4. (3)