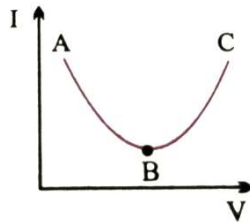


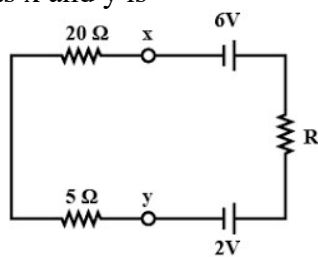
## PHYSICS

111. Resistance as shown in figure is negative at

- (1) A  
(2) B  
(3) C  
(4) none of these



112. The current flowing in the given circuit is 0.1 A. The potential difference between the points x and y is



- (1) 4.0 V  
(2) 3.0 V  
(3) 2.5 V  
(4) 2.0 V

113. Resistors P and Q are connected in the gaps of the metre bridge. The balancing point is obtained  $\frac{1}{3}$  m from the zero end.

If a  $6 \Omega$  resistance is connected in series with P, the balance point shifts to  $\frac{2}{3}$  m

from the same end. P and Q are

- (1) 4, 2  
(2) 2, 4  
(3) both (1) and (2)  
(4) neither (1) nor (2)

114. A potentiometer wire is 100 cm long and a constant potential difference is maintained across it. Two cells are connected in series first to support one another and then in opposite direction. The balance points are obtained at 50 cm and 10 cm from the positive end of the wire in the two cases. The ratio of emf's is

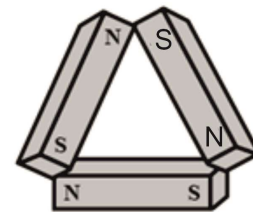
- (1) 5 : 1  
(2) 5 : 4  
(3) 3 : 4  
(4) 3 : 2

115. A steel wire of length L has a magnetic moment M. It is then bent into a semi-circular arc; the new magnetic moment will be

- (1) M  
(2)  $\frac{2M}{\pi}$   
(3)  $\frac{M}{L}$   
(4)  $M \times L$

116. Three identical bar magnets each of magnetic moment M, are placed in the form of an equilateral triangle with the north pole of one touching the south pole of other. The net magnetic moment of the system is

- (1)  $\sqrt{3}M$   
(2)  $\frac{3M}{2}$   
(3) 3M  
(4) zero



117. The ratio of the magnetic field due to a small bar magnet in end-on position to broad-side on position is

- (1)  $\frac{1}{4}$   
(2)  $\frac{1}{2}$   
(3) 1  
(4) 2

118. A magnet of magnetic moment M is rotated through  $360^\circ$  in a magnetic field B; the work done will be

- (1) MB  
(2) 2MB  
(3)  $2\pi MB$   
(4) Zero

119. The period of oscillation of a magnet in a vibration magnetometer is 2 s. The period of oscillation of a magnet whose magnetic moment is four times that of the first magnet is

- (1) 1 s  
(2) 4 s  
(3) 8 s  
(4) 0.5 s

120. Soft iron is used in many part of electrical machines for

- (1) low hysteresis loss and low permeability  
(2) low hysteresis loss and high permeability  
(3) high hysteresis loss and low permeability  
(4) high hysteresis loss and high permeability