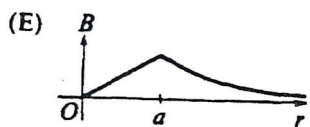
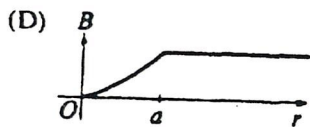
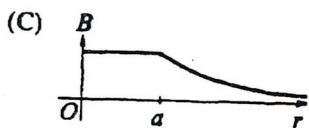
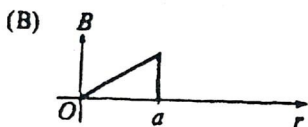
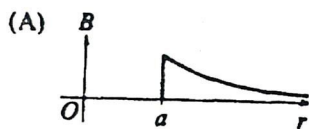
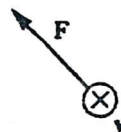


50. A current I , uniformly distributed over the cross section of a long cylindrical conductor of radius a , is directed as shown above. Which of the following graphs best represents the intensity B of the magnetic field as a function of the distance r from the axis of the cylinder?



51. At point X a charged particle has a kinetic energy of $9 \mu\text{J}$. It follows the path shown above from X to Y through a region in which there is an electric field and a magnetic field. At Y the particle has a kinetic energy of $11 \mu\text{J}$. What is the work done by the magnetic field on the particle?

- (A) $11 \mu\text{J}$
 (B) $2 \mu\text{J}$
 (C) $-2 \mu\text{J}$
 (D) $-11 \mu\text{J}$
 (E) None of the above



52. In a region of space there is a uniform \mathbf{B} field in the plane of the page but no \mathbf{E} field. A positively charged particle with velocity \mathbf{v} directed into the page is subject to a force \mathbf{F} in the plane of the page as shown above. Which of the following vectors best represents the direction of \mathbf{B} ?

- (A)
- (B)
- (C)
- (D)
- (E)