Teko CLASSES ® .....the support

ENJOY MATHEMATICS WITH SUHAAG SIR

R-1, OPPOSITE RAILWAY TRACK, NEW GLASS CORNER BUILDING, ZONE-2 , M. P. NAGAR, BHOPAL
☎:(0755) 32 00 000, 98930 5 888 1

IIT-JEE, AIEEE (WITH 12TH, 11TH10TH, 9TH & DROPPERS) www.tekoclasses.com **Page:** 1

SOLUTION OF IITJEE 2012; PAPER   1   ;   BHARAT MAIN SABSE PAHLE, WEBSITE PAR BHI....

PAPER 1
PHYSICS

1.   A bi-convex lens is formed with two thin plano-convex lenses as shown in the figure. Refractive index n of the first lens is 1.5 and that of the second lens is 1.2. Both the curved surafaces are of the same radius of curvature R = 14 cm. For this bi-convex lens, for an object distance of 40 cm, the image distance will be
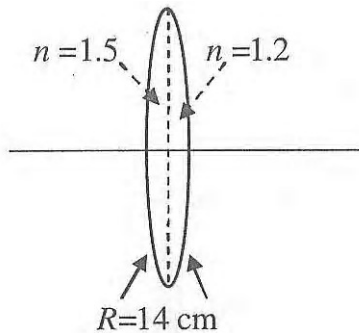

(a)   – 280.0 cm

(b*)   40.0 cm

(c)   21.5 cm

(d)   13.3 cm

2.   A thin uniform rod, pivoted at O , is rotating is the horizontal plane with constant angular speed ω, as shown in the figure. At time t = 0, a small insect starts form O and moves with constant speed V with respect to the rod towards the other end. It reaches the end of the rod at t = T and stops. The angular speed of the system remains ω throughout. The magnitude of the torque $(|\tau|)$ on the system about O, as a function of time is best represented by which plot ?

(A)

(B)

ANS. B

(C)

(D)
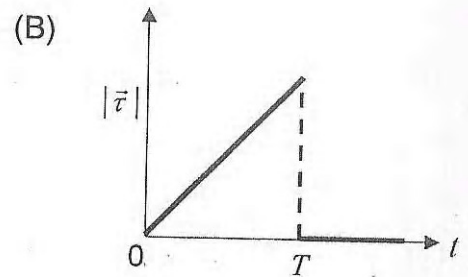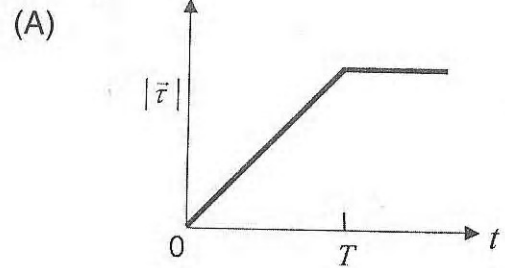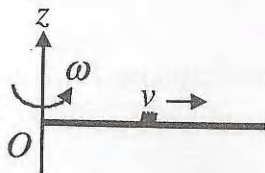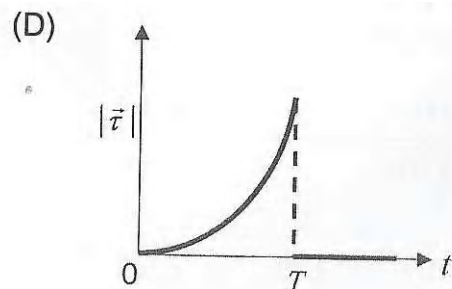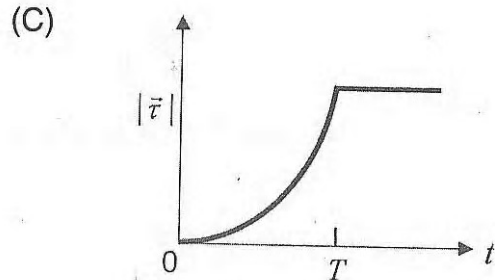
3.   Three very large plates of same area are kept parallel and close to each other. They are considererd as ideal black surfaces and have very high thermal conductivity. The first and third plates are maintained at temperatues 2T and 3T respectively. The temperature of the middle (i.e. second) plate under steady state condition is