1. The angular speed of a flywheel making 120 rev min^{-1} is
(a) 2π rad s^{-1} (b) $4 \pi^2$ rad s^{-1}
(c) π rad s^{-1} (d) 4π rad s^{-1}

2. The ratio of angular speeds of minute hand and hour hand of a watch is
(a) $1 : 12$ (b) $6 : 1$ (c) $12 : 1$ (d) $1 : 6$

3. The wheel of a toy car rotates about a fixed axis. It slows down from 400 rps to 200 rps in 2 s. Then, its angular retardation (in rad s^{-2}) is (rps = revolutions per second)
(a) 200π (b) 100π
(c) 400π (d) None of these

4. A wheel is rotating at 900 rpm about its axis. When the power is cut off, it comes to rest in 1 min. The angular retardation (in rad s^{-2}) is
(a) $\dfrac{\pi}{2}$ (b) $\dfrac{\pi}{4}$ (c) $\dfrac{\pi}{6}$ (d) $\dfrac{\pi}{8}$

5. The motor of an engine is rotating about its axis with an angular velocity of 100 rev min^{-1}. It comes to rest in 15 s after being switched off, assuming constant angular deceleration. What is the number of revolutions made by it before coming to rest?
(a) 12.5   (b) 40   (c) 32.6   (d) 15.6

6. A body is moving in a circular path with acceleration a. If its speed gets doubled, find the ratio of centripetal acceleration after and before the speed is changed.
(a) $1 : 4$ (b) $1 : 2$ (c) $2 : 1$ (d) $4 : 1$

7. The circular orbit of two satellites have radii r_1 and r_2 respectively ($r_1 < r_2$). If angular velocities of satellites are same, then their centripetal accelerations are related as
(a) $a_1 > a_2$ (b) $a_1 = a_2$
(c) $a_1 < a_2$ (d) Data insufficient

8. A particle is moving on a circular track of radius 30 cm with a constant speed of 6 ms^{-1}. Its acceleration is
(a) zero   (b) 120 ms^{-2} (c) 1.2 ms^{-2} (d) 36 ms^{-2}

9. A particle starts moving along a circle of radius $(20/\pi)$ m with constant tangential acceleration. If velocity of the particle is 50 m/s at the end of the second revolution after motion has began, the tangential acceleration
(in ms^{-2}) is
(a) 1.6   (b) 4   (c) 15.6   (d) 31.25

10. Let a_r and a_t represent radial and tangential accelerations. The motion of a particle may be circular, if
(a) $a_r = 0, a_t = 0$ (b) $a_r = 0, a_t \neq 0$
(c) $a_r \neq 0, a_t = 0$ (d) None of these