

4. Inertia Force and Piston Analysis and Flywheel

For a slider crank mechanism, The velocity and Acceleration of the Piston at inner dead centre will be. SSC-10

- a) 0 & 0 b) 0 and $\omega^2 r$ c) 0 and $< \omega^2 r$ d) 0 and $> \omega^2 r$

2. In a slider crank mechanism, The velocity of Piston becomes max when. (UPRVUNLJE-15)

- a) Crank and connected Rod are in line with each other.
b) Crank is perpendicular to the line of stroke of the Piston
c) Crank and connected Rod are mutually perpendicular
d) Crank is 120° with the line of stroke

3. D'Alambert's Principle is used for (MP-15)

- a) Reducing the Problem of Kinetics to equivalent Static Problem.
b) Determining stress in the truss c) Stability of Floating Body
d) Designing safe structure

4. In a slider mechanism, when does the connected Rod have zero Angular velocity. (UPRVUNL-15)

- a) When crank angle = 0° b) When crank angle = 90°
c) When crank angle = 45° d) Never

5. In case of Flywheel, max fluctuation in energy is. (Chatt-08)

- a) Sum of max and min energy b) Difference of max and min energy
c) Ratio of max and min energy d) Ratio of min and max energy

6. Which one of the following does not require a flywheel. (Chatt-08)

- a) Steam engine b) Engine driven Press c) CI engine d) Gas Turbine

7. The max fluctuation of energy in a flywheel is equal to. (UKO-13)

- a) $I \omega (\omega_1 - \omega_2)$ b) $I \omega^2 C_s$ c) $2 E C_s$ d) All

8. The twisting moment (T) delivered by a flywheel with respect to its angular displacement is given by the following expression. (SSC-14)

- a) $0, 180^\circ, 360^\circ$ b) $90^\circ, 270^\circ, 360^\circ$ c) $90^\circ, 270^\circ, 180^\circ$ d) $0^\circ, 270^\circ, 360^\circ$

1.-d 3.-a 5.-b 7.-d

2.-b 4.-b 6.-d 8.-a

9. The max and min speed of a flywheel are N_1 and N_2 rpm respectively. The coefficient of steadiness of the flywheel is. (SSC-JE-13)

- a) $\frac{N_1 - N_2}{2(N_1 + N_2)}$ b) $\frac{N_1 + N_2}{2(N_1 - N_2)}$ c) $\frac{2(N_1 - N_2)}{N_1 + N_2}$ d) $\frac{N_1 + N_2}{N_1 - N_2}$

10. The power transmitted by a circular shaft rotating at N rpm under action of torque T is. (SSC-13)

- a) $\frac{2\pi NT}{750}$ b) $\frac{2\pi NT}{60}$ c) $\frac{2\pi NT}{450}$ d) $\frac{2\pi NT}{4500}$

11. Flywheel is not the part of the following machine. (MP-16)

- a) Steam engine b) Gas turbine c) Fly press d) Lath machine

12. In which of the following is flywheel generally employed. (UPRVUNL-15)

- a) Lath b) Electric motor c) Punching machine d) Gear box

13. If the speed of an engine varies b/w 390 & 410 rpm in a cycle of operation. The coefficient of fluctuation of speed would be. (UPRVUNL-15)

- a) .01 b) .02 c) .04 d) .05

14. The amount of energy absorbed by a flywheel is determined from the. (UPRVUNL-15)

- a) $T-\theta$ diag b) $a-\theta$ diag c) speed-space diag d) speed-energy diag

15. The safe rim velocity of a flywheel is by. (UPRVUNL-15)

- a) centrifugal stress b) fluctuation of energy c) fluctuation of speed
d) mass of the flywheel

16. Coefficient of fluctuation of energy of an engine. (UP-16)

- a) variation of energy above or below the mean resisting torque
b) ratio of max and min energy
c) ratio of max fluctuation of energy to the work done per cycle
d) None

17. What is flywheel.

- a) An essential element of every prime mover b) used to store energy (ONGC-14)
c) used to keep the speed of prime mover const d) None

9-b 10-b 11-b&d 12-c 13-d 14-a 15-a 16-c 17-b