



I. Answer any 5 of the following questions:

[5 x 2 = 10]

1. Explain the concept of Inertia. Write two examples of each for inertia of motion, inertia of rest and inertia of direction.
2. Show that impulse is the change of momentum.
3. Define Impulse.
4. What is equilibrium?
5. State principle of moments.
6. What is radius of gyration?

II. Answer any 5 of the following questions:

[5 x 3 = 15]

7. Difference between Centripetal and Centrifugal forces.
8. Show that it is easier to pull an object rather than to push it.
9. State few methods to reduce friction.
10. Distinguish between stable and unstable equilibrium.
11. Derive the relation between torque of angular acceleration.
12. Explain the method to find the centre of gravity of a irregularly shaped lamina.

III. Answer any 5 of the following questions:

[5 x 5 = 25]

13. Explain the motion of blocks connected by a string in i) Vertical motion ii) Horizontal motion.
14. Explain about rolling friction.
15. Explain about Centrifugal forces with Suitable examples.

16. Explain why a cyclist bends while negotiating a curve road? Arrive at the expression for angle of bending for a given velocity.
17. State and prove perpendicular axis theorem.
18. Arrive at the expression for Kinetic Energy in rotation.

-----ALL THE BEST-----

Test should be written under the supervision of your parents and get the answer paper signed from them.

No corrections should be made after the test timings. We expect your honesty.

Test Papers have to be submitted after the completion of all the 4 tests.

Submission Date of Test Papers: 6th January, 7th January, 8th January

Timings: 9.30 AM – 12.30 PM / 5 PM- 8.30 PM