VICTORIOUS TUITION CENTER
X STD - CHAPTER ASSINGMENT
LAWS OF MOTION (only theory part)

1. Define the following terms:
    a) Force
    b) Statics
    c) Dynamics
    d) Kinematics
    e) Kinetics
    f) Inertia
    g) Linear momentum
    h) Like parallel force
    i) Unlike parallel force
    j) Resultant force
    k) Moment of the couple
    l) Couple
    m) 1 newton
    n) 1 dyne
    o) Unit force
    p) Gravitational unit of force
    q) Impulse
    r) Weight
    s) Mass
    t) Apparent weight
    u) Weightlessness
2. Write the formulae for the following:
    a) Like parallel forces
    b) Unlike parallel forces
    c) Torque
    d) Principle of moments
    e) Force
    f) Impulse
    g) Law of conservation of momentum
    h) Newton law of gravitation
    i) Acceleration due to gravity
    j) Weight
    k) Apparent weight
3. What are the two different types of motion? Define them.
4. What are the proposed concepts of Galileo?
5. Explain the types of inertia with examples.
6. State the Newton laws of motion.
7. Differentiate between mass and weight.
8. How does an astronaut float in a space shuttle?
9. Why a spanner with a long handle is preferred to tighten screws in heavy vehicles?
10. State the principle of moments.
11. Classify the types of force based on their application.
12. Deduce the equation of a force using Newton's second law of motion.
13. State and prove the law of conservation of linear momentum.
14. Describe rocket propulsion.
15. State the universal law of gravitational and derive a mathematical expression for it.
16. Give the applications of universal law gravitation.
17. A lift is accelerated upward. What is the apparent weight of a person inside the lift?
18. Give reasons:
    a) A passenger in a bus tends to fall backward when it starts suddenly.
    b) A gun recoils when a bullet is fired.
    c) An athlete runs a certain distance before taking a long jump.
    d) Handle in a door is placed at an edge of door
19. Discuss the apparent weight of a man in life.
20. Derive an expression between g and G.

21. Cite some examples to show
    a) for every action there is an equal and opposite reaction.
    b) The cases in which the time of action force is very short to a have a large force
    c) The cases in which the time of action of force is made larger to have less force.
22. Give the applications of torque.
23. What happens to the weight of a person while he goes from polar region to equator?
24. A pumpkin vendor sells his pumpkin using a beam balance in an elevator. Will he gain more if the elevator is accelerating up?
25. A boy puts a heavy box of mass M on his head and jumps down from the top of a multistoried buildings to the ground. How much is the force exerted by the box on his head during his force fall? Does the force of gravity increase during the fall?
26. A thief jumps from roof a house with a box of weight W on his head. What will be the weight of the box as experienced by the thief during jump?

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