This is a Class 1 exam

Lebanon Evangelical School
for Boys and Girls
Loueizeh - Baabda

Stage Exam 03

16MAY2025

Do NOT write in this box. Your MARK will be placed here.

Subject :	Physics
Class :	8A, 8B, 8C and 8E
Teacher :	Elyann Daher
Duration :	1 hour

No calculators are allowed

You are to answer the questions to this exam on : Squared paper

Your name :		*Time taken to complete exam*
Your Class :		
Exam Room :		
How many sheets, including cover sheet :		

- Do not open this paper until the teacher in charge instructs you to do so.
- The most important thing to remember in taking an exam is NEVER PANIC.
- If you are caught cheating in this exam, you will be awarded zero for ALL exams that are taken on this day.

SE03/20242025/Physics/8ABCE

1- This exam is composed of 4 papers. Make sure to answer all the questions.

2- All your answers should be written on a separate paper, anything written on the question sheet will NOT be graded.

Exercise 1: True or False. DO NOT correct the false statements(1pt each)

1. If you go to Mercury, your weight would stay the same.
2. Given the same force, a baseball will accelerate more than a basketball.
3. If an object is at rest, inertia will keep it at rest.
4. The inertia of an object is determined by its speed.
5. The speed of an object changes only when it is acted on by an unbalanced force.
6. A stationary object resists movement only because of gravity.
7. Electrostatic force describes the attraction and repulsion between electric charges.
8. If the net force acting on an object is zero, it is definitely not moving.

Exercise 2: Choose the correct answer.(1pt each).

1.The unit of force is (meter, kilogram, newton).

2.Gravity is a (force, mass, distance).

3.If you go to the Moon, your mass will (increase, stay the same, decrease).

4.The friction involved in a boy running down the hill is (static, sliding, fluid).

5.If there is no change in the force applied as you increase the mass a truck is carrying, its acceleration (increases, stays the same, decreases).

6.An ant falling from the roof of a house lands unharmed because of (gravity, air resistance, acceleration).

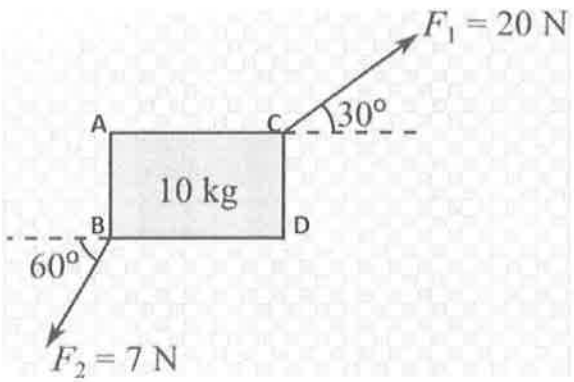
7.The friction that slows down objects moving in liquids (static, sliding, fluid).

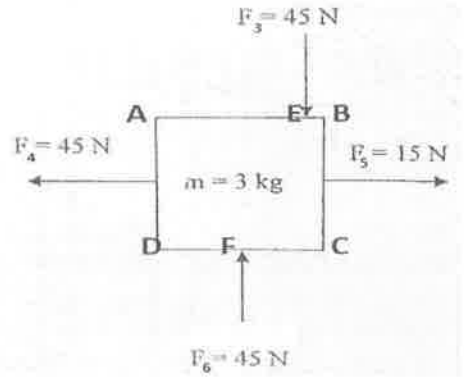
8.As the force acting on you increases, your acceleration (increases, stays the same, decreases).

Exercise 3: Find the right term for each definition (1pt each)

1. The force that pulls objects towards Earth.
2. The kind of friction that results when a sand paper is rubbing against wood.
3. The kind of friction that slows down a falling object
4. The measure of the force of gravity on an object.
5. The amount of matter in an object.
6. The kind of friction that exists if you try to walk in a pool.
7. The combination of all the forces on an object.
8. The SI unit for force.

Exercise 4: Observe the figures and fill in the blanks with the appropriate term (1pt each).





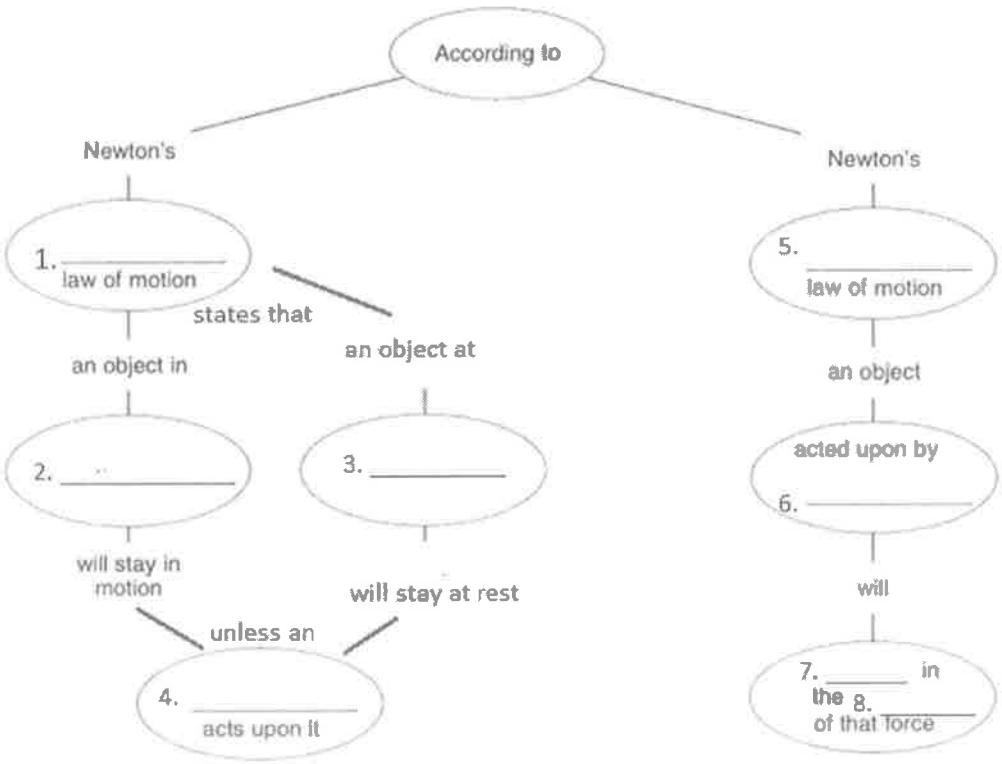
1. The magnitude of F_1 is_____.
2. The direction of F_2 is _____.
3. The point of application of F_3 is _____.
4. The line of action of F_4 is _____.
5. F_4 and F_5 have _____ directions.
6. F_3 and F_6 have _____ line of action.
7. _____ and F_1 have an inclined line of action.
8. F_3 and F_6 have the same _____.

Exercise 5: For each statement, tell whether Newton's first law or Newton's 2nd law are involved.

1. Balanced forces
2. F = m x a
3. Acceleration
4. Inertia
5. Unbalanced forces
6. When you give your friend a lift on your bike, you have to pedal harder and faster to keep the same acceleration and speed you had, when you were alone.
7. An object at rest stays at rest, and an object in motion stays in motion with a constant velocity; unless acted upon by an unbalanced force.
8. You're in a moving car and suddenly they hit the break; but you keep on moving forward.

Exercise 6: Fill in the following diagram.

Do not copy the diagram, only copy the number of the missing word. (1pt each)

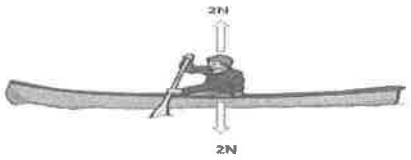


Exercise 7: For each case, CALCULATE the net force and TELL whether the object will be at rest, moving in a constant velocity, or accelerating. (3pts each)

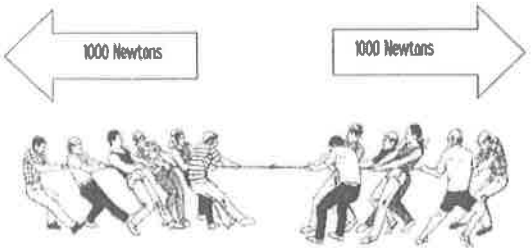
1.



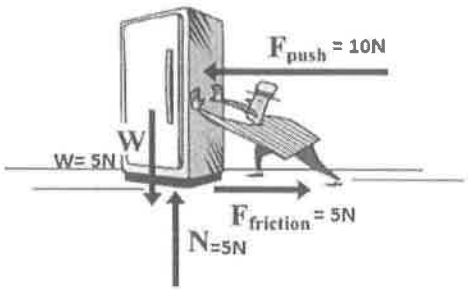
2.



3.



4.



Exercise 8: Short answers questions. (2pts each).

1. **What are the two factors that affect friction?**
2. **What are the two factors that affect gravity?**
3. **Name two ways that could reduce friction.**
4. **Name two differences between mass and weight.**

Exercise 9: Calculation problem (5pts each)

1. **A roller coaster pushes a 25kg person upward with a force of 300N.What is the acceleration?**
2. **An object of mass 10kg is accelerating $2m/s^2$. What force is applied to it?**
3. **What is the weight of an 80kg person on Earth? What is its mass on the moon?**
4. **What is the mass of a box that weighs 74N on Mars? ($g_{Mars} = 3.7N/kg$)**

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Exercise 1 (8pts)
1. False
2. True
3. True
4. False
5. True
6. False
7. True
8. False

1pt each

Exercise 2 (8pts)
1. newton
2. force
3. stay the same
4. sliding
5. decreases
6. air resistance
7. fluid
8. increases

1pt each

Exercise 3 (8pts)
1. Gravity
2. Sliding
3. Air Resistance
4. Weight
5. Mass
6. Fluid friction
7. Net force
8. Newton

1pt each

Exercise 4 (8pts)
1. 20N
2. bottom left
3. E
4. Horizontal
5. opposite
6. same / vertical
7. F_2
8. magnitude / line of action

1pt each

Exercise 5 (8pts)
1. 1st
2. 2nd
3. 2nd
4. 1st
5. 2nd
6. 2nd
7. 1st
8. 1st

1pt each

Exercise 6 (8pts)
1. First
2. motion
3. rest
4. unbalanced force
5. second
6. a force
7. accelerate
8. direction

1pt each

Exercise 7 (19pts)
1. Net force = 200 − 120 = 80N right (1) (1) (1)
accelerating (1)
2. Net force = 2 − 2 = 0N (1) (1) (1) Balanced
moving (1) with a constant velocity
3. Net force = 1000 − 1000 = 0N (1) (1) (1)
Balanced
at rest (1)
4. Net force Horizontally 10 − 5 = 5N (1) (1) (1) (1)
Vertically 5 − 5 = 0N (1) (1)
accelerating (1)

Ex 8 (8pts) 2pts each
1. Texture of the surface (1)
Mass of the object (1)
2. Distance separating the (1) two objects, and (1) the masses of the objects
3. Add oil (1)
Add wheels (1)
4. Mass is the amount of matter
(1) expressed in kg doesn't change } choose 2
(1) Weight is the pull of gravity expressed in N depends on the location } choose 2

Ex 9 (20pts) 5pts each
1. According to Newton's 2nd Law (1)
$a = \frac{F}{m} = \frac{300}{25} = 12\ m/s^2$ (1) (1) (1)
2. According to Newton's 2nd Law (1)
$F = a \times m = 10 \times 2 = 20N$ (1) (1) (1)
3. $W = m \times g = 80 \times 9.8 = 784N$ (1) (1) (1)
The mass doesn't change. (1)
4. $m = 80kg$ (1)
$W_{Mars} = m \times g_{Mars}$
$\rightarrow m = \frac{W}{g} = \frac{74}{3.7} = 20kg$ (1) (1) (1) (1)