PW-physics

PW of physics

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Faculty of sciences and technology

Practical work of physic for 1 st year license common Base

Credit=2,Coefficient =1, Hourly volume,24 h in each semesters

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1.0
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Table of contents

I Pre- requires

- Used the international standards in physical measurements.

- A general understanding of physical errors.

- Comprehending the forces that affect the object and their representation.

- Applying Newton's second law.

- The difference between free fall and actual fall.

- Deriving the solution for a second-order differential equation.

- An overview of physical collisions.

II   Test pre- requires

1. Exercice

1- What main estimation of the inaccuracy in physical measurements:

☐   - evaluation of errors

☐   Estimating the uncertainty of physical measurements

☐   Calculate of the errors

2. Exercice

2- Choose the correct answer"The Mean Value (x) "It is:

☐   the sum of the errors

☐   the Mean of the errors

☐   the absolute value function inequalities involving variables

3. Exercice

3- An error may be defined as:

☐   the difference between the measured value and real value

☐   the real value measured

4. Exercice

In an elastic collision:

☐   The total energy of the system changes

☐   The total energy of the system remains constant

☐   Rotational motion converts to linear motion.

5. Exercice

In an inelastic collision:

☐   Objects retain their entire kinetic energy.

☐   The total energy is converted entirely into kinetic energy.

☐   Objects remain in a state of complete rest

☐   Objects change shape and lose energy during the collision

6. Exercice

What conditions make a collision elastic?

☐   Objects are elastic and homogeneous.

☐   Objects are upright.

☐   The system conserves momentum.

☐   Objects lose some of their kinetic energy.

7. Exercice

What happens to the total energy of the system in an elastic collision?

☐   It increases.

☐   It decreases.

☐   It remains constant.

☐   It converts to kinetic energy.

8. Exercice

What factors influence the degree of elasticity in a collision?

☐   Only the speed of objects.

☐   Only the momentum.

☐   The nature and shape of objects.

☐   Only the falling distance.

9. Exercice

In an inelastic collision:

☐   The system conserves momentum.

☐   The total energy converts to internal energy.

☐   Objects retain their original shape.

☐   The total energy converts to kinetic energy.

10. Exercice

What is the primary difference between an elastic and an inelastic collision?

☐   In an elastic collision, objects retain their original shape.

☐   In an inelastic collision, the system conserves momentum.

☐   In an elastic collision, the total energy converts to internal energy.

☐   In an inelastic collision, objects change shape and some energy converts to internal energy.

Conclusion

The series of short questions and answers will allow to assess the prior knowledge that the students have on the topic, and to provide a recap if necessary before starting the lab session

Exercises solution

> **Solution** n°1

1- What main estimation of the inaccuracy in physical measurements:

☑ - evaluation of errors

☐ Estimating the uncertainty of physical measurements

☑ Calculate of the errors

> **Solution** n°2

2- Choose the correct answer"The Mean Value (x) "It is:

☐ the sum of the errors

☑ the Mean of the errors

☑ the absolute value function inequalities involving variables

> **Solution** n°3

3- An error may be defined as:

☑ the difference between the measured value and real value

☐ the real value measured

> **Solution** n°4

In an elastic collision:

☐ The total energy of the system changes

☑ The total energy of the system remains constant

☐ Rotational motion converts to linear motion.

> **Solution** n°5

In an inelastic collision:

☑ Objects retain their entire kinetic energy.

☑ The total energy is converted entirely into kinetic energy.

☐ Objects remain in a state of complete rest

☐ Objects change shape and lose energy during the collision

> **Solution** n°6

What conditions make a collision elastic?

☐ Objects are elastic and homogeneous.

☐ Objects are upright.

☑ The system conserves momentum.

☐ Objects lose some of their kinetic energy.

> **Solution** n°7

What happens to the total energy of the system in an elastic collision?

☐ It increases.

☐ It decreases.

☐ It remains constant.

☐ It converts to kinetic energy.

> **Solution** n°8

What factors influence the degree of elasticity in a collision?

☐ Only the speed of objects.

☐ Only the momentum.

☐ The nature and shape of objects.

☐ Only the falling distance.

9

> **Solution** n°9

In an inelastic collision:

☐ The system conserves momentum.

☐ The total energy converts to internal energy.

☐ Objects retain their original shape.

☐ The total energy converts to kinetic energy.

> **Solution** n°10

What is the primary difference between an elastic and an inelastic collision?

☐ In an elastic collision, objects retain their original shape.

☐ In an inelastic collision, the system conserves momentum.

☐ In an elastic collision, the total energy converts to internal energy.

☐ In an inelastic collision, objects change shape and some energy converts to internal energy.