Assignment 11th Science 5.01.2026

Instructions:

- Do the assigned task on sheets.
- It should be done date-wise in neat & clean handwriting.

PHYSICS

Topic – Work power and energy

Dear students please read carefully all the key details of chapter and at the end there is quiz related to topic . it is must to solve all quiz questions .

Work, Power and Energy – Class 11 Physics

Brief Content Summary

- **Work:** Work is said to be done when a force acting on a body produces displacement in the direction of force.
- **Work by Constant Force:** Depends on magnitude of force, displacement, and angle between them.
- **Special Cases of Work:**
  - Work is zero when displacement is zero or force is perpendicular to displacement.
- **Energy:** Capacity of a body to do work.
- **Kinetic Energy (KE):** Energy possessed by a body due to its motion.
- **Work–Energy Theorem:** Work done by net force equals change in kinetic energy.
- **Potential Energy (PE):** Energy due to position or configuration.
  - **Gravitational Potential Energy:** Energy due to height.
  - **Spring Potential Energy:** Energy stored in stretched or compressed spring.
- **Conservative and Non-conservative Forces:**
  - Conservative → path independent (gravity).
  - Non-conservative → path dependent (friction).
- **Mechanical Energy:** Sum of kinetic and potential energies.
- **Law of Conservation of Energy:** Energy can neither be created nor destroyed, only transformed.
- **Power:** Rate of doing work.
  - **Average Power** and **Instantaneous Power**.
- **Collisions:** Elastic and inelastic collisions (basic idea).

Important Formulas

Work

$$W = \vec{F} \cdot \vec{s} = Fs\cos\,\theta$$

Kinetic Energy

$$KE = \frac{1}{2}mv^2$$

Work–Energy Theorem

$$W = \Delta KE$$

Gravitational Potential Energy

$$PE = mgh$$

Spring Potential Energy

$$PE = \frac{1}{2}kx^2$$

Mechanical Energy

$$E = KE + PE$$

Power

- Average Power:

$$P = \frac{W}{t}$$

- Instantaneous Power:

$$P = \vec{F} \cdot \vec{v}$$

Conservation of Mechanical Energy

$$KE_1 + PE_1 = KE_2 + PE_2$$

Symbols Used

- F= force
- s= displacement
- m= mass
- v= velocity
- g= acceleration due to gravity
- h= height
- k= spring constant
- x= extension/compression

Instructions

Students you have to use following link to start the quiz. After completion of quiz you will get the certificate of participation and grade marks .you have to save it for further assessment in future .

Link of quiz- https://www.proprofs.com/quiz-school/ugc/story.php?title=ndu1njk4oq72hb

CHEMISTRY

Instructions

1. Solve all the questions on sheets.
2. Write answers according to marks mentioned against questions.

Questions

1.Why does the presence of a nitro group make the benzene ring less reactive than the unsubstituted benzene ring? Explain. (3)

2.Suggest a route for the preparation of nitrobenzene starting from acetylene? (2)

3.. Write the structures and names of products obtained in the reactions of sodium with a mixture of 1-iodo-2-methylpropane and 2-iodopropane. (2)

4. An alkyl halide C5H11Br (A) reacts with ethanolic KOH to give an alkene ‘B’, which reacts with Br2 to give a compound ‘C’, which on dehydrobromination provides an alkyne with ‘D’. On treatment with sodium metal in liquid ammonia, one mole of ‘D’ gives one

mole of the sodium salt of ‘D’ and half a mole of hydrogen gas. Complete hydrogenation of ‘D’ yields a straight-chain alkane. Identify A, B, C and D. Give the reactions involved. (5)

BIOLOGY

Learning Work - Chapter Respiration in Plants

Respiration in Plants – Brief Notes

Definition: Respiration is the process by which plants break down glucose to release energy (ATP) needed for growth and maintenance.

Type of Process: It is a catabolic, enzyme-controlled process and occurs day and night.

Site of Respiration:

Glycolysis: Cytoplasm

Krebs cycle: Mitochondria

Electron Transport Chain (ETC): Inner mitochondrial membrane

Types of Respiration:

Aerobic respiration:

Uses oxygen

Glucose → CO_2 + H_2O + energy (ATP)

Produces more energy

Anaerobic respiration:

Occurs without oxygen

Glucose → Ethanol + CO_2 + energy (less ATP)

Respiratory Substrate:

Mainly glucose; also fats and proteins.

Gas Exchange:

Through stomata (leaves), lenticels (stems), and root hairs (roots).

Respiratory Quotient (RQ):

RQ = CO_2 released / O_2 consumed

For carbohydrates, RQ = 1

Difference from Photosynthesis:

Respiration releases energy, while photosynthesis stores energy.

Importance:

Provides energy for growth, repair, cell division, and synthesis of new substances.

Quiz:

http://https://www.proprofs.com/quiz-school/ugc/story.php?title=ndu1ntuzoakxx2&token=cHJlZXRpYmlzaG5vaTE5ODVAZ21haWwuY29t

MATHS

Key Concepts / Hints:

- The general form of a straight line is **ax + by + c = 0**.
- Slope (m) of a line gives its inclination:
  $m = (y_2 - y_1)/(x_2 - x_1)$.
- Slope-intercept form: **y = mx + c**, where m = slope and c = y-intercept.
- If two lines have equal slopes, they are parallel.
- If product of slopes is −1, the lines are perpendicular.

Self-Practice Questions (Any 5):

1. Find the slope of the line joining the points (2, 3) and (6, 11).
2. Write the equation of a line with slope 3 and y-intercept −5.
3. Find the slope of the line given by: 4x − 2y + 7 = 0.
4. Determine whether the lines 2x + 3y − 5 = 0 and 4x + 6y + 9 = 0 are parallel or not.
5. Find the equation of a line passing through (1, −2) with slope −4.

Math Quiz https://www.proprofs.com/quiz-school/ugc/story.php?title=ndu1nzi5mgxxk6

ENGLISH

https://www.indianarmyquiz.in/