GREENLAWNS HIGH SCHOOL

DATE: 22-09-2025 **STD. VIII** **MARKS: 80**

DAY: Monday **PHYSICS** **TIME: 2 hours**

Section-I

Q1 Choose the correct answers to the questions from the given options. **15m**
(Do not copy the questions, write the correct answers only.)

i. Thermal expansion is greatest in
   a. Solids
   b. Liquids
   c. Gases
   d. all of the above

ii. The rate of energy per unit of time is _____
   a. work
   b. thrust
   c. power
   d. torque

iii. A_____ is a metal pin or bolt used for fastening metal plate
   a. rivet
   b. hook
   c. clamp
   d. rod

iv. Which of the followings are effects of force
   a. It can change the shape of an object
   b. It can change the direction of a moving object
   c. It can change the speed of an object
   d. All of the above

v. Knives are ground to thin edge to
   a. Decrease pressure and increase area
   b. Increase pressure and decrease area
   c. Increase pressure and increase area.
   d. Decrease pressure and decrease area.

vi. Iron bridges expand and contract due to changes in temperature. To allow this expansion without causing damage, one end of the bridge is placed on
   a. springs
   b. rollers
   c. levers
   d. hinges

vii. Which of the following objects is designed to produce a turning effect when a force is applied?
   a. A hammer used to hit a nail
   b. A screwdriver used to tighten a screw
   c. A ruler used to draw a line
   d. A book placed on a table

viii. The potential energy of an object increases when it is raised to a greater _____
   a. temperature
   b. height

c. time
d. pressure

xi. The boiling point of water inside a pressure a cooker.
a. $121°C$
b. $100°C$
c. $110°C$
d. $150°C$

x. In which of the following motion the whole body gets displaced
a. Rotational motion
b. Translational motion
c. Vibrational motion
d. Oscillatory motion

xi. Linear Expansion does not depend on the
a. Nature of the material
b. Original length of the body
c. The increase in temperature
d. Original surface area of the body

xii. Which of the following liquid will evaporate faster at room temperature
a. Water
b. Oil
c. Honey
d. Sanitizer

xiii. Gaseous envelope surrounding the earth is
a. Hydrosphere
b. Biosphere
c. Hemisphere
d. Atmosphere

xiv. In a bicycle, pedal force applied to the chain is _____ force applied at the pedal
a. greater than
b. less than
c. equal to
d. None of the above

xv. Pressure in a liquid increase with
a. Decreasing depth
b. Increasing density
c. Lower gravity
d. Larger surface area

Q2 State whether the underlined word in the following sentence makes the statement true or false. If the statement is false, correct only the underlined part. **5m**

i. Pressure can be increased by **<u>increasing</u>** the area.
ii. Gases undergo **<u>superficial</u>** expansion.
iii. At high altitudes boiling point of water **<u>reduces</u>**.
iv. The kinetic energy of an object increases with it its **<u>speed.</u>**
v. Force is measured in **<u>grams.</u>**

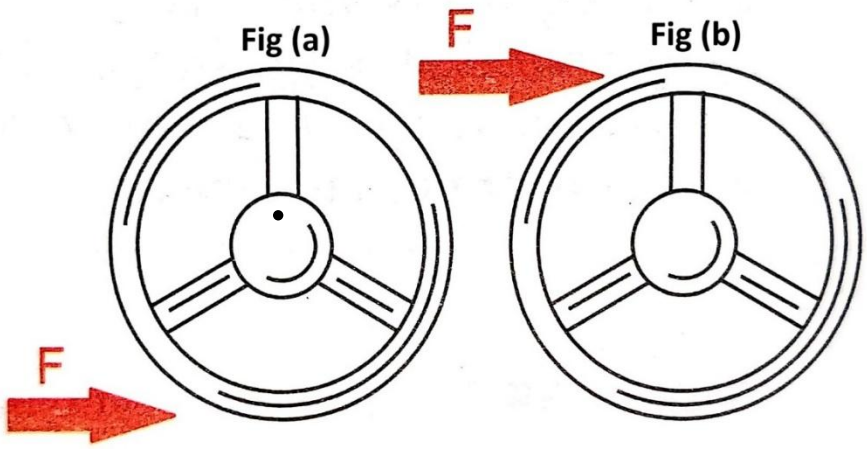
Q3 **Match the following** **5m**

Quantity	SI Unit
1. Pressure	a) N m
2. Thrust	b) W
3. Torque	c) J
4. Work	d) N m^{-2}
5. Power	e) N

Q4 **Name the following** **5m**

i. In CGS system unit of work is.
ii. The type of expansion in which solid changes its volume on heating.
iii. The force acting normally on a surface is.
iv. The capacity of a body animate or inanimate to do work is.
v. Pressure exerted on a surface area of $11m^2$ by a thrust of 1 N is.

Q5 Based on the image of two steering wheels with arrows indicating direction of applied force and with points marked as C, E and G on steering wheel in Fig (a) and points D, H and I on steering when in Fig(b) answer the following question (Do not draw the figure) **5m**



a. Which point is the pivot for the steering wheel in Fig (a)
b. Observe the arrow of force shown in Fig (b). In which direction will the steering wheel rotate — clockwise or anticlockwise?
c. At which point should a person apply force on the steering wheel in Fig (a) to get the greatest turning effect
d. At which point, when force is applied on the steering wheel in Fig (b), will the turning effect be the least
e. How does the turning effect change when the perpendicular distance from the pivot increases, if the force applied remains the same?

Q6 **Identify the energy conversion in each case** **5m**

i. A solar panel.
ii. A car engine running on petrol
iii. A loudspeaker playing music
iv. Photosynthesis in plants
v. A burning candle.

SECTION - II

Q7 Give scientific reasons **6m**

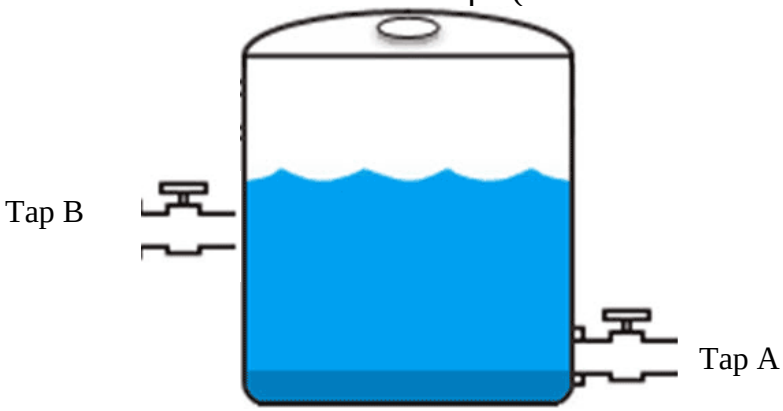
i. Why do nose bleeds occur at high altitudes?
ii. A gap is left between two railway lines?
iii. When a person pushes a wall, no work is done, why?

Q8. Answer the following question **4m**

i. What is a bimetallic strip? Name any one gadget where it is used
ii. Name two factors on which moment of force depends on.

Q9 Answer the following question

i. The diagram shows a water tank with two taps.(Do not draw the figure). **4m**



a. From which tap will the water come out with greater force? And why?
b. If the height of water in the tank increases, what happens to the pressure of water at Tap A
c. Hence explain why are water tanks placed on top of buildings rather than on the ground?

ii. Give the two conditions that is required for work to be done **2m**
iii. Distinguish between Boiling and Evaporation based on the following two points **2m**
   a) Defination
   b) Temperature at which it occurs
iv. Observe the two images: one shows tea in a cup and the other shows tea in a saucer. Answer the following questions: (Do not draw the figure)
   a. In which container will the tea cool faster – the cup or the saucer?
   b. Give a reason for your answer. **2m**

Q10 Solve the following Numerical

i. A girl weighing 50 kg carries a box of mass 12 kg to the top of a building 15 m high. Taking $g = 10\,m/s^2$, calculate the total work done by the girl against gravity. **3m**
ii. The moment of force applied on a nut is 2 N m. If the spanner is held 20 cm from the nut, calculate the force applied**.** **3m**
iii. A block exerts a pressure of 250 N m^{-2} on the ground. If the force applied **2m**

by the block is 500 N, calculate the area of contact with the ground.

iv. A ball of mass 2 kg is moving with a speed of 3 m/s. Calculate its kinetic energy. **2m**

Q11 Answer the following questions

i. Observe the three images given below carefully. In each image, a force is applied on an object. Based on the direction of force and displacement, identify the type of work done. Write your answer as *Positive*, *Negative*, or *Zero* for each case. **3m**

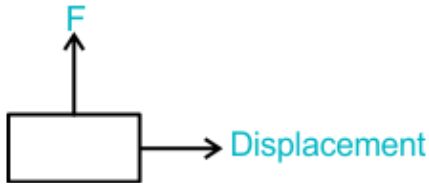


Image -1

1. W = _____

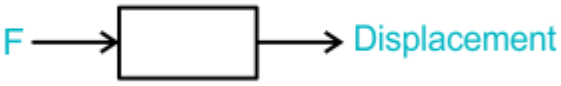


Image -2

2. W = _____

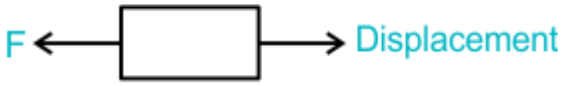


Image -3

3. W = _____

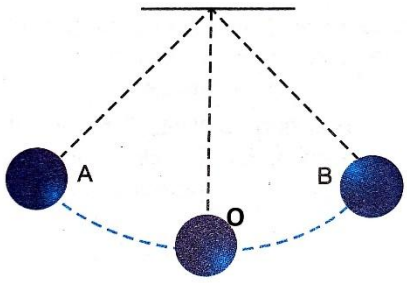
ii. The following image is of the same copper plate before and after heating. Answer the following questions based on the figure **2m**

Before Heating After Heating

a. Which type of thermal expansion is seen in the image?
b. What will happen to the copper plate. if while heating the temperature is increased further?

iii. Define the term Potential energy and give its SI unit. **2m**

iv. The following image shows a pendulum suspended from point **C**. Points **A** and **B** are the extreme positions of the pendulum, and point **O** is the mean (central) position. **3m**



a) At which positions is the potential energy of the pendulum maximum?
b) At which position is the kinetic energy of the pendulum maximum?
c) What type of energy transformation takes place as the pendulum moves from position A to position O?