

## S.2 MARKING PHYSICS

1. Water Always Flows from High Gravitational potential place to low potential place. To make water flow from low potential to high potential places, engineers use force pumps. When water is pumped into reservoir at high potential points, it can flow under gravity to the lower gravitational potential points where it is collected using a small tap at a very high pressure.
  2. They include an aluminum foil, a parabolic surface, a saucepan painted black, metal pieces to hold the pan above the parabolic mirror
  3.
    - By use of insulated bags
    - By trapping the steam
    - By use of wooden dishes or materials that are poor heat conductor.
    - Wrap the food in a sweater
    - Use aluminum foil and towel
    - Use a hot water bath.
  4. Over loading increases the weight of the truck which caused over speeding and brake failure.
    - Driver may not sustain dynamic equilibrium because of the varying quality of road.
    - Trucks are designed to carry a maximum amount of weight beyond which the truck becomes unstable and topple.
    - Make the Centre of gravity higher.
- 5) (a) Maximum pressure =  $\frac{\text{force}}{\text{minimum area}}$   
But; minimum area =  $\frac{3.0}{100} \times \frac{2.0}{100}$   
 $= 0.0006 \text{m}^2$   
Maximum pressure =  $\frac{3.0 \times 10}{0.0006}$   
 $= 50000 \text{Nm}^{-2}$
- b) Minimum pressure =  $\frac{\text{force}}{\text{maximum area}}$   
 $= \frac{30}{0.0015}$   
 $= 20000 \text{Nm}^{-2}$
- 6)(a) It states that when a force is applied at one point of an enclosed fluid, it exerts pressure which is transmitted equally throughout the fluid.
- b) Hydraulic press.  
Hydraulic car jerk.  
Hydraulic brakes.

7)

Materials attracted by bar magnet.	Materials not attracted by bar magnet.
Steel nickel	Wood Cork Glass Sulphur Copper brass

8)(a) Potential energy is the energy possessed by a body at rest while kinetic energy is the energy possessed by a body in motion.

b) Change in potential energy  $= mgh_1 - mgh_2$   
 $= (25 \times 10 \times 2.3) - (25 \times 10 \times 0.3)$   
 $= 575 - 75$   
 $= 500\text{J}$

NO.9) Output	Relevance	Accuracy	Coherence	Excellence
- Guidelines for visiting mountains and lakes shores.	<p>score 3 if a learner tells any 6 events</p> <ul style="list-style-type: none"> <li>- Fishing</li> <li>- Hot springs</li> <li>- High temperature</li> <li>- Beautiful sceneries</li> <li>- Peak of the mountain</li> <li>- High temperature at lake shores</li> </ul> <p>Scores 2 if any 4 are mentions</p> <p>Score 1 if 2 or less</p>	<p>Score 3 if more than 6 activities identified are accurate</p> <p>Score 2 if any 4</p> <p>Score 1 if 2 or less are correct.</p>	<p>Score 3 if a learner relates weather and climate to these events very well.</p> <p>Score 2 if learners relate weather and climates to these events somehow.</p> <p>Score 1 if a learners fairly relates weather and climates to these events</p>	Score 1 if the learner mentions a unique issue.