

HOME PACKAGE

FOR ORDINARY LEVEL PHYSICS

FORM THREE

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PROBLEM-01

- a) Mr. and Mrs. Smith live together, go to work every morning. Mr. Smith leave at home to hospital while Mrs. Smith leave at home to the school with specific displacement
- ii) From the statement above which law of vector addition can be applied to determine resultant of displacement for Mr. and Mrs. Smith.
- iii) State the law of vector addition mentioned above (i)
- b) Why does heat transfer by radiation not a medium? Explain

PROBLEM-02

- a) A good cooking vessel should be black on the outside and not shiny white. Explain
- b) When a bulb is connected between the two plates a simple cell, the bulb lights up. However the brightness of the bulb fades after about a minute.
- i) Explain why the bulb lights up
- ii) Why does it brightness fall? How is the effect minimized in a dry cell?

PROBLEM-03

- a) Why a gap is left between two successive rails.
- b) A form four student at Azania secondary school mixed water from two pots of the same mass. One pot is at 250°C and the other is at 350°C . What will be the equilibrium temperature in degree centigrade?

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PROBLEM-04

- a) Why a glass tumbler breaks when hot liquid is poured into it.
- b) Explain why the table cloth on a table can be easily pulled out without disturbing the dish placed on it.

PROBLEM-05

- a) Why is a bimetal strip made of brass and invar is curved outside with brass?
- b) Abdul pumped his bicycle tyre to a pressure of 1.6×10^5 Pa. the volume of a tyre was 350 m^3 and at 26°C . He cycled to town to buy sugar. In town he went to a petrol station and found that the temperature of the tyre had increased to 45°C . Calculate the new pressure of the tyre.

PROBLEM-06

- a) What is the mode of action of the pressure cooker? Explain
- b) Explain why over head telephone and electrical cables left sagging during installations on a hot day?

PROBLEM-07

It is possible to boil water without heating?

PROBLEM-08

What is the working principle of pressure cooker?

PROBLEM-09

Explain why it would take longer to cook potatoes at high mountain than at sea level.

PROBLEM-10

Give the reason why gases expand more than liquids when all are equally heated?

PROBLEM-11

Why does water show abnormal behavior? Explain this

PROBLEM-12

Why do liquids lack linear and superficial expansion? Explain

PROBLEM-13

How are the heat losses in thermos flasks prevented?

PROBLEM-14

Explain most materials become less dense as the temperature is increased.

PROBLEM-15

Explain why latent heat of fusion and latent heat of vaporization are 'hidden'

PROBLEM-16

Briefly explain in cold weather the metal blade of a knife feels cooler than the wooden handle.

PROBLEM-17

A cool breeze blows from the sea on a hot summer day.

PROBLEM-18

Briefly explain why holes are left below the chimneys of kerosene lamp or kitchen.

PROBLEM-19

Explain two ways in which lens cameras differ from human eye.

PROBLEM-20

Explain two function of the shutter in a camera.

PROBLEM-21

Why does the swimming pool appear much shallower than its actual depth?

PROBLEM-22

State briefly the cause of refraction of light when passing through transparent media.

PROBLEM-23

State briefly position of the image of a very distant object in concave mirror

PROBLEM-24

State briefly causes for a blurred image in a concave mirror or convex mirror.

PROBLEM-25

Explain the condition giving rise to critical angle and total internal reflection.

PROBLEM-26

Explain why the result of mixing blue and yellow paints is very different from that of mixing blue and yellow light.

PROBLEM-27

Why does an object appear colored when light falls onto it?

PROBLEM-28

Briefly explain why a straight stick appears to be bent when partially immersed in a beaker of water.

PROBLEM-29

On warm sunny days, tarmac roads often appear to be covered with pools of water some distance ahead, which disappear when approached. How do you explain this?

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PROBLEM-30

Explain the term opaque and translucent and give an example of each.

PROBLEM-31

Danger signs along the road as well as tail and brake lamps of motor vehicle rear are painted in red, briefly explain the reason behind.

PROBLEM-32

Give two reasons why convex mirrors are used as driving mirror.

PROBLEM-33

Explain briefly what the fuse is.

PROBLEM-34

Explain what will happen when three 1.5v cells are connected

- i) In series
- ii) In parallel

PROBLEM-35

Briefly explain why fuses are made of very thin wire but heaters are made of thick wires.

PROBLEM-36

Explain why leaded-acid accumulators are used in car batteries rather than dry cells.

PROBLEM-37

Briefly explain why a very high voltage is necessary when transmitting electrical energy from a power station.

PROBLEM-38

Explain why when using a magnifying glass the image distance should be approximately 25cm from the eye for the object to be viewed clearly.

PROBLEM-39

How do people with short-sighted defect differ from those with long-sighted defect?

PROBLEM-40

What is the effect of moving the pinhole camera closer to the object?

PROBLEM-41

Why water used as a coolant in car engines?

PROBLEM-42

Distinguish between Heat and Temperature

PROBLEM-43

Briefly explain why do different materials possess different specific heats?

PROBLEM-44

Explain the function of the following apparatus in the calorimeter

- i) Stirrer ii) Thermometer iii) Wooden cover and cotton wool

PROBLEM-45

a) A container holds a gas at 0°C . To what temperature must be heated for the pressure to double (Assume that the volume of the container does not change)

b) Why is the coefficient of static friction is always greater than that of kinetic friction?

PROBLEM-46

Briefly explain the following

- i) Why a hand of an oar is wrapped with a sticky tape
ii) Why a rough clothes have better cleaning qualities as compared with slippery one

PROBLEM-47

A good cooking vessel should be black on the outside and not shiny white. Explain

PROBLEM-48

a) Explain four (4) factors affecting resistance of a conductor

b) Describe two (2) defects of simple cell

PROBLEM-49

Explain what happens when water in a container heated?

PROBLEM-50

Give the reason why gas expand more than liquids or solids when all are equally heated

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