HOME PACKAGE
FOR ORDINARY LEVEL PHYSICS
FORM TWO

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Problem 01

Your classmate has an urgent message to relay to his parent. If the message were to appear in writing, which methods you will advice him to use? Name four

Problem 02

On your way back home, you hear two students arguing that acceleration is a scalar quantity because it describes the rate of the change of speed of an object. How will you correct their argument?

Problem 03

(a) What is the importance of mathematics in physics?

(b) You wake up in the morning and find your classmate at the school kitchen shouting "The morning porridge is very hot! Its temperature is 350k" What temperature is this on the Celsius scale.

Problem 04

Eliah and Elisha had an argument about the definition of physics. As a physicist student define the term physics to Eliah and Elisha.

Problem 05

The importance of physics in our daily live is highlighted by the many application that physics has made possible in people's lives and which have become one of the indispensable necessities of life, however most people are not aware of this

Problem 06

You have been selected as one of the few students to guide parents and guardians through laboratory tour on a visitation day. As a form one student you are required to inform them of the rules and regulations they must abide by as they enter in the laboratory for the tour (Give five points)

Problem 07

Your elder brother has just received his form six results and is soon going to apply for a university. You brother is however not sure of which careers path he should apply for. He needs someone to guide him through the right career opportunities. As a physics student, identify all possible Physics careers he can pursue at the university. (Give five points)

Problem 08

Fundamental quantities are basics quantities from which all other are derived from and they are independent of others. As physics student, what are those quantities the statement is referring to?

Problem 09

(a) A teacher entered the class with an instrument which he used to measure the internal dimensions of the beaker. As a physics student, you are required to draw well labeled diagram of such an instrument.

(b)Explain the functions of each part of the instrument in 9 (a) above.

Problem 10

Your friend wants to make a piece of iron to behave like a magnet. What are the possible ways will you advise your friend to use so as to success process.

Problem 11

A physics teacher was on a rough road. The right front tyre of the car run over a sharp object and got a puncture. Describe the instrument used by a teacher to rise the car so as to change the tyre

Problem 12

A form two student was found sick and was carried horizontally by her fellow students to the hospital. Explain whether there is work done or not? Give reasons (s) for your answer.

Problem 13

Form two students were arguing that force is a vector quantity while others said that it is a scalar quantity. You as an expert of physics explain whether force is a vector or a scalar quantity

Problem 14

Fire is very important in everyday life but also does not lack harm, but those harms are also avoidable. Basing on dangerous area, what precautions will you as a form one student provide so that the fire users can avoid those harms? Give four points.

Problem 15

On your way from school suddenly you find your uncle fainted near you home place about two minutes ago and the hospitals is about three kilometers from home. What will you do to help him before you decide to make him to hospital, provide six (6) points?

Problem 16

A teacher rubs balloons with a cloth so that the balloon gains positive charge. She then holds the balloon close to her head and hair rises.

(a) Explain in the terms of moving charges, how the balloon become positively charged.

(b) Explain why the teacher's hair rises

(c) Suggest why the experiment does not work so well when the air humid (damp)

Problem 17

Some people prefer to prevent their car from becoming charged. They do this by fixing a metal strap underneath the car. The metal trap rubs on the ground as the car moves.

(i) Suggest why it is safer to have no electrical charge on car.

(ii) Explain how the metal strap prevents a car from becoming charged

Problem 18

(a) A copper calorimeter a piece of dry flannel is placed on top of an electroscope and a dry polythene rod is pushed in. there is no deflection of the electroscope, but when the rod is pulled out the leaves diverge.

(i) Explain these observations.

(ii) Why do the flannels have to be dry?

(b)If, after the rod is pulled out, it is quickly placed in a similar empty calorimeter on a similar electroscope.

(i) What will happen? Explain

(ii) If instead the rod is brought near to metal-coated pith ball is suspended by a nylon thread, the pith ball is first attracted to the rod, touches it and is then repelled. Explain.

Problem 19

(a) If you have charged an electroscope by contact with a positively charged object, describe how you could use it to determine the charge of other object. Specifically, what would the leaves of the electroscope do if other charged objects were brought near its knob?

(b) When a glass rod is rubbed with silk, it becomes positive the silk becomes negative-yet both attract dust. Does the dust have a third type of charge that is attracted to both positive and negative? Explain.

Problem 20

The student investigates the effect of putting charged balloons on different surfaces. They put one charged balloon against metal cabinet and one charged balloon against a wall.

(i) Describe what happens to the charge on the balloon when it touches the metal cabinet.

Problem 21

Your physics teacher has demonstrated how to use the syringe. You have observed carefully and use the syringe to take in and expel different fluids. List down situation in our every daily life in which the syringe is used.

Problem 22

On your way back home, you hear three form two students arguing that pressure exerted by the atmosphere increase with the increase in altitude from the mean sea level. How will you correct them their argument?

Problem 23

A form one student was arguing that, if you dropped dry wood into water obviously you find it floating. Explain the factors affecting the forces enabled the dry wood to floats in water.

Problem 24

Wake up in the morning and find you classmate at the school kitchen shouting while touching nearby hinges of the kitchen door. "The kitchen door is very difficult to open at this morning" What is reason of the difficultness of the door to open?

Problem 25

Elisha is a form one student at Mbagala Secondary, the physics teacher has instructed him to cut a piece of soap by u sing two wires varying in thickness. Elisha at first used very thin wire to cut a bar of soap into half and later he used a thick piece of wire to cut a similar bar of soap into half. What is the difference when a bar of soap is cut using a thin wire and when using a thick wire?

Problem 26

A form one student performed an experiment in the laboratory to determine density of special stone provided by his teacher. He used an electronic balance to weight the mass of the stone, which was found to be 178 g. the stone was then completely immersed in water of initial volume 60cm^3 contained in the measuring cylinder. If final volume was 80cm^3, what density of the student got?

Problem 27

The day before yesterday Ziza and his friend were riding a bike in their street, unfortunately Ziza hit a chicken died instantly. Today when he came to school, he went through the places where the chicken was hit and he smelled a very bad smell. Briefly explain the phenomenon governing this observation.

Problem 28

All form two students involved in performing physics experiments in the laboratory must be aware of safety measure. Give four (4) measures to reduce risk during experiment.

Problem 29

Madam Ellen is physics teacher at Urban Secondary School, during her lesson when she was teaching forms of energy in form one class; she decided to perfome demonstration of stretching and compressing the spring. Which kind of energy is stored in the spring as a result of reversible deformation?

Problem 30

Why in an atom electrically neutral?

Problem 31

Explain why it is advised to connect bulbs in parallel arrangement during installation of electricity in most buildings.

Problem 32

Explain why in a solid state the force of attraction between molecules is greater?

Problem 33

Why is the mechanical advantage less than three in a single rope three pulley's system?

Problem 34

Briefly explain the motion of an object under gravity by taking an example of a ball thrown straight up into the air.

Problem 35

Why does a body float in a fluid?

Problem 36

Why is there no work done the books when are caries horizontally?

Problem 37

Why it is easier to cut a bar of soap using a thin piece of wire than a thick one?

Problem 38

How does the centre of gravity of an extended body differ from the centre of mass of an object?

Problem 39

Why is a person climbing up a mountain observed to bend forward?

Problem 40

Explain how an inclined plane makes it easier to move load from a lower to higher position.

Problem 41

Why particles in a solid state are closely packed?

Problem 42

Why do bean seem to swell up when soaked in water for overnight?

Problem 43

Why do racing cars designed in such a way that their centers of gravity are lowered?

Problem 44

What happens when the body moves with a constant speed?

Problem 45

Explain why petrol road tankers usually have a length of metal chain hanging down touching the ground.

Problem 46

Why mechanics prefer to use a spanner of longer stem than spanner of shorter stem to tight or loosen a nut on a bolt

Problem 47

47. Use the concept of pressure to explain why buildings are constructed thicker or wide foundations.

Problem 48

A woman of mass 64kg is standing on sand soil with high heel shoes of area $2cm^2$. Why her heel sink into the ground.

Problem 49

Explain why the strength of a magnet cannot increase beyond limit?

Problem 50

Explain why an increase in temperature weakens or destroys the magnetism of a magnet.

Problem 51

State the reasons why an astronaut in space needs a special space suit to prevent blood from boiling?

Problem 52

Why an astronaut in space can float without falling?

Problem 53

When a lighted match is brought near a negatively charged electroscope, the leaf of the electroscope collapses. Why?

Problem 54

What happens when a wire is connected to charged capacitors?

Problem 55

When a bus starts or stops moving, passengers tend to be jerked forward or backward. Why?

Problem 56

Racing cars rarely get accidents despite their high speed. Why?

Problem 57

Why in a race competition, one should kneel down when starting the race?

Problem 58

Explain why a person doing high jump prefers to land on sand or plastic foam instead of the ground.

Problem 59

Why a car tends to skid on muddy road?

Problem 60

A rod is brought close to the cap of a charged electroscope causing the leaves of the electroscope to collapse. Why?

Problem 61

Briefly explain, when does a force become weight?

Problem 62

When is a body aid to be in equilibrium?

Problem 63

Briefly explain why danger signs at along the road as well as tail and brake lamps of motor vehicles rear are painted in red?

Problem 64

Why convex mirrors are use as driving mirrors

Problem 65

Explain why when water spreads, it wets the surface spilled on it.

Problem 66

When is a body said to be in a stable equilibrium/

Problem 67

Briefly explain how geothermal energy can be harnessed?

Problem 68

Does wind itself possess energy? Explain

Problem 69

Briefly explain how a hydrometer can be used to measure the relative density of a liquid?

Problem 70

Why does a solid body weight more in air than when immersed in a liquid?

Problem 71

Explain how a gas exerts pressure on the walls of its container

Problem 72

Why when a needle is carefully placed on water, it does not sink?

Problem 73

Give reasons why it is not sensible to rub the canvas of a tent in wet weather?

Problem 74

Briefly explain why a bubble of air increases in volume as it rises from the bottom of the pond to the surface.

Problem 75

Briefly explain why nylon clothes crackle when undressing?

Problem 76

Petrol road tankers usually have a length a length of metal chain hanging and touching the ground. Why?

Problem 77

What would happen when an ebonite rod is rubbed with fur?

Problem 78

What would happen when a glass rod is rubbed with silk?

Problem 79

Briefly explain why a person at great height suffers from nose bleeding?

Problem 80

Why it is painful to walk barefoot on a road that is covered by pebbles?

Problem 81

Briefly explain why seat-belts are designed to stretch in a collision.

Problem 82

What happens to the gas molecules when a gas is compressed at constant temperature?

Problem 83

What effect does an increase in temperature have on the density of most liquids?

Problem 84

Briefly explain why a ship sinks deeper in fresh water than in sea water.

Problem 85

How can the moment of force be increased considerably in practical life? With examples explain.

Problem 86

Briefly explain why the handle of a door is near its outside edge?

Problem 87

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

Problem 88

Why is oil used as lubricants?

Problem 89

Why mercury is preferred in clinical thermometer as a thermometric liquid to water or alcohol?

Problem 90

Why are the recoil velocity of a gun much less than the velocity of the bullet? Explain using the principle of conservation of linear momentum

Problem 91

Explain why racing cars should wide wheel track?

Problem 92

State why a bus carrying standing passengers has a higher chance of overturning than one carrying seated passengers.

Problem 93

Why should a mechanic choose a long spanner to undo a tight nut?

Problem 94

A sharp needle was brought close to the cap of a charged gold-leaf electroscope. Explain why the leaf. Explain why the leaf collapsed.

Problem 95

It is more difficult to balance a nail on its tip than on its base. Explain

Problem 96

Does an object have to be at rest in state of equilibrium? Explain your answer.

Problem 97

The efficiency of a simple machine is never 100%. Why?

Problem 98

How a body becomes positively charged?

Problem 99

Explain how a body becomes negatively charged?

Problem 100

Explain why nylon cloths crackles as you undress?