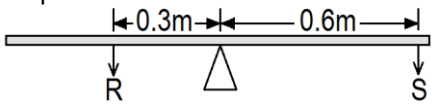
S.4 DISCUSSION QUESTIONS PAPER 2

SET ONE

1. (a) (i) Define moment of a force .
(ii) State the principle of moments.
(b) Describe an experiment to determine the mass of an object using a metre rule and a single known mass.
(c) A uniform beam of weight 2.5 N is pivoted at its midpoint as shown below.



The beam remains in equilibrium when forces R and S act on it. If R is 5N, find
(i) the value of S.
(ii) the reaction at the pivot.
(d) Write down two applications of moments.

2. (a) With the aid of a well labeled diagram briefly explain how a pure spectrum may be produced.
(b) (i) What are primary colours? Name them.
(ii) Explain briefly what happens when white light falls on a green body.
(c) With the aid of a labeled diagram describe how a lens camera works.
(d) Light traveling in water is incident at a water air surface at 30°. What is the angle of refraction if the refractive index of water is 1.33?

3. (a) Define specific latent heat of vaporization .
(b) A calorimeter of mass 35.0g and specific heat capacity 840 J kg^{-1} K^{-1} contains 143.0 g of water at 7°C.Dry steam at 100°C is bubbled through the water in the calorimeter until the temperature of the water rises to 29°C. If the mass of steam which condenses is 5.6g and the specific heat capacity of water is 4200 J $kg^{-1}K^{-1}$.
(i) Calculate the heat gained by the water and calorimeter.
(ii) Obtain an expression for the heat lost by the steam in condensing at 100°C and in cooling to 29°C.
(iii) Find the specific latent heat of vaporization of the water.
(c) Explain in terms of molecules what is meant by a saturated vapour.
(d) Briefly describe one application of evaporation

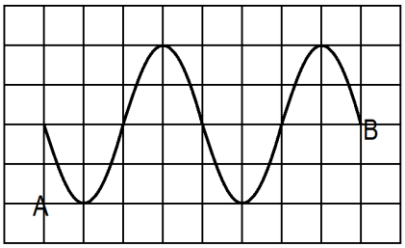
4. (a) Define the joule. .
(b) (i) What is linear momentum?
(ii) State the law of conservation of linear momentum.
(c) A bullet of mass 20g is fired into a block of wood of mass 400g lying on a smooth horizontal surface. If the bullet and the wood move together with a speed of 20 ms^{-1}, calculate
(i) the speed with which the bullet hits the wood.
(ii) the kinetic energy lost.
(iii) State the energy changes involved.

5. (a) (i) Draw a labelled diagram of a lead acid accumulator.
(ii) Write down three precautions necessary to prolong the life of an accumulator.
(iii) State two disadvantages of a nife cell over a lead acid cell.
(b) What is meant by the following:
(i) Electromotive force
(ii) Internal resistance of a cell?
(c) A cell is connected in series with an ammeter and a variable resistor. The potential difference V across the resistor varies with current I.
Sketch a graph of V against I and show how you can use it to determine the e.m.f and internal resistance of the cell.

6. (a) State three differences between sound and light waves.
(b) (i) Explain how stationery waves are formed.
(ii) State three main characteristics of stationery waves.
(c) (i) Define the terms frequency and wave length as applied to sound.
(ii) Describe an experiment to demonstrate resonance in sound.
(d) The velocity and frequency of sound in air at a certain time were 320ms^{-1} and 200Hz respectively. At a later time, the air temperature changed causing the velocity to change to 340 ms^{-1}. Determine the corresponding change in the wave length if the frequency remained unchanged.

7. (a) (i) What is meant by cathode rays?
(ii) With the aid of a labeled diagram describe how cathode rays are produced by thermionic effect.
(b) With reference to the cathode ray oscilloscope describe:
(i) the function of the timebase.
(ii) how the brightness is regulated.

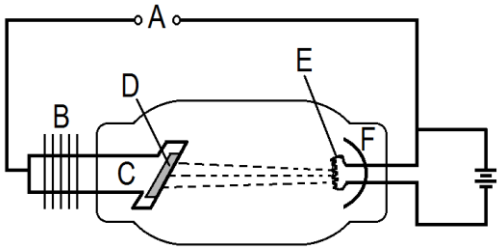
(c) A cathode ray oscilloscope (CRO) with time base switched on is connected across a power supply, The wave form obtained is as shown in the figure below:



Distance between two lines = 1cm

(i) Identifythe type of voltage generated by the power supply.
(ii) Find the amplitude of the voltage generated if the voltage gain is 5 V cm^{-1}.
(iii) Calculate the frequency of the power source if the timebase setting on the CRO is 5.0×10^{-3} s cm^{-1}.

8. (a) (i) What is meant by a radio-isotope?
(ii) State one medical, one biological and one industrial use of radioisotopes.
(b) Describe what happens when a beam of radiations consisting of $\alpha-$, $\beta-$ and $\gamma-$ rays is incident on a thin sheet of lead.
(b) Describe what happens when a beam of radiations consisting of α, β and γ rays is incident through an electric field.



(c) The diagram shows the essential parts of an x-ray tube.
(i) Name the parts labeled A,B,C,D,E and F.
(ii) State the functions of each part.
(iii) Describe how x-rays are produced.
(d) What safety precautions must be taken in an x-ray laboratory?

SET TWO

1. (a) Describe an experiment to determine the acceleration due to gravity using a simple pendulum.
(b) Write down Newton's equations of motion; identifying clearly the symbols used.
(c) A car starts from rest and accelerates at 20 ms^{-2} for 30 seconds. It maintains the velocity reached for another 30 seconds before being brought to rest in the next 15 seconds.
(i) Sketch a velocity time graph for the motion.
(ii) Determine the total distance traveled by the car.
(d) Two balls, one dropped from rest and another thrown horizontally from the same height reach the ground at the same time. Explain.
(e) Three women of average mass 60kg are standing in a lift. Find the reaction force of the floor of the lift when the lift is accelerating upwards at 3 ms^{-1}.

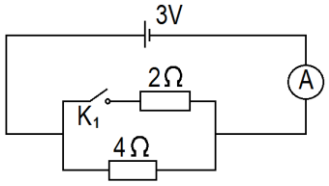
2. (a) Define the following terms as applied to waves:
(i) amplitude
(ii) frequency
(b) (i) What is meant by interference of waves?
(ii) Using a labelled diagram show how the circular water waves are reflected from a straight barrier.
(c) (i) Using a labelled diagram, show the bands of the electromagnetic spectrum in order of increasing wave length.
(ii) Calculate the frequency of a radio wave wavelength 2m.
(d) With the aid of a diagram, show dispersion of white light by a prism.

3. (a) (i) What is a magnetic field?
(ii) Sketch the magnetic field between two North-poles of two bar magnets facing each other and show the neutral point on it.
(b) With the aid of a well-labeled diagram describe the structure and mode of action of a moving coil loud speaker.
(c) State the factors which determine the magnitude of a force exerted on a current carrying conductor in a magnetic field.
(d) A DC motor has an armature resistance of 4Ω. If it draws a current of 10 A when connected to a supply of 200V, calculate the,
(i) power wasted in the windings.
(ii) efficiency of the motor.

4. (a) Describe a simple model of the atom.
(b) Define the following
(i) Atomic number
(ii) Isotopes of an element.
(c) State two differences between an alpha particle and a beta particle.
(d) (i) What is meant by nuclear fission and nuclear fusion.
(ii) Give one example where each one occurs.

(e) The half life of a radioisotope is 24 days. Calculate the mass which has decayed after 72 days if the original mass is 0.64 g.

5. (a) Define the following terms;
   (i) Electromotive force (emf); and
   (ii) Internal resistance of a cell
   (iii) Write down two factors that determine internal resistance.
   (b) Write down six ways the life of an accumulator can be prolonged.
   (c)



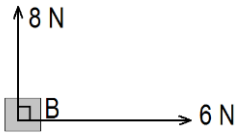
The figure above shows an ammeter A, two resistors 2Ω and 4Ω connected to a source of e.m.f of 3 V and negligible internal resistance.
Determine the reading of the ammeter if
(i) K_1 is open.
(ii) K_2 is closed.

(d) An electric fire, a lamp and an electric drill rated at 2000W, 100W and 300W respectively are connected in parallel across a 240V main.
(i) Find the power taken from the mains.
(ii) Find the current supplied by the mains.

6. (a) (i) What are cathode rays?
(ii) State two differences between gamma rays and cathode rays.
(b) Outline one experiment you can carry out to distinguish between the three radiations that are emitted by radioactive materials.
(c) A radioactive element has a half life of 4minutes. Given that the original count rate is 256 counts per minute. Find the time taken to reach a count rate of 16 counts per minute.
(d) With the aid of a well labeled diagram, explain how the cathode ray oscilloscope works.

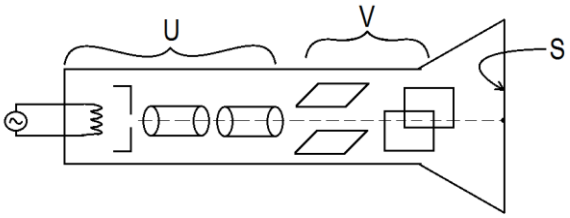
SET THREE

1. (a) (i) Distinguish between the terms scalar and vector quantities.
Give two examples of each.
(ii) State the conditions under which a body can be in mechanical equilibrium.
(iii)

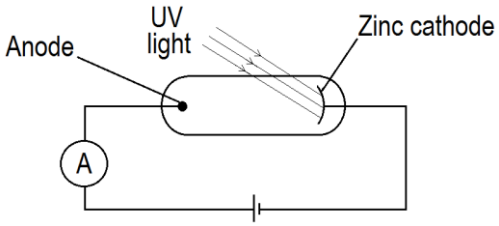


A body B is acted on by two forces 8N and 6N at right-angles as shown above. Find the magnitude of the third force needed to keep the body in equilibrium.
(b) What do you understand by the acceleration due to gravity?
(c) A 5 kg mass is dropped from a height above the ground and hits the ground after 4.5 s.
(i) Find the velocity of the mass as it hits the ground.
(ii) Calculate the kinetic energy of the mass as it hits the ground.
(iii) Determine the height from which the.mass was dropped.
(iv) State the energy changes of the mass.

2. (a)



The figure above shows the main parts of a cathode ray oscilloscope.
(i) Identify the parts labelled U, V and S.
(ii) Briefly describe the functions of each of the parts labelled in (i) above.
(b) (i) Name the particles emitted by radioactive materials.
(ii) Draw diagrams to show the paths of the particles named in (b)(i) above in a cloud chamber and describe the paths.
(c)



A zinc Cathode was enclosed in an evacuated glass bulb as shown above. The anode and cathode were then connected to an ammeter and source of emf E. When the cathode was irradiated with ultraviolet radiations the ammeter gave a reading.
(i) Explain why the ammeter gave a reading.
(ii) A gas was gradually introduced into the glass tube. Explain what happened.

3. (a) Explain the difference between transverse and longitudinal waves. Give one example of each.

(b)

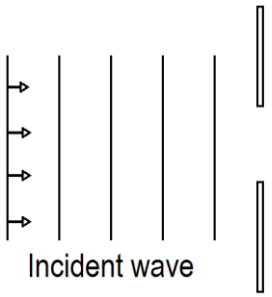


Fig iv above shows a vibrator generating plane water waves in a ripple tank. The waves are incident on a barrier with an opening as shown.

(i) Re-sketch the diagram to show the water waves after passing through the opening.

(ii) Explain with aid of a diagram what would happen to the waves if the opening is narrowed.

(c) An object of height 4cm is placed perpendicular on the principal axis at a distance of 45cm from a converging lens of focal length 15cm. By graphical method, determine;

(i) the position of the image.

(ii) the magnification.

4. (a) Sketch the electric field pattern for the following:

(i) Two negative charges close to each other.

(ii) A positively charged hollow conducting sphere.

(iii) Two oppositely charged parallel metal plates.

(b) Explain the following observations:

(i) the leaf of a positively charged electroscope falls when the cap is touched.

(ii) When a positively charged conductor is lowered into an ice-pail placed on the cap of an uncharged electroscope, the leaves diverge. When the conductor touches the inside of the pail, the divergence of the leaves does not change, but when the conductor is removed and tested, it shows no charge.

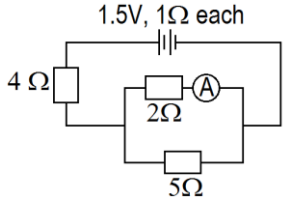
(c) Explain how a lightning conductor safeguards a building against lightning.

5. (a) State the energy change which takes place in;

(i) a dry cell (ii) a thermopile

(b) With the help of a well labeled diagram, explain how a simple d.c generator works.

(c) The figure below shows two cell of emf 1.5 V and internal resistance 1Ω each connected to a circuit of resistances, 3Ω and 5Ω.



(i) What is the reading of the ammeter A.

(ii) Calculate the power dissipated in the 4Ω resistor.

6. (a) Define the following terms as applied to machines:

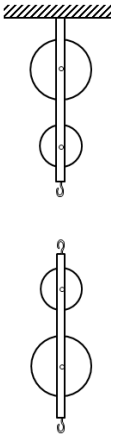
(i) Mechanical advantage.

(ii) Efficiency.

(b) (i) State two reasons why the efficiency of a machine is always less than 100%.

(ii) Write down two ways you can use to improve the efficiency of a machine.

(c) The figure below shows a pulley system in which an effort is applied to raise a load L.



(i) Copy the diagram and indicate the forces acting on the strings.

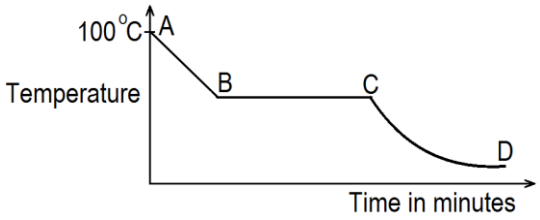
(ii) What is the velocity ratio of the system.

(iii) How far will the load move if the effort moves through 2.4m?

(iv) What etfort will just raise a load of 960 N if the mechanical advantage is 2.4?

(v) Use your results above to calculate the efficiency of the system.

7. (a) The figure below shows a cooling curve for a substance which is in iiquid form at 109°C



(i) In what states is the substance over the regions AB, BC and CD of the curve?(3 mks)

(ii) Use the kinetic theory of matter to explain the difference between the states of the substance over the regions AB and CD.

(b) (i) Define specific heat capacity.

(ii) The same amount of heat which raises the temperature of 0.1 kg of water from 25°C to 60°C is used to heat a metal rod of mass 1.7kg and specific heat capacity 300 J $kg^{-1}K^{-1}$. If the original temperature of the rod is 20°C, calculate the final temperature of the rod.

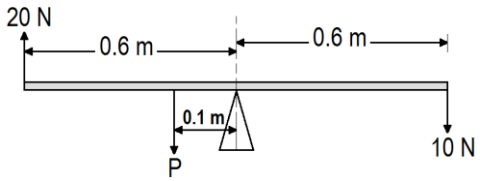
(c) (i) What is meant by a saturated vapour?

(ii) EXplain why the boiling point of a liquid depends on altitude.

8. (a) Define the term displacement.
   (b) Two vehicles A and B accelerate uniformly from rest. Vehicle A attains a maximum velocity of 30ms^{-1} in 10 seconds while vehicle B attains a maximum velocity of 40 ms^{-1} in the same time. Both vehicles maintain these velocities for 6 seconds. They are then decelerated such that A comes to rest after 6 seconds while B comes to rest after 4 seconds.
      (i) Sketch on the same axes a velocity-time graph for the motion of the vehicies.
      (ii) Calculate the velocity of each 18 seconds after the start.
      (iii) How far will the vehicles be from one another during this moment.
   (b) (i) State the principle of conservation of linear momentum.
      (iii) A moving trolley P of mass 100g collides with a stationary trolley Q of mass 200g. After collision the two trolleys move together with a velocity of 2 ms^{-1} Determine the initial velocity or trolley P.

SET FOUR

1. (a) (i) Define moment of a force.
   (ii) State the principle of moments.
   (b) Descnbe an experiment to determine the mass of an object using a metre rule and a singie known mass.
   (c)



Forces of 20N, 10N and P act on a uniform rod pivoted at its centre as shown above. Find the magnitude of P if the system is in equilibrium.

   (d) A block and tackle pulley system has two pulleys in the lower block and three in the upper block. Sketch
      (i) the diagram of this pulley system.
      (ii) a graph showing the variation of mechanical advantage with load.
      (iii) Explain why the efficiency of such a pulley system is less than 100% .

2. (a) State the
   (i) law of conservation of momentum.
   (ii) factors on which linear momentum of a body depends.
   (b) Explain what happens to a passenger in a bus when the driver brakes suddenly.
   (c) (i) State Newton's laws of motion.
      (ii) Explain the forces acting on a block of wood resting horizontally on a table.
   (d) With the aid of a labelled diagram describe an experiment to measure the uniform velocity of a body using a ticker timer.

3. (a) Define the term specitic latent heat of vaporization.
   (b) Describe an experiment to determine the specific latent heat of vaporization of steam.
   (c) A copper container of heat capacity 600 J kg^{-1} K^{-1} contains 0.5 kg at water at 20 ^{0}C. Dry steam is passed into the water until the temperature of the container and water reaches 50 ^{0}C. Calculate the mass of steam condensed.
   [Latent heat of vaporisation of water = 2260000 J kg^{-1} Specific heat capacity =4200 J kg^{-1} K^{-1}]
   (d) (i) What is meant by saturated vapor pressure?
      (ii) Explain what may happen when one is to cook food from a very high attitude.
   (e) What is an equation of state.

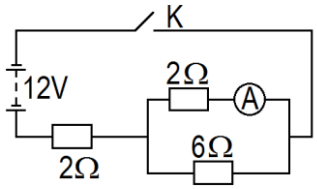
4. (a) What is meant by a light ray?
   (b) With the aid of a labeled diagram, describe the structure and working of a simple lens camera.
   (c) State two differences between the human eye and the lens camera.
   (d) An object of height 7.0 cm is placed at a distance of 15 cm from a convex lens of focal length 20 cm.By scale drawing determine the
      (i) height of the image.
      (ii) image distance
      (iii) linear magnification.
   (e) Calculate the power of lens of focal length 20 cm.

5. (a) Define the following terms as applied to waves
      (i) amplitude.
      (ii) frequency.
   (b) (i) What is meant by interference of waves?
      (ii) Using a labeled diagram , show how the circular water waves are reflected from a straight barrier.
   (c) (i) Use a labeled diagram to show the bands of the electromagnetic spectrum.
      (ii) Calculate the frequency of a radio wave of wave length 2m.

(d) Explain how sound waves travel from a drum into our ears when it is sounded

6. (a) (i) What is a magnetic field?
(ii) State the law of magnetism.
(b) (i) Explain with the aid of a diagram how a steel bar can be magnetized by the single touch method.
(ii) Sketch the magnetic field pattern around two bar magnets whose north poles face each other.
(c) With the aid of a labeled diagram describe how a simple ac generator works.

7. (a) Define the following terms
(i) The volt
(ii) Electrical resistance
(b) List six ways by which the life of an accumulator can be prolonged.
(c) A battery of emf of 12 V and negligible internal resistance is connected to resistances 2Ω, 2 Ω, 6 Ω as shown below.



Find the reading of the ammeter when the switch K is closed.
(d) State three advantages of alternating current over direct current in power transmission.
(e) Sketch the current versus voltage variation for a semi-conductor diode.

8. (a) What are X-rays?
(b) (i) With the aid of a labeled diagram , describe how X-rays are produced in an X-ray tube.
(ii) State **one** medical use and **one** industrial use of X-rays.
(c) Define the following:
(i) Nuclear fission.
(ii) Nuclear fusion.
(d) A radioactive nuclide $^{224}_{88}A$ decays by emission of two alpha particles. The resulting nuclide **B** emits three beta particles resulting into a nuclide **Y** which emits gamma rays. Determine the atomic mass and the number of protons of Y and write a balanced equation for the decay.
(e) (i) What is meant by the term **half-life** of a radioactive substance.
(iii) The half-life of Radium is 1620 yrs. How long will it take 16g of Radium to decay to 2g?

SET FIVE

1. (a) With the aid of a labelled diagram explain dispersion of white light by a glass prism.
(b) (i) What is a secondary colour?
(ii) Name two secondary colours.
(c) Explain the appearance of a fly with red, yellow and black stripes in white light.
(d) (i) An object of height 0.5 cm is placed 2 cm in front of a convex lens of focal length 3 cm. By graphical method determine the position and height of the image.
(ii) State two applications of convex lenses.

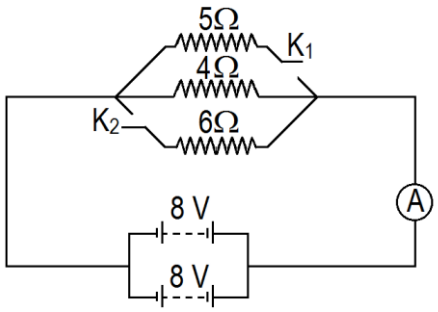
2. (a) Define the term “specific latent heat of fusion" of a substance and state its unit.
(b) With the aid of a labelled diagram describe a simple experiment to show how volume of a fixed mass of gas varies with pressure at constant temperature.
(c) Explain why it is uncomfortable to walk barefooted in the beach on a hot afternoon whereas the water remains relatively cool.
(d) A 100g Copper calorimeter containing 200g of water at 25°C is placed in a refrigerator. Calculate the amount of heat which must be removed from the calorimeter and contents to cool to -5°C.
[c_c = 400 $Jkg^{-1}K^{-1}$, L_f = 33600 Jkg^{-1}, c_w = 4200 $Jkg^{-1}K^{-1}$]

3. (a) Describe an experiment to determine the acceleration due to gravity using a simple pendulum.
(b) Distinguish between Scalar and vector quantities. and give two examples of each.
(c) A car starts rest and accelerates at 20 ms^{-2} for 30 seconds.It maintains the velocity reached, for another 30 seconds before being brought to rest in the next 15 seconds.
(i) Sketch a velocity-time graph for the car.
(ii) Determine the average velocity of the car.
(d) Two balls, one dropped from rest and another thrown horizontally from the same height reach the ground at the same time. Explain

4. (a) State the law of Magnetism
(b) Explain how “keepers” are used to store magnets
(c) With the aid of a labeled diagram describe how a magnet can be made using an electric current, from a bar of magnetic material.
(d) What is meant by;
(i) Magnetic meridian?
(ii) Neutral point in a magnetic field?
(e) Draw the magnetic field pattern.

(i) due to an electric current in a circular coil.
(ii) around two bar magnets placed close to one another with opposite poles facing each other.

5. (a) (i) Name two advantages which lead-acid accumulator has over a dry cell.
(ii) What is polarization and how can it be prevented?
(iii) Explain the purpose of the hydrometer when recharging an accumulator.
(b) In an experiment to verify Ohm's Law it was necessary to maintain the temperature constant.
(i) State Ohm's law
(ii) Why was the temperature maintained constant?
(c)



Study the figure below and answer the questions that follows: Determine the;
(i) Current indicated by ammeter, A, when K_1 is open and K_2 is closed.
(ii) Current shown by A when both K_1 and K_2 are closed
(iii) Current shown by A when the three resistors are connected in series.

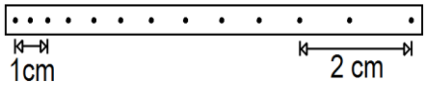
6. (a) A radioactive nuclide $^{236}_{92}U$ decays by emission of two alpha particles and two beta particles to form a nuclide
(i) What is meant by a radioactive nuclide?
(ii) Give four differences between alpha and beta particles
(b) State four precautions that would have to be taken when handling radioactive materials.
(c) A certain mass of radioactive materials contains 2.4×10^{12} radioactive atoms. How many atoms will have decayed after 3200 years if the half- life of the material is 800 years.
(d) Explain briefly one industrial application of radioactivity
(e) Briefly describe how full wave rectification can be achieved.

7. (a) (i) State two factors which affect the frequency of the note produced by a string.
(iii) Why does the quality (timbre) of the sound produced by a violin differ from that produced by a piano?
(b) Describe an experiment to show that sound waves do not travel through a vacuum.
(c) A pipe is closed at one end has a length of 10cm. if the velocity of sound in the air of the pipe is $340 ms^{-1}$. Calculate;
(i) the fundamental frequency
(ii) the first overtone frequency
(d) State four differences between sound waves and electromagnetic waves.

8. (a) (i) What is meant by the strength of a material?
(ii) State the factors which affect the strength of a material.
(b) A spring of natural length 5cm extends by 2mm when a force of 1.8N acts on it. Calculate the extension and strain when a force of 10N is applied to the spring.
(c) Give four reasons why bicycles are made of hollow cylindrical structures.
(d) (i) State the composition of reinforced concrete
(ii) Explain why lower part of a ceiling of a building is made of reinforced concrete while the upper part is not reinforced.
(e) Explain how one can show that a beam on a building is a strut or a tie.

SET SIX

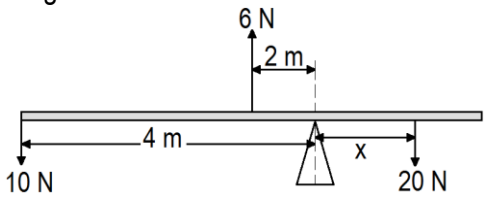
1. (a) Describe an experiment to determine the acceleration due to gravity using a ticker timer.
(b) Distinguish between scalar and vector quantims and give two examples of each.
(c) A car starts from rest and accelerates at 20 ms^{-2} for 30 seconds. It maintains the velocity reached for another 3 seconds before being brought to rest in the next 15 seconds.
(i) Sketch a velocity-time graph for the motion.
(ii) Determine the average velocity of the car.
(d) If the tape below was made by a ticker timer operating at a frequency of 100 Hz, find the acceleration.



2. (a) Define weight and state its unit.
(b) A person stands on a weighing scale placed on the floor of a lift and the lift is made to move downwards. Explain what happens to the reading of the weighing balance as the lift descends.

(c) Describe a simple experiment to determine the mass of a uniform metre rule using a known mass and a knife edge only.

(d) The diagram below shows a uniform beam.



Calculate the value of x when equilibrium is established.

(e) State the principle used in (d) above and state one application of the principle.

3. (a) (i) What is a saturated vapour?
(ii) Explain why the boiling point of a liquid depends on altitude.

(b) (i) Define specific heat capacity.
(ii) Describe an experiment to determine the specific heat capacity of a solid.

(c) A copper block of mass 250g is heated to a temperature of 145°C and then transferred to a copper calorimeter of mass 250g which contains 250cm^3 of water at 20°C
(i) Calculate the maximum temperature attained by water.
(ii) Sketch the graph to show the variation of temperature with time.

(d) (i) What is meant by the term temperature?
(ii) Give two physical properties which change with temperature.

4. (a) (i) With the aid of a labeled diagram explain how a C.R.O operates.
(ii) State two differences between cathode rays and x-rays.

(b) (i) Explain why a neutron is used to bombard a nucleus in a nuclear fission.
(ii) A radioactive nuclide $^{226}_{88}X$ decays by emission of an alpha-particle and two beta-particies to form nuclide Y. Write down the decay equation.
(iii) After 12½ days, 38.75g of a radioactive sample of the original mass 40g decays. What is the half life of the sample?

(c) Distinguish between hard and soft x-rays and give instances where each is applied.

5. (a) With the aid of a labelled diagram explain dispersion of white light by a glass prism.

(b) (i) What is a primary colour?
(ii) Name two primary colours.

(c) Explain the appearance of a flag with red, yellow and black stripes in White light.

(b) (i) An object of height 0.5 cm is placed 2 cm in front of a convex lens of focal length 3cm. By graphical method determine the position and height of the image.
(ii) State two applications of convex lenses.

6. (a) (i) Distinguish between node and antinode.
(ii) Explain how a stationary wave is formed.
(iii) Sketch stationary waves corresponding to fundamental note and first overtone in a closed pipe.

(b) (i) What is meant by resonance?
(ii) Describe an experiment to demonstrate resonance in air.

(c) A radio station transmits signals at a frequency of 103.7 MHz. Find the wavelength of the signals.

(d) Expiain how sound waves travel in air.

7. (a) State the law of magnetism.

(b) Explain how 'keepers' are used to store magnets.

(c) With the aid of a labeled diagram describe how a magnet can be made using an electric current, from a bar of a magnetic material.

(d) What is meant by
(i) magnetic meridian?
(ii) neutral point in a magnetic field?

(c) Draw the magnetic field pattern.
(i) due to an electric current in a circular coil.
(ii) around two bar magnets placed close to one another with opposite poles facing each other.

8. (a) Define the following:
(i) A volt
(ii) A kilowatt hour

(b) Explain how a fuse inserted in an electrical circuit protects the rest of the circuit against excess current

(c) An electric lamp is marked 100W, 250V
(i) What does this statement mean?
(ii) If the lamp is connected to a 250V mains, calculate the current taken.
(iii) What is the cost or running this lamp tor one day at Shs.50 per kWh.

(d) (i) State Ohm's law.
(ii) Describe an experiment to verify Ohm's law.

(e) Explain why an ammeter is made of very low resistance.

END

He who sweats more in training bleeds less in battle.