



Provincial Department of Education - NWP

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Name : Science Time : 2 hours

Part - I

● Answer all questions. Underline the correct or the most appropriate answer.

- (1) The answer gives for a multi- cellular microorganism out of the followings.
 - (1) Virus
 - (2) Fungi
 - (3) Bacteria
 - (4) Euglena

- (2) The hearing frequency of the human ear is,
 - (1) 2 Hz - 20 Hz
 - (2) 20 Hz - 200 Hz
 - (3) 20 Hz - 20000 Hz
 - (4) 200 Hz - 20000 Hz

- (3) The physical methods that can be used to remove chaff and sand from rice are,
 - (1) Panning and winnowing
 - (2) Vapourization and Panning
 - (3) Panning and Fractional distillation
 - (4) Crystallization and Vapourization

- (4) Which of the following is the reason to consider the force as a vector quantity?
 - (1) Having a line of action and a point of application.
 - (2) Having a point of application and a definite direction.
 - (3) Having a magnitude and a point of application.
 - (4) Having a magnitude and a definite direction.


- (5) A - Sharpening a knife edge
 B - Making heavily loaded trucks and containers with a large number of wheels.
 C - Broadening the shoulder strap of a school bag.
 D - Using nails for the shoes of the players.
 Which answer gives the steps that are taken to reduce the pressure?
 - (1) A and B only.
 - (2) A and C only.
 - (3) B and C only.
 - (4) A, B and D only.

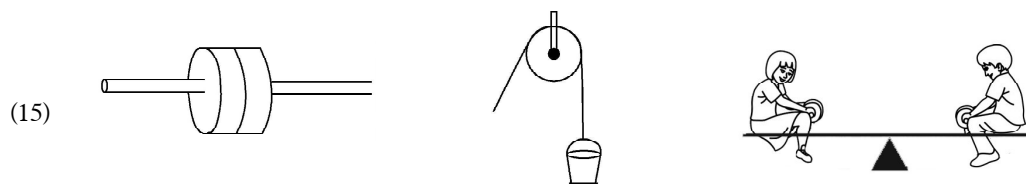
- (6) The chamber in the human heart which is connected with the pulmonary artery?
 - (1) Right atrium
 - (2) Right ventricle
 - (3) Left ventricle
 - (4) Left atrium

- (7) Which one is not a condition affected by the plant growth substances?
 - (1) The plant leaves getting yellowish colour due to the lack of fertilizers.
 - (2) Bending of the plant stem towards the sunlight.
 - (3) The growth of lateral buds rapidly after removing the auxilliary bud of a plant.
 - (4) The ripening of fruits rapidly when using chemical substances.

- (8) Select the correct answer which gives the animals that use false feet (pseudopodia) and flippers for their movements respectively.
- (1) Amoeba and Paramecium. (2) Euglena and Turtle
 (3) Turtle and Amoeba (4) Amoeba and Turtle
- (9) Which theory can be considered as the most accepted modern theory about the origin of the earth?
- (1) Big - Bang theory (2) Theory of special creation
 (3) Cosmozoic theory (4) Theory of spontaneous generation
- (10) What is the correct answer related to the plating copper metal on a iron / steel ring?
- (1) Steel ring should be connected to the positive terminal.
 (2) Steel ring should be connected to the negative terminal.
 (3) A copper plate should be connected to the negative terminal.
 (4) A copper plate should be used as the positive terminal.
- (11) Select the correct one which can be seen the seeds float on an orange juice solution.
- (1) At the instance of extracting orange juice.
 (2) When adding water to the orange juice.
 (3) When adding sugar to the orange juice.
 (4) When adding a drop of salt solution to the orange juice.
- (12) When considering the Bio - diversity on the earth, the bio - diversity hotspots means.
- (1) A zone with high temperature on the earth.
 (2) A zone which face to rapid extinction of living organisms.
 (3) A zone with highly changeable climatic conditions.
 (4) A zone with relatively high bio- diversity.
- (13) A green building means a building made to minimize or not at all of emitting the green house gases to the environment. A factor that should be considered when constructing a green building is,
- (1) Having a minimum plant cover. (2) Planning houses in order to minimize maintenance cost.
 (3) Giving maximum amount of light. (4) Having a maximum of waste materials.

(14) What is the surface which diffuse reflection takes place?

- (1)  (2) 
 (3)  (4) 



Select the answer which gives the simple machines shown above in order.

- (1) Wheel and axle, Pulley, Lever (2) Lever, wheel and axle, Pulley
 (3) Pulley, Lever, Inclined plane (4) Inclined plane, wheel and axle, Pulley.

- (16) Which answer is more accurately explained the lotus effect?
- (1) The water molecule is made up of nano scale.
 - (2) The water is repelled due to the pressure of charges on the surfaces of plant leaves.
 - (3) The fine arrangement of Nano- scales particles on the surfaces of plant leaves.
 - (4) There is a substance like oils the surfaces of plant leaves.
- (17) The correct strategy which can be followed by a person in a open area/ land, to prevent from lightning accidents.

	Strategy	Reason
1.	Standing on a insulate material such as a stone.	To prevent the tarnsferring of electricity due to the insulators.
2.	Walking towards a tree or a pillar	To have a medium to transfer the lightning
3.	Removing the mobile phones	To attract the lighting to charges
4.	Sitting or laying down on the earth	To reduce the height

- (18) Which of the following is not a suitable strategy to prevent the “global warming”?
- (1) Reforestation and conservation of forests.
 - (2) Adapting to a simple life style without using many materials.
 - (3) Using more electricity.
 - (4) using public transport media frequently.
- (19) What is the incorrect statement about using timber?
- (1) Timber is oldest building material that could be recyclable and renewable naturally.
 - (2) Valuable timber like ebony, satinwood and calawander wood can be seen in the wet zone oftenly.
 - (3) Durability, ability of creative attractive patterns and the colour are special characteristics of timber.
 - (4) Timber can be destroyed by termites and weewils by taking it as a food.
- (20) A - Hydrogen gas is evolved when electrolysing acidulated water.
 B - Gold cyanide solution is used as the electrolyte to plate gold.
 C - Copper can be plated on the anode when electrolyzing copper sulphate.
- The true statement are
- (1) A and B only
 - (2) A and C only
 - (3) B and C only
 - (4) All A B and C

(20 x 2 = 40 marks)

Part - II

- The first question is compulsory. Answer 4 more questions. Attach the answer script with the first part and hand - over.

01. (A) Think about the report you prepared by excavating the school garden. You were assigned to draw the composition of the environment with plants, animals and other components in a selected land area.
- (i) State one environmental component you observed. (1 mark)
 - (ii) What is the idea you got by keeping the picture with overlapping. (1 mark)
 - (iii) State one componet in the environment to observe bio diversity. (1 mark)
- (B) During your study about the environment, you studied about eco- system?
- (i) Define "an eco- system" (1 mark)
 - (ii) Give one example for an eco- system you identified. (1 mark)
 - (iii) Name 2 basic natural resources you can see in the surrounding env ironment. (2 marks)
 - (iv) What can you understand by "sustainable use of natural resources"? (1 mark)
- (C) Gradual development from simple organism to modern complex organism is called evolution.
- (i) Give one evidence for the evolution. (1 mark)
 - (ii) Name one place in Sri Lanka that give evidence on evolution of the mankind. (1 mark)
- (D) Lightning accidents cannot be prevented, but damages from lighting accidents can be minimized.
- (i) State a time period in which lightning activity is at its peak? (1 mark)
 - (ii) What is the term used to introduce a lighting which occurs by discharging of charges from cloud to surrounding air? (1 mark)
 - (iii) State 1 safety step to prevent lightning accidents. (1 mark)
- (E) The system specialized to transport materials throughout the human body is the circulatory system.
- (i) State one component in blood corpuscles (1 mark)
 - (ii) State one function performed by blood plasma (1 mark)
 - (iii) Name the universal recipient blood group. (1 mark)

02. (A) The organisms that cannot be seen with our naked eye when taking individually are called micro-organisms. They are widely spread and they show a great diversity.
- (i) Name a type of micro- organism except algae, bacteria and fungi. (1 mark)
 - (ii) State one difference in algae, than other micro- organisms. (1 mark)
 - (iii) Name the group of micro - organism used in following instances. (3 marks)

	Instance / Use	Group of micro- organism
1.	Production of golden rice.
2.	Production of bio - pesticides
3.	Production of antibiotics

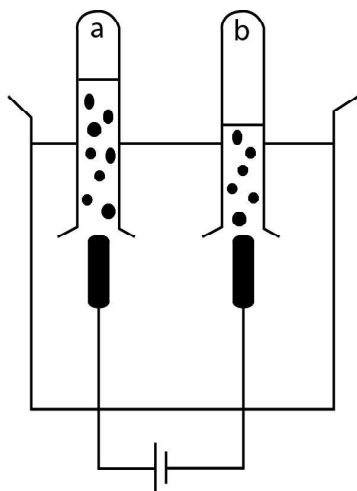
- (B) Human eye and ear do an important function to maintain the life. They are called sensory organs.
- What is the sense given by the human eye (1 mark)
 - Draw a ray diagram to show the formation of the image on the retina of the eye. (2 marks)
 - State an eye defect and an eye disease respectively. (1 mark)
 - State one strategy to prevent defects in the ear. (1 mark)

03. (A) Fill in the blanks using suitable words.
 Atom, sub atomic particles, nucleus, matter,
 elements and compounds, positive, negative

Substances which occupy space and having a mass are known as (i) They can be divided into two groups as pure and non - pure. (ii) belong to pure substances whereas mixture belong to non - pure substances. The smallest particle the matter made up of is the (iii) Neutrons, protons and electrons present in it are known as (iv) (4 marks)

- (v) A certain element contains 11 protons and 12 neutrons. State
- atomic number and
 - mass number. (2 marks)

(B)



A setup that can be used to obtain a hydrogen sample by electrolysis of acidulated water is given below.

- What is the gas produced in the other electrode except hydrogen gas. (1 mark)
- How can you identify hydrogen gas in the laboratory. (1 mark)
- Name one element that can be used as electrodes. (1 mark)
- In which test tube a and b, was hydrogen collected? Give reasons. (1 marks)

04. (A) A pull or a push can be considered as a force.
- State the standard unit to measure force. (1 mark)
 - Name one instrument in the laboratory to measure force in the laboratory. (1 mark)
 - State one possible change in the motion, when changing the point of application of force. (1 mark)
- (B) Pascal is used to measure pressure.
- Mention one factor affecting pressure. (1 mark)
 - A concrete post of weight 2000N is fixed in the ground of area 0.2m^2 . Calculate the pressure exerted by the post on the ground. (2 marks)

- (C) (i) Mention a relationship using mass (m) and volume (v) to calculate density. (1 mark)
- (ii) A diagram of a hydrometer is given below.



State to which positions a, b, c, are the three reading 600, 1000 and 1400 suitable. (2 marks)

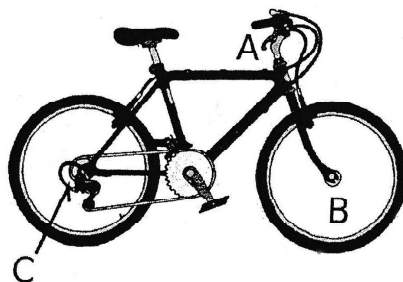
(D)



Draw a ray diagram show the image of the point object x through this mirror. (2 marks)

x

05. (A) (i) State the type of simple machines in the places A, B, and C in given bicycle. (3 marks)

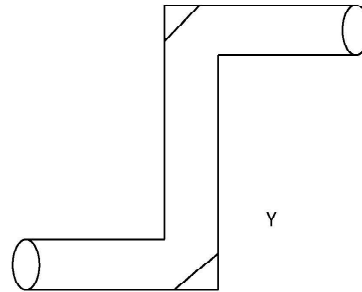
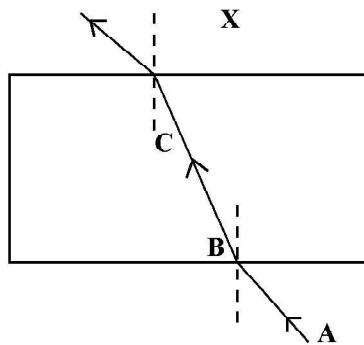


- (ii) What can you understand by "mechanical advantage" of a simple machine. (1 marks)
- (iii) As which type of simple machine do the locomotive organs of fish and birds behave? (1 mark)
- (iv) Bones and muscles of animals help their locomotion. State another function of bones and muscles. (1 mark)

- (B) Fill in the blanks a, b, c and d considering plant growth substances. (4 marks)

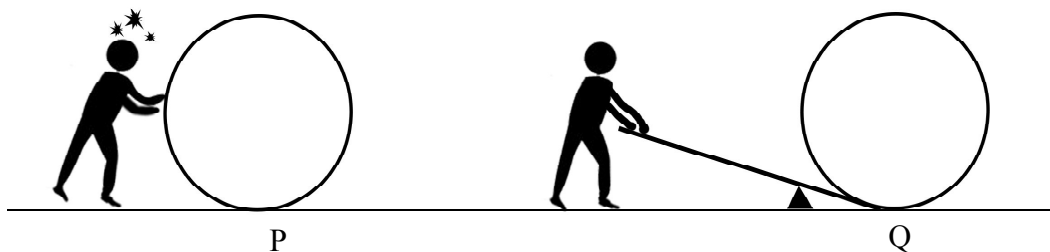
Growth substance	Function
Auxins	a
b	Growth of roots.
Indole acetic acid / Indole Butric Acid	c
d	As a weedicide

06. (A) With the nanotechnology, the size of equipment produced became small and the efficiency of equipment could be increased.
- (i) Who is the scientist, gave the idea of nano technology for the first time. (1 mark)
 - (ii) Mention the size of materials used in nano technology in nano scale. (1 mark)
 - (iii) State one example for natural nano system. (1 mark)
 - (iv) Mention one possible adverse effect of nano - technology. (1 mark)
- (B) (i) What is the term used to introduce the change occurred in clouds due to rubbing of snow crystals in clouds when the wind blows. (1 mark)
- (ii) Explain the reason for the occurrence of sound in thunder. (1 mark)
- (iii) State 2 ways of preventing accidents of lightning. (1 mark)



- (C) The figure X shows the way of travelling of light through a glass block.
- (i) Name the two rays AB and BC (1 mark)
 - (ii) What is the term used to introduce bending of light ray as above. (1 mark)
 - (iii) Draw how the light rays behave in the equipment of periscope given in Y. (1 mark)

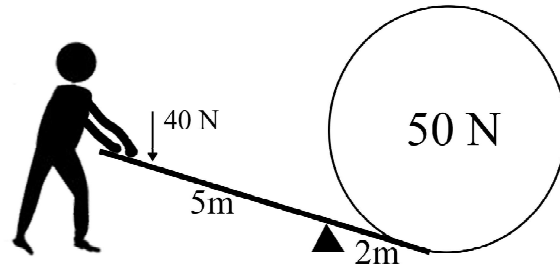
07. (A) Two attempts done by a man to lift a large stone are given below.



- (i) In which instance the activity become easy? (1 mark)
- (ii) To which type of simple machine does the device in Q belong? (1 mark)

(iii) Name two types of simple machines except above.

(2 marks)



(iv) According to the information given in the figure calculate,

(a) Mechanical advantage.

(1 mark)

(b) Velocity ratio.

(1 mark)

(B) 26th December 2004 is a remarkable day for Sri Lankans. Because that is the day in which Sri Lanka had to face the largest natural disaster.

(i) What is the natural disaster condition.

(1 mark)

(ii) State the reason for the occurrence of that disaster.

(1 mark)

(iii) What is the unit/ scale used to measure the strength of an earthquake?

(1 mark)

(iv) Name a country in which earthquakes occur frequently.

(1 mark)