

Science I

Grade 10

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Time: 01 Hour

Name/ Index No.

• **Answer all questions.**

01. None of 4 types of basic organic compounds contain in living matter is,
(1) Protein (2) Carbohydrate (3) Water (4) Nucleic Acid
02. Sugar which contains in milk is,
(1) Maltose (2) Sucrose (3) Glucose (4) Lactose
03. An element which contains in Carbohydrate but not in protein is,
(1) Nitrogen (2) Carbon (3) Hydrogen (4) Oxygen
04. Vitamin which is important for the growth of tissues and cells is,
(1) Vitamin K (2) Vitamin E (3) Vitamin C (4) Vitamin A
05. A mineral which is necessary for the synthesis of hemoglobin is,
(1) Potassium (2) Magnesium (3) Iodine (4) Iron
06. A person starts from point A and travels 3 km towards East direction and reaches another point B. Then he travels 4 km towards North and reaches C. His displacement is,
(1) 4 Km (2) 3 Km (3) 1 Km (4) 5 Km
07. Standard unit which used to express the distance travelled by an object within unit time is,
(1) ms^{-1} (2) m (3) s (4) ms^{-2}
08. Planetary model of the atom was presented by,
(1) Ernest Rutherford (2) J. J. Thomson
(3) John Dolton (4) Niels Bohr
09. If an object comes to rest within 5 seconds which travels at a uniform velocity of 10ms^{-1} , its acceleration is,
(1) 2ms^{-2} (2) 10ms^{-2} (3) -2ms^{-2} (4) -10ms^{-2}
10. Correct standard symbol of element sodium is,
(1) S (2) NA (3) Sa (4) Na
11. Electronic configuration of Alluminium aton is,
(1) 2, 8, 2 (2) 2, 8, 1 (3) 2, 8, 3 (4) 2, 8, 4

Science II

Grade 10

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Time: 02 Hours

Name/ Index No.

• Answer 4 questions.

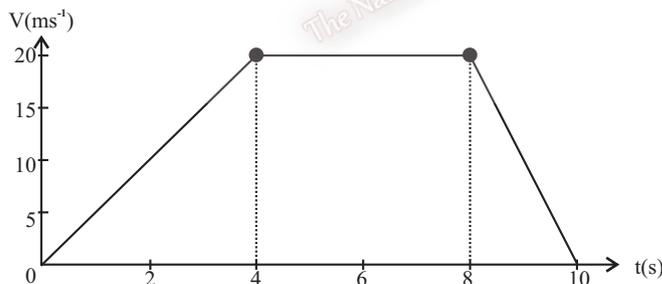
01. A body of organisms is a collection of chemical compounds. There are chemical compounds which produce within the body and take from out. Carbohydrate, Protein are prior from them.

- (1) Name 2 basic organic compounds exist in living matters not mentioned above. (4 m.)
- (2) Write down the common molecular formula of Carbohydrate. (2 m.)
- (3) What is/are the monosaccharide/s by hydrolysis of a sucrose molecule? (2 m.)
- (4) What is the constituent element containing in protein except for carbon, hydrogen and Oxygen? (1 m.)
- (5) Write 2 uses of protein to the human body. (3 m.)
- (6) (a) Name 2 solutions used in laboratory for an experiment done for identifying sucrose which is a monosaccharide. (2 m.)
(b) What is the colour change occurs in this experiment? (1 m.)
- (7) Name two other elements contain in Nucleic acid except Carbon, Hydrogen and Oxygen. (2 m.)
- (8) Mention the main function of nucleic acid. (1 m.)

02. (1) Define the following terms.

- (a) displacement (1 m.)
- (b) velocity (1 m.)

(2) Following graph shows the velocity of an object moved along a linear path versus time



Describe the nature of motion of the object in following time intervals according to the graph.

- (a) (0 - 45 s)
 - (b) (45 s - 85 s)
 - (c) (85 s - 105 s) (3 m.)
- (3) Calculate the acceleration of the object during first 4 seconds. (2 m.)
 - (4) What is the displacement done by the object at a uniform velocity? (2 m.)
 - (5) Calculate the deceleration of the object during last 2 seconds. (2 m.)
 - (6) Calculate the displacement of the object moved with the deceleration using the graph. (2 m.)
 - (7) A coconut detaches from the stalk of the tree fall to the ground within 4 s at final velocity of 40ms^{-1} . Draw a velocity time graph to represent this motion. Mark axes and values correctly. (2 m.)

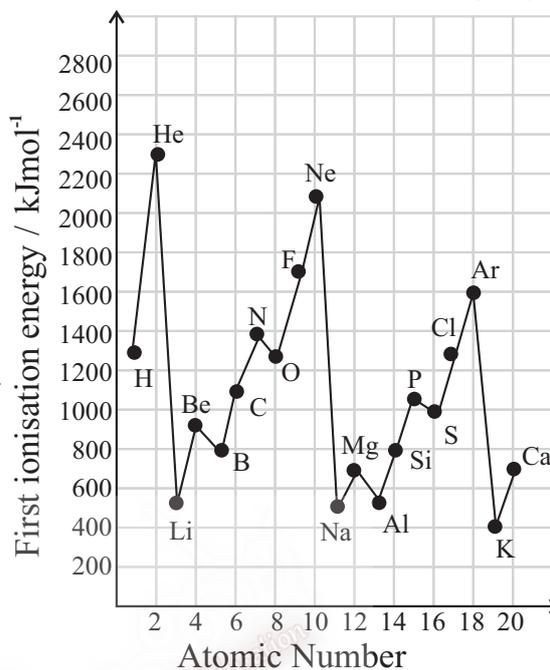
03. The world we are living on is formed by two basic parts which are known as matter and energy. There's a continuous inter-relationship between these two parts.

- (1) Mention 3 sub atomic particles of an atom which is the building unit of matter. (3 m.)

- (2) Mass number of an atom of the element X is A and its atomic number is Z. Write this in standard form. (2 m.)
- (3) Explain what the isotopes is. (2 m.)
- (4) Write down the electronic configuration of an atom belongs to 3rd period and 3rd group of the periodic table. (2 m.)

(5) What is known as the first ionisation energy of an atom? (2 m.)

(6) Following is a graph which shows the first ionisation energy of first 20 elements of the periodic table. Study the given graph and answer the questions given below.



- (a) Describe the variation of ionisation energy of elements when goes down through a group of the periodic table.
- (b) Write down the variation of ionisation energy of elements when goes through a period from left to right.
- (c) Which group of elements has the highest ionisation energy?
- (d) Mention the reason for the answer of above (c). (4 m.)

04.A Following is a part of a periodic table. Given symbols are not standard symbols. Answer the questions using the given symbols.

		A			
	B	F		C	D
E					

- (1) Write down the covalency of elements A and C in order. (2 m.)
- (2) Mention elements given here which have metallic properties. (2 m.)
- (3) Write the formula of the compound formed by B and C after reacting with each other. (2 m.)
- (4) Mention a metalloid given here. (1 m.)
- (5) If the mass number of E is 39,
- (a) How many protons are in E? (1 m.)
- (b) How many electrons are in E? (1 m.)

B Write the formula of following compounds.

- (1) Potassium Nitrate (2 m.)
- (2) Amonium Posphate (2 m.)
- (3) Magnesium Chloride (2 m.)

05. (1) Write down the first law of Newton (2 m.)
- (2) If a force of 1500 N is applied on a cart with a mass of 500 Kg, calculate the acceleration of the cart. (2 m.)
- (3) Draw a diagram of an activity can be done which is suitable for demonstrating Newton's 3rd law. (2 m.)
- (4) Write 2 instances where Newton's third law is applied. (2 m.)
- (5) Find the momentum of a train engine with the mass of 10000 kg When travels at a velocity of 5ms^{-1} . (2 m.)
- (6) Write 2 factors which affect to the limiting frictional force. (2 m.)
- (7) Mention an instance where frictional force in used in day to day activities. (1 m.)
- (8) Mention a harmful situation of friction. (1 m.)