### First Term Examination - 2015

# Science I

Grade 10		විදනව I	Time: 01 Hour	
	Name/ Index No.			

•	Answer all question	ns.				
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 contain	s 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) 4Km	(2) 3 Km	(3) 1 Km	(4) 5 Km		
07.	Standard unit which is,	used to express the d	istance travelled by a	n object within unit time		
	(1) ms <sup>-1</sup>	(2) m	(3) s	(4) ms <sup>-2</sup>		
08.	Planetary model of the atom was presented by,					
	(1) Ernest Rutherfor	rd	(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 <sup>-1</sup> , its acceleration is,					
	(1) 2 ms <sup>-2</sup>	(2) 10 ms <sup>-2</sup>	$(3) -2 \mathrm{ms}^{-2}$	(4) -10 ms <sup>-2</sup>		
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		

12.	Following characteristics could be seen in a certain element.					
	Conductors of heat and electricity.					
	❖ Does not react with cold water put reacts with hot water.					
	❖ Prevents corrosion of iron.					
	This element can be,					
	(1) Sodium	(2) Magnesium	(3) Silver	(4) Zinc		
13.	If formulae of nitrate of the element A is A (NO <sub>3</sub> ) <sub>2</sub> formulae of its carbonate can be,					
	(1) ACO <sub>3</sub>	$(2)$ $A_2CO_3$	(3) A(CO <sub>3</sub> ) <sub>2</sub>	(4) A <sub>3</sub> CO <sub>2</sub>		
14.	Answer with elements which reach to Nobel gasses by removing an electron only is,					
	(1) CaNaK	(2) Cl, Br, I	(3) H, Li, C	(4) N,O,F		
15.	Answer which denotes 3 kmh <sup>-1</sup> velocity in ms <sup>-1</sup> is,					
	$\begin{array}{c} (1) \ \ \frac{3 \times 1000}{60 \times 60} \end{array}$	$\begin{array}{c} (2) \ \ \frac{3 \times 60 \times 60}{1000} \end{array}$	(3) $\frac{3 \times 60}{1000}$	$\begin{array}{c} (4)  \underline{60 \times 60} \\ 3 \times 1000 \end{array}$		
10.	<ul><li>A - Nature of s</li><li>B - Normal rea</li><li>C - Area of sur</li></ul>	limiting frictional force urfaces in contact affect action between them affaces in contact affects / statements from abov  (2) B	ets to limiting friction fects to limiting fricti to limiting frictional	nal force.		
17.	Cell theory was pro	esented by,				
	(1) Schleiden	(2) Schwan	(3) Virchow	(4) All above three		
18.	Ç ,					
	(1) 23	(2) 46	(3) 26	(4) 48		
19.	Function takes pla (1) protein synthe secretory substance		(2)	production of		
	(3) synthesis of L	ipids and steroids	(4) Production of	energy.		
20.	A metal in liquid st	ate at room temperatur	re is,			
	(1) Hg	(2) Au	(3) As	(4) Ni		
				$(2 \times 20 = 40 \text{ marks})$		

#### First Term Examination - 2015

## Science II විදනව II

Grade 10 Time: 02 Hours

Name/ Index No.

#### • Answer 4 questions.

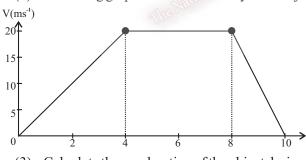
- 01. A body of oranisms is a collection of chemical compounds. There are chemical compounds which produce within the body and takes from out. Carbohydrate, Protein are prior from them.
  - (1) Name 2 basic organic compounds exists in living matters not mentioned above. (4 m.)
  - (2) Write down the 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.

 $(2 \,\mathrm{m.})$ 

(8) Mention the main function of nucleic acid.

 $(1 \,\mathrm{m.})$ 

- 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 verses 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 decelleration using the graph.

 $(2 \,\mathrm{m.})$ 

(7) A coconut detaches from the stalk of the tree fall to the ground within 4 s at final velocity of 40ms<sup>-1</sup>. Draw a velocity time graph to represent this motion. Mark axes and values correctly.

 $(2 \,\mathrm{m.})$ 

- 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. (3) Explain what the isotopes is.  $(2 \,\mathrm{m.})$ (4) Write down the electronic configuration of an atom of element belongs to 3rd period and 3rd group of the periodic table.  $(2 \,\mathrm{m.})$ (5) What is known as the first ionisation energy of an atom?  $(2 \,\mathrm{m.})$ 2800 (6) Following is a graph which shows the first 2600 ionisation energy of first 20 elements of the He 2400 periodic table. Study the given graph and Ne 2200 answer the questions given below. 2000 Describe the variation of ionisation (a) 1800 Αr energy of elements when goes down 1600 through a group of the periodic 1400 table. 1200 (b) Write down the variation of 1000 Reionisation energy of elements when 800 Ca goes through a period from left to 600 right. 400 Li Na (c) Which group of elements has the 200 highest ionisation energy? Mention the reason for the answer (d) 8 10 12 14 of above (c).  $(4 \, \text{m.})$ Atomic Number 04.A Following is a part of a periodic table. Given symbols are not standard symbols. Answer the questions using the given symbols. (1) Write down the covalency of elements A and C in order.  $(2 \,\mathrm{m.})$ F В D (2) Mention elements given here which have metallic Е properties.  $(2 \mathrm{m.})$ (3) Write the formula of the compound formed by B and C after reacting with each other. (2 m.) (4) Mention metalloid given here.  $(1 \,\mathrm{m.})$ (5) If the mass number of E is 39, (a) How many protons are in E?  $(1 \, \mathrm{m.})$ (b) How many electrons are in E?  $(1 \, \text{m.})$ B Write the formula of following compounds. (1) Potassium Nitrate  $(2 \,\mathrm{m.})$ (2) Amonium Posphate  $(2 \,\mathrm{m.})$ (3) Magnesium Chloride  $(2 \,\mathrm{m.})$ 05. (1) Write down the first law of Newton  $(2 \,\mathrm{m.})$ (2) If a force of 1500 N is applied on a cart with a mass of 500 Kg, calculate the acceleration of the cart. (3) Draw a diagram of an activity can be done which is suitable for demonstrating Newton's 3 rd  $(2 \,\mathrm{m.})$ (4) Write 2 instances where Newton's third law is applied. (5) Find the momentum of a train engine with the mass of 10000 kg When travels at a velocity of 5ms<sup>-1</sup>.  $(2 \,\mathrm{m.})$ (6) Write 2 factors which affect to the limiting frictional force.  $(2 \,\mathrm{m.})$ (7) Mention an instance where frictional force in used in day to day activities.  $(1 \, \mathrm{m.})$ 

 $(1 \,\mathrm{m.})$ 

(8) Mention a harmful situation of friction.