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First Term Test - 2020

34	E	I,II

Science I, II **Time – 3 hrs**

Name / Index No : ..... **Grade 10**

Part I

- Answer all questions.
- Underline the correct answer

1. When adding extra amount of NaOH and then few drops of $CuSO_4$ in to a food solution, It turns in to light purple. The food solution contains.
   i. Carbohydrates ii. Proteins
   iii. Lipids iv. Monosaccharaides.

2. A train travelling at velocity of $20ms^{-1}$ decelerates uniformly and stops in 5S.The deceleration of the train is,
   i. $4\ ms^{-2}$ ii. $2\ ms^{-2}$ iii. $5\ ms^{-2}$ iv. $3\ ms^{-2}$

3. Water soluble Vitamins are,
   i. B & C ii. A & D iii. C & D iv. B & E

4. The mineral which help for blood clotting
   i. Iron ii. Magnesium iii. Calcium iv. Phosphorous

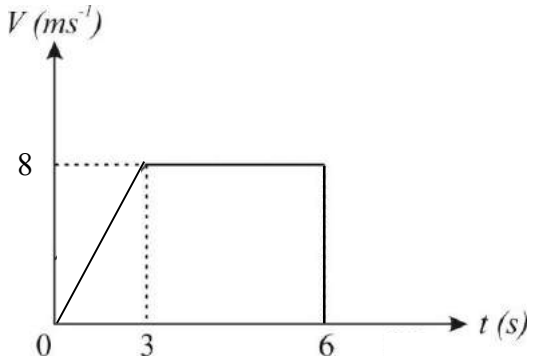
5. The main carbohydrate present in the cell wall of the plant cell.
   i. Glucose ii. Glycogen iii. Pectine iv. Starch

6. A nonmetallic elements
   i. Al ii. Si iii. P iv. Na

7. Formula of the sulphate of A is $A_2(SO_4)_3$ The formula of phosphate of A is,
   i. APO_4 ii. $A_2(PO_4)_3$ iii. $A_3(PO_4)_2$ iv. A_3PO_4

8. Mono valent nonmetallic element
   i. Na ii. Li iii. Cl iv. Mg

9. The number of electrons and neutrons respectively in the $^{24}_{12}X^{+2}$ iron
   i. 12, 12 ii. 12, 24 iii. 10, 12 iv. 10, 24

10. 

Following graph illustrate the velocity time graph of an object. What is the displacement of that object.

i. 36m ii. 60m iii. 16m iv. 10m

11. The maximum height of an object within first 2 seconds projected vertically upwards at an initial velocity of 50 ms^{-1}

i. 80m ii. 60m iii. 30m iv. 50m

12. A car travelling at a velocity of 90 kmh^{-1} decelerate uniformly to 18 kmh^{-1} in 10s The deceleration of the car is,

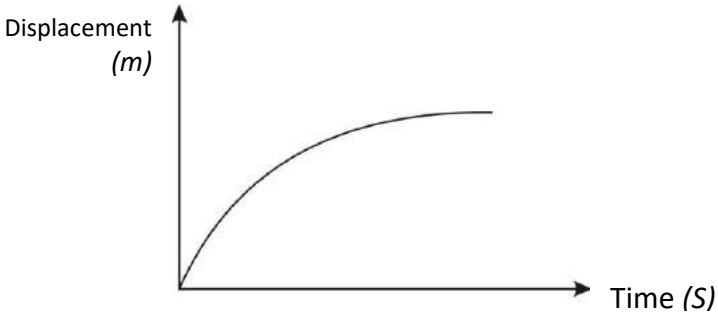
i. 2 ms^{-2} ii. 4 ms^{-2} iii. 5 ms^{-2} iv. 1 ms^{-2}

13. Maltose is,

i. An monosaccharide. ii. An polysaccharide.
iii. Contain in phloem Sap iv. Can be obtained by hydrolyzing starch

14. Biomolecules which contains same set of elements,

i. Carbohydrate, Protein ii. Carbohydrate, Lipids
iii. Protein, Lipids iv. Protein, nucleic acid

15. 

The motion shown by the graph is,

i. Uniform acceleration ii. Uniform deceleration
iii. Uniform velocity iv. Non of the above

16. The scientist who introduce the planetary model of an atom.

i. Neils Bohr ii. Ernest Rutherford
iii. Demetri Mendeleeve iv. Newton

17. Consider the following statements regarding bio chemical reactions.
    A. Enzymes are involve to the above reactions
    B. Enzymes do not sensitive for the temperature.
    C. Enzymes are produced only inside an animal body.

    False statements are,

    i. A & C ii. B & A iii. B & C iv. All above

18. Plasma membrane of the plant cell is made up of

    i. Phospholipids ii. Cellulose
    iii. Lipids iv. Cholesterol

19. Frictional force acts on bicycle, When it is riding.

    i. Towards the gravity ii. Away from the gravity
    iii. Towards the direction of the motion. iv. Opposite direction of the motion

20. Momentum of a moving object is 6 $kgms^{-1}$. If the mass of that object is 600g, find the velocity of it?

    i. $10ms^{-1}$ ii. $20\ ms^{-1}$ iii. $600\ ms^{-1}$ iv. $100\ ms^{-1}$

Part II

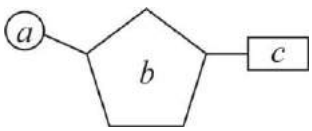
- Answer all questions.

Structured essay

1. (a) Fill the following table regarding the food tests.

Nutrient	Name of the test	Solution /s	Observation
1. Starch	Iodine Test	.....	.....
2. Glucose	.....	Benedict	.....
3.....	Biurette test	NaOH $CuSO_4$	.....

(b) Following diagram illustrate the building unit of a bio molecule.



i. What is the name of the building unit given above?

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ii. Write the elements which involve to build up the above unit.

.....

iii. Name a, b, c

a)..... b) ..... c) .....

iv. Write 2 functions of the biomolecule which contains in the above unit.

.....

.....

v. Name two main types of the above bio molecule.

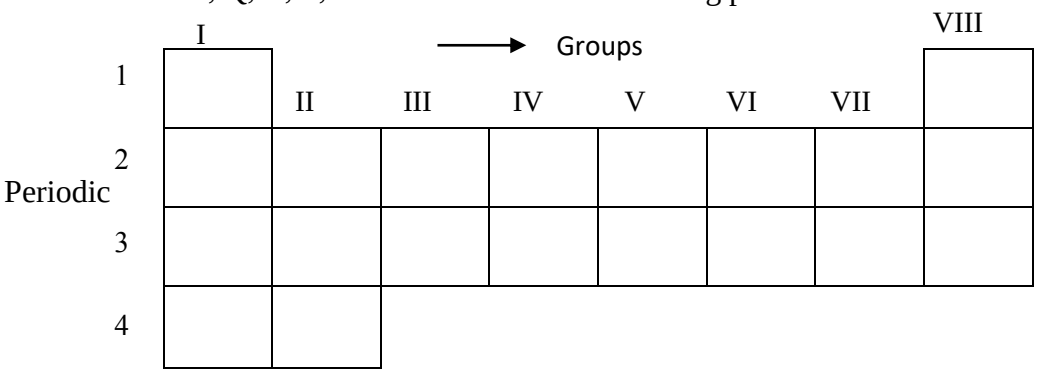
.....

.....

2. Following table states the chemical information of 6 elements.

Element	P	Q	R	S	T	U	W
Atomic Number	8	1	6	2	11	8	9
Mass Number	18	1	12	4	23	16	19

(a) i. Insert P, Q, R, S, T elements in to the following periodic table.



ii. Number of neutrons of T .....

iii. Electronic configuration of U …….....

iv. What are the isotopes among them …….....

v. Write 2 similar features of isotopes of same element?

.....

.....

vi. "S" does not involve to any chemical reaction why?

.....

vii. What is the real name of S

.....

viii. Illustrate the element W in a standard way using an atomic number and the mass number

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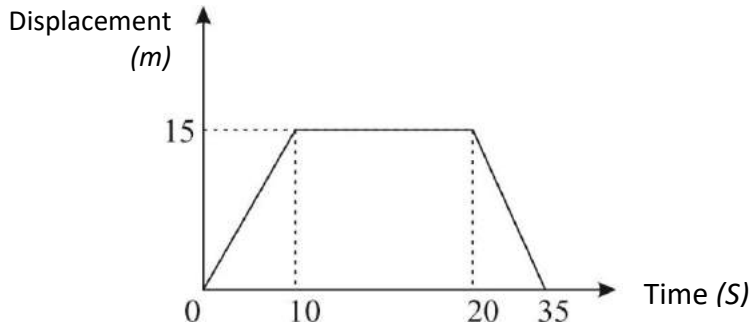
Essay Question

1.

(a) Following is the displacement – time graph of an object along a straight line.



i. Describe the motion of the object within first 10 seconds.
ii. What is the type of motion of the object between 10s to 20s
iii. Find the total distance and displacement of the object
iv. Draw the velocity time graph for the whole motion

(b) A fruit in a tree that detaches from the stalk takes 5s to fall to the ground (gravitational acceleration = $10ms^{-2}$)

i. Prepare the table that gives the variation of velocity with time for the above motion.
ii. Draw the velocity time graph according to the above table.
iii. Write a statement to find the rate of change of velocity when falling the fruit on the ground.
iv. Calculate the rate of change of velocity using the above statement.
v. What is the height that the fruit fell from?

2. (a) The following activity is created by a student to observe the action of amylase enzyme on starch.

- Add amylase enzyme to a starch solution and mixed well.
- Get a drop from the solution after 2 minutes and place it on a white porcelain tile and add a drop of iodine onto the drop of mixture.
- Take observations.

i. What is the colour when adding iodine to a starch solution/

ii. a) What is the colour change when adding iodine to the amylase enzyme?
b) What is the reason for the above colour change

iii. a) What is the colour when adding iodine to the solution after 20 minutes
b) What is the reason for the above colour change

iv. How to prepare a solution with amylase in the school laboratory instead of amylase enzyme?
v. What is the product formed by the reaction of starch with amylase.

(b) i. Below mentioned deficiency symptoms were identified at a health clinic conducted in a particular school.

Sugah - weakening and bleeding of gum
Wimal - Anaemia , Sleepiness
Wijaya - Limits body height, Affect development of intelligence.
Damayanthi – Dryness in the skin Night blindness
Sunil - Weakening of bones and teeth

Mention the relevant vitamin or mineral for the above deficiency symptoms.

ii. Explain briefly how water helps to maintain constant body temperature.

3. (a) Atom is the building unit of matter. Compounds are formed by combining atoms.

i. Name the sub atomic particles present in an atom and mention the location of each particle.

ii. Name the founder of each particle.

iii. $^{31}_{15}P$ is the standard way of represent the phosphorus atom

a) What is the atomic number of phosphorus.
b) What is the mass number of phosphorus.
c) Draw the structure of phosphorus. atom which indicate the number of protons, neutrons and elections.

vi. Identify the following elements.

X - Belongs to group I. Metal, soft, Density is less than water
Y - Low reactivity, biatomic gas, Raw material to produce explosives.
Z - Non metal, Have different allotropic forms component of amino acids.

v. The formula of the phosphate of element A is $A_3(PO_4)_2$

a) Write the formula of the chloride of A
b) Write the formula of the hydroxide of A

(b) Some elements have isotopes.

i. What are isotopes?

ii. Explain briefly how chemical properties of isotopes are some.

iii. Hydrogen has three isotopes

$^{1}_{1}H$ $^{2}_{1}H$ $^{3}_{1}H$

a) Name the above isotopes.
b) Name other two elements with isotopes.
c)
i. What is electronegativity?
ii. Which element has the highest electronegativity value?
iii. What is the scale which use to assign electronegativity values?