Department of Education –Western Province Second term Test Evaluation -2018			
Grade 10	Subject - Science	Paper -1	Time – 1 hour

Name:- …… Index Number:- ……

Note –

- Answer all questions.
- In each of the question 1 to 40,Pick one of the alternatives 1,2,3,4 which you consider is correct or most appropriate.
- Mark a cross (x) on the number corresponding to your choice in the answer sheet provided.

1. Theory of cell was introduced by

1) Schleiden and Schwann 2) Robert Hooke 3) Carl Woese 4)Alexander Flemne

2. Select incorrect answer about nucleic acid that contained in living matter

1) Store genetic materials of organisms

2) Variations are occurred due to mutations of DNA molecule

3) Some viruses contain both DNA and RNA

4) Important to systhesis of protein in the organisms

3. Cramps and Nausea are deficiency symptoms of human body due to lack of a certain element. What is that element?

1) Sodium 2) Potassium 3) Iodine 4) Phosphorous

4. At which instance contain 1 mol of substances from followings? (H-1, C-12, o-16)

1) Hydrogen atom of 2g of hydrogen

2) Oxygen atoms of 8g of oxygen

3) Water molecules of 8g of water

4) Methane molecules of 16g of methane

5. When heating a certain element, it gives bright white colour flame forming white colour powder. What is that element?

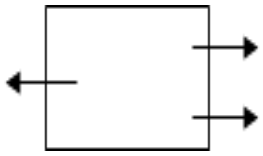
1) Fe 2) Al 3) Mg 4)Pb

6. If a vehicle needs 5s to complete 15m. Find the mean speed of it?

1) $75ms^{-1}$ 2) $10ms^{-1}$ 3) $3ms^{-1}$ 4) $20ms^{-1}$

7.

8N



10N

5 N

This picture shows 3forces acting on an object. Find the direction and the magnitude of the forces that should be applied to keep the object at rest?

1) $\overrightarrow{15N}$ 2) $\overleftarrow{4.7N}$ 3) $\overrightarrow{7N}$ 4) $\overleftarrow{23N}$

8. Human nitrogenous excretion process mainly done by

1) Kidney 2) Skin 3) Lungs 4) Bladder

9. The molecular formula of water is H_2O. The number of atoms in 18g of water is (H-1, O-16)

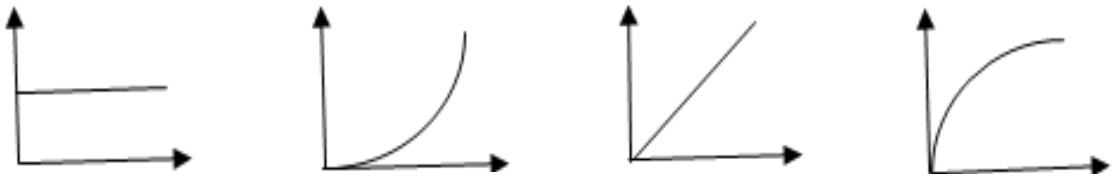
1) 6.023×10^{23} 2) $6.023 \times 10^{23} \times 3$ 3) $2 \times 6.023 \times 10^{23}$ 4) $6.023 \times 10^{23} \times 18$

10. ${}^{35}_{17}X$ Number of neutrons present in the element is

1) 18 2) 17 3) 35 4) 52

11. What is the relevant displacement time graph when an object moving uniform velocity

Displacement (m) Displacement(m) Displacement(m) Displacement (m)



Time (S) Time (S) Time (S) Time (S)

12. Select the instance which is not an example for couple of forces of moment

1) Rotating the steering wheel 2) Opening a tap

3) Rotating a nut using spanner 4) Unscrewing a nail with a screw driver

13. Function of the smooth endoplasmic reticulum of a cell

1) Secretion 2) Do the respiratory reactions

3) Synthesis of protein 4) Transport and production of lipids and steroids

14. What is the instance that meiosis can takes place?

1) Development of somatic cells 2) Development of embryo

3) Production of sperms 4) Division of molula

15. Who introduced the periodic table at first as the classification method of elemets

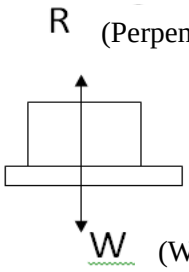
1) Niels Bohr 2) Mendeleeff

3) Ernest Rutherford 4) John Dolton

16. Which element has the highest electronegativity according to Pauling Scale?

1) F 2) Cl 3) N 4) P

17.



If the perpendicular reaction is 100N. What is the mass ofthe object?

1) 100kg 2) 10g

3) 10kg 4) 0.1kg

18. What is the instance mention below which increase the frictional force.

a) Applying sand on railway line when travelling hill countries

b) Applying Boric powder on caram boards

c) Using a rope when climbing trees

1) a and c 2) a and b 3) b and c 4) All a,b and c

19. What is the disease which causes due to lack of vitamin A

1) Scurry 2) BeriBeri

3) Bito patches in the eye 4) Osteoporosis

20.Select the correct answer the appendages, are used for location by following unicellular organisms

1) Flagella, cilia, pseudo podia 2) pseudo podia, cilia, flagella,

3) Flagella, pseudo podia,cilia 4) cilia, pseudo podia,flagella

21. The ring A is in equilibrium under the action of shown system of forces. The resultant force that acting on the ring A is?

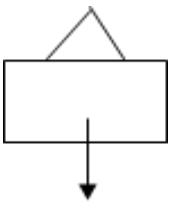
1) 50N force upward 2) 50 N force downward

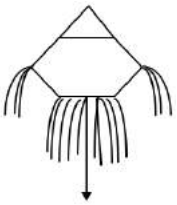
3) Zero 4) None of above

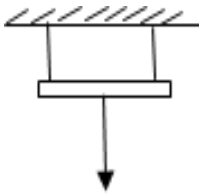
22. 19 protons are contained in an atom named R. Select the stable electronic configuration of the iron formed by R.

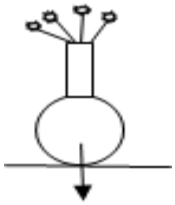
1) 2,8,7 2) 2,8,8,1 3) 2,8,8,2 4) 2,8,8

23. What is the respond which shows equilibrium on object of under 3 parallel forces.

1) 

2) 

3) 

4) 

24. What is the momentum of a vehicle mass with 1000kg when it's travelling $20ms^{-1}$velocity?

1) $^{1000}/_{20kgms^{-1}}$ 2) 1000 x 20kgms^{-1}

3) $^{20}/_{1000kgms^{-1}}$ 4) $^{1}/_{2}$ x 1000 x 20 kgms^{-1}

25. Select the correct scientific name of human according to binominal nomenclature

1) Homo Sapiens 2) Homo sapiens

3) *Homo sapiens* 4) *homo Sapiens*

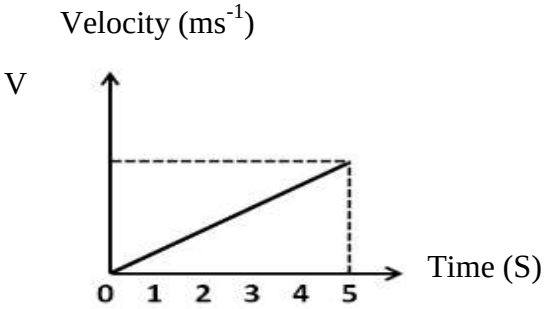
26. A certain element

- Have allotropes in nature
- High Boiling point
- Use for extraction of metals

What is that element?

1) Carbon 2) Sulphur 3) Aluminum 4) Potassium

27. Following velocity (V) time (T) graph shoes $4ms^{-2}$ acceleration. What is the Final velocity of it



1) $10ms^{-1}$ 2) $20ms^{-1}$

3) $0.8ms^{-1}$ 4) $0.4ms^{-1}$

28. Select the answer which is not required for equilibrium of an object under 2 forces.

1) Two forces are same in magnitude 2) Twoforces are acting on same line

3) Two forces are same in direction 4) Resultant is zero of both forces

29. After releasing one ovule from one ovary how long does it takes to issue an ovule again from the same ovary.

1) 56 days 2) 28 days 3) 14 days 4) 30 days

30. Select the adaptation that shows by flowers of coconut tree to avoid self-pollination

1) Hercogamy 2) Having extrose stamens

3) Having unisexual flowers 4) Self-sterility

31. Select correct statement about speed and velocity

1) Speed is vector quantity and velocity is scaler

2) When an objects falls down velocity is gradually decreased

3) Always velocity of a moving object is constant

4) The magnitude and direction are not changed when object is in uniform velocity

32. Which factor is constant at always with the time when a fruit is fulling to ground (consider No, resistance of air)

1) Acceleration 2) Speed 3) Velocity 4) Displacement

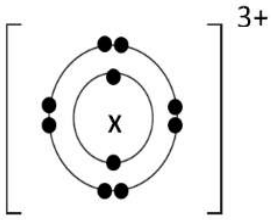
33. Following are few common features belongs for a group of organism.

- Triploblastic, coelomic, posses jointed limbs
- Form tagma by collecting several segments
- Show sexual dimorphism

What is the name of the group of organism which show above features?

1) Echinodermata 2) Mollusca 3) Mammalia 4) Arthropoda

34.



What is the place of element in the periodic table which form X^{3+} on

1) 2^{nd} period, 2^{nd} group 2) 2^{nd} period, 3^{rd} group

3) 3^{rd} period, 2^{nd} group 4) 3^{rd} period, 3^{rd} group

35. The object with mass ‘m’ moves in acceleration of ‘a’ when the resultant force is ‘f’ on the object’. What is the correct relationship among a, m and f?

1) a=f/m 2) a=m/f 3) a=f x m 4) af/m

36. Following statements are related with ionic compounds.

a) Ionic bonds are formed by sharing of electrons

b) Ionic compound have low melting points/boiling points

c) Aqueous solutions of ionic compounds have positive ions and negative ions

d) Aqueous solutions of ionic compounds can conduct electricity

Correct statements are 1. a and b 2. b and d 3. c and d 4. a and d

37. Write proper values for (a), (b), (c) respectively mention in table given below.

Element	Atomic number	Mass number	Number of protons	Number of neutrons
H	(a)	1	1	0
C	6	(b)	6	6
Al	13	27	©	14

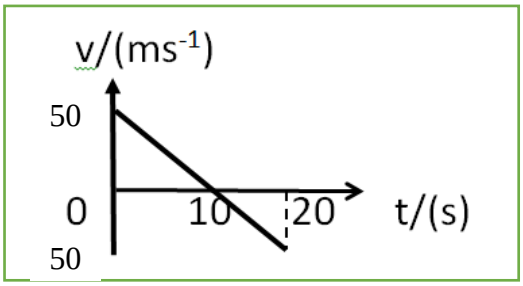
1) 1,12,13 2) 1,6,13 3) 1,12,23 4) 0,12,13

38. A_2O is chemical formula of oxide of A what is the chemical formula nitrite of A.

1) ANO_3 2) $A(NO_3)$ 3) A_2NO_3 4) $A_3(NO_3)$

39. Following velocity graph represent the motion of a stone thrown upward vertically with initial velocity of $50ms^{-1}$

What is the maximum hight stone was reached?



1) 50 m

2) 250 m

3) 270 m

4) 20m

40. Select the true statement about human reproduction

1) Sexual maturity is only common for female

2) Formation of ovules of females start at foetus state

3) Pregnancy period of female is about 360 days approximately

4) Primary sexual characteristics can be identified with the beginning of adolescence.

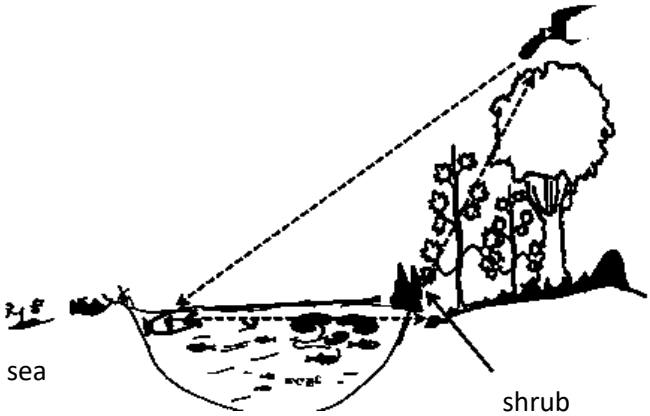
Department of Education –Western Province Second term Test Evaluation -2018			
Grade 10	Subject - Science	Paper -11	Time – 3 hours

Name: - …… Index Number: - ……

- **Instructions:**
- **This question paper contains part A and B.**
- **Answer all the questions in part A, in the space provided.**
- **Answer only 3 questions in part B.**
- **Attach the answer script of part B with part A and hand over.**

01. Below picture shows eco system of a lagoon

The bird on the tree flew straight towards the fish to catch it and flew back to the small shurb on the bank before it reaches to its initial position on the tree. The distance in between shurb to fish is 10m, shurb to branch of the tree 6m and brach to fish is 12m. write answer for given questions.



A)

1) Calculate the total distance of bird when it reached back to the branch after catching fish?

……..…
……..

2) Find the velocity of bird if it took 3s to catch fish by flying strait from branch to the fish.

……..…
……..

3) What is the displacement of Bird after it reached to the initial position with fish?

……..…
……..

4) Find the acceleration of bird. If mass of bird and fish is 0.5kg and it applied 10N horizontal force for flying with fish.

……
……..

B) i. What is the most abundant salt present in lagoon water?

……..

ii. Name the type of bond in between one molecule of that salt?

……..

iii. You have found the metal present in that salt. Write a physical property of it.

…….....

iv. Name a type of gas present in the atmosphere above the lagoon and mention one occasion use that gas industrially.

……..

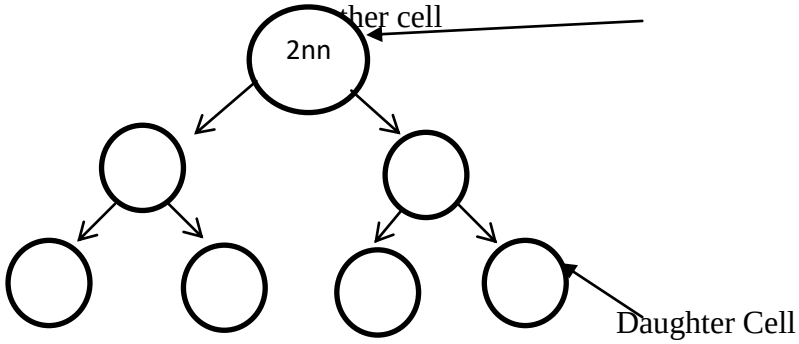
C) i.Name the protein compound that contain in feathers of birds.

……..

ii.What is the compound of proteins which involve in co-ordination and homeostasis.

……..

iii. The process of production of eggs inside the fish body is given below. Its start from a ovule mother cell. Fill the following chart.



02. Type of food contained in the refrigerator are given below.

Honey	Spinach leaves
Eggs	Beans
Curd	Ripen banana

i) Name two main organic compounds present in living matter other than Nucleic acid.

……..

ii) Write a food for each mostly abandent organic compound by selecting above items you mention above.

Organic compound	Mostly abundant food item
……..	……..

iii) Name amonosacchandes present in honey.

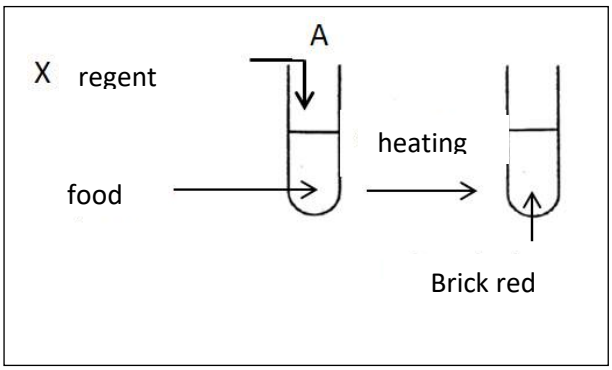
……..

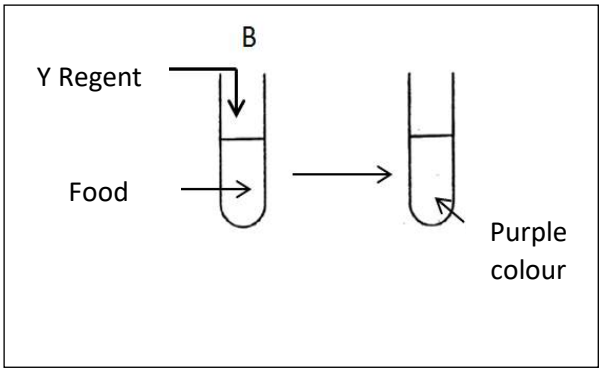
iv) Write a metallic element that present in red blood cells ……..

v) Name the substance that stimulate all the bo-chemical reactions in the organism.

……

vi) Two experiment done by the students to identify nutrients present in two food samples are given below.





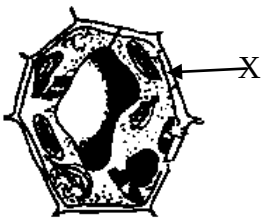
Name X and Y regents.

X = ……. Y= ……..

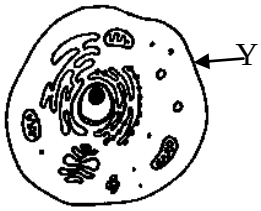
A)What is the colour change that sudan 111 regent mix with cream of curd.

……..

B)



A



B

i) Electronic microscopic views of two types of cells are given above. Name A and B.

X = …….. Y= …….

ii) Write two organelles present in A but not B

……..

iii) Write two types of cell divisions.

……..

03. A) Information of six elements present in the periodic table are given below. Write answers using given symbols. Symbols are not standard.

Element	No of energy levels present electrons	Group number
P	2	iv
Q	2	vii
R	3	ii
S	3	vi
T	3	iii
U	3	viii

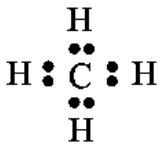
…….....

……..

iii) Name the metallic element which has highest reactivity.

……..

iv) a) Write the relevant letter mentioned in the above lable suitable for middle atom of A ……..…….



A

b) Write a physical property of that element.

……

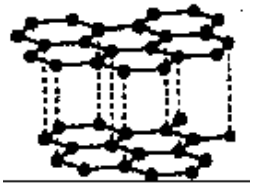
c) Above compound available gas state in room temperature. Mention a reason according to the nature of bond that compound.

……

B) Below picture shows arrangement of atoms of a certain element.

i) What is that structure shown by B?

……

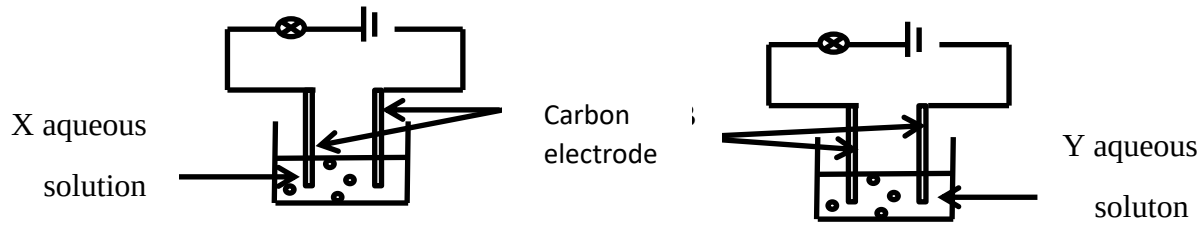


B

ii) Why it is used as a lubricant material?

……

C) The two set up used to do a activity using two chemicals in the laboratory are given below.



Observation. A – Bulb lights B- bulb doesn't lights

i) What is the nature of bond which involve to make X solution, according to the observation.

……..

ii) Mention a chemical can be used to prepare solution Y.

……..

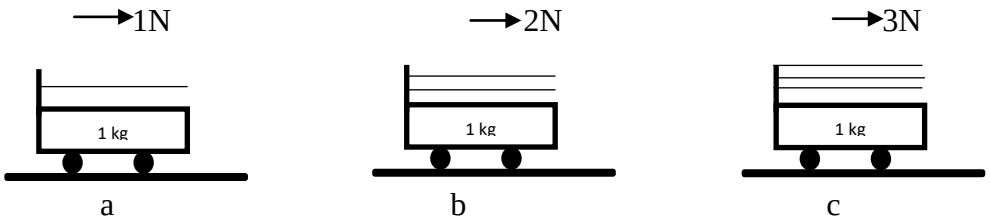
iii) What is reason that water available in liquid state in room temperature?

……..

iv) Mention a factor should be concerned when preparing X and Y solutions.

…….....

04. A practical done by the student to verify a low of motion of Newton's given below.



a b c

i) Write two factors should be constant in this practical.

1) ……. 2) …….

ii) Which factor is increased respectively in the above (a) (b) (c) instances.

……..

iii) When applying a small horizontal force on the trolley does not move. What is the reason for that?……

iv) A student said that the trolley can be easily more slightly inclined smooth plank wood.

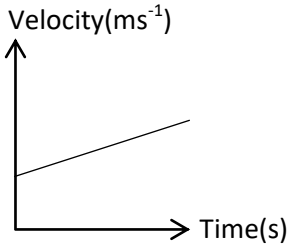
Do you admit to it? ……...

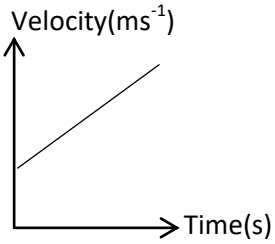
Write the reason for it …….

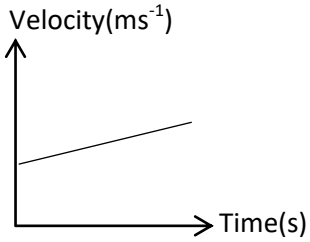
v) Why it is required stretch rubber band up to equal distance and parallel to the trolley?
……...

vi) what is the instrument that can be used to measure the force exerted on trolley? ……..

vii) Three velocity graphs that drawn by the students for represent above instances are given below. Match the graph with relevant instance.







…… …… ……..

viii) What is the relationship relevant for above there instances?

……..

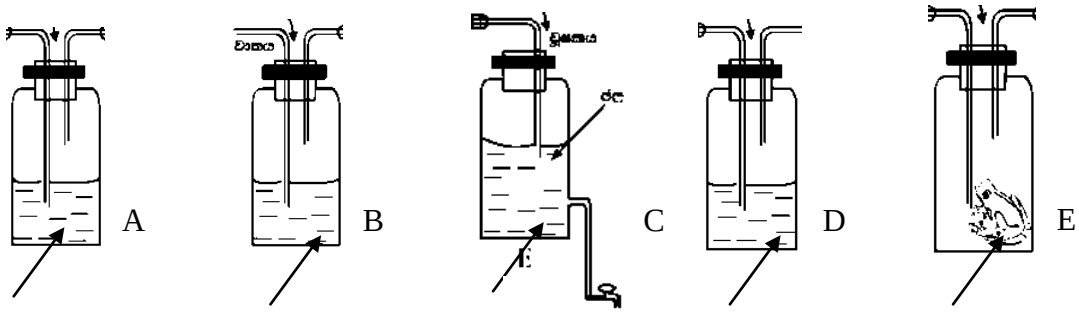
ix) What is the Newton's law build up from it?

……..

x) According to above equation what is the force that need to give $2ms^{-1}$ acceleration on a mass of 500g. ……..
……
..

Part B

05. A) All organisms need energy for their metabolism. The respiration, which is an important characteristic of life is a series of biochemical reaction necessary for producing energy.



A B C D E

Lime water KOH solution Water Lime water Frog

i) What is cellular respiration?

ii) The above bottles are provided to you state in sequence of the way of arranging these bottles to prepare a set up to show the release of CO_2 during respiration.

iii) Name a suitable substance instead of frog.

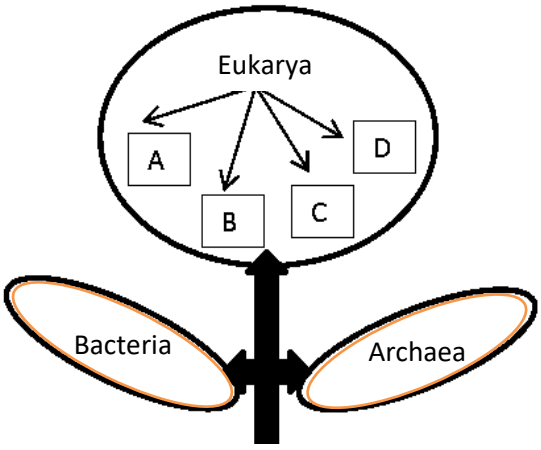
iv) What is the benefit of use potassium hydroxide solution?

v) a) The lime water in one bottle turned to milky, when do the activity state the reasons for that?

vi) Producing food by the organisms themselves is autotrophic nutrition. There are two categories of autotropism. Name them.

vii) Write word equation for the process of photosynthesis.

B) Given below is the classification system introduced by Carl Woes in 1990



i) State two benefits that we can obtain by classification of organisms.

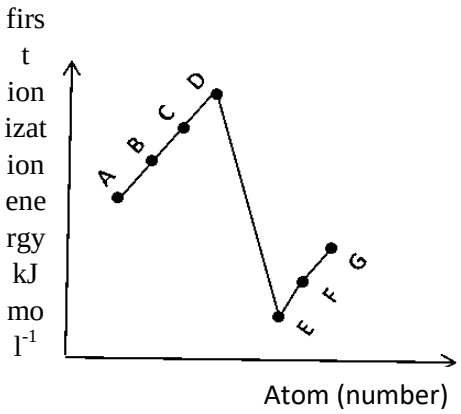
ii) Name A, B, C, and D belonging to Domain Eukarya according to above diagram.

iii) Name the group separately from above that plants and animals belong.

iv) What is the kingdom which live in sea water, belong to Domain Eukarya that contributes mostly to maintain the balance of oxygen and carbon dioxide in air . Give one example for it.

v) State one useful and one harmful effects of bacterial activity to human.

06. A) A rough diagram of a graph that denoting the first ionization energy of a few consecutive elements belonging to second and third periods of periodic table is given below. (symbols are not true)



i) Define first ionization energy.

ii) Which elements from above has the highest first ionization energy?

iii) State two elements belong to third period and write their true symbols.

iv) Write the electronic configuration of E.

v) Build up the chemical formula of the compound formed by the reaction between E and oxygen.

B) When expressing the atomic mass value of 1/12 the mass of $^{12}_{6}C$ isotope is used.

i) How above value is called?

ii) Define what is relative atomic mass of an element?

iii) The mass of a chlorine (Cl) atom is 5.903 x 10^{-23}g value of atomic mass unit is 1.66x10^{-24}g. Find the relative atomic mass of chlorine.

iv) Calculate the number of moles that contained in 24g of carbon .

C) Information of some element are given below. They are not true symbols.

Element	Atomic number	Number of protons	Mass number
A	6	6	12
B	6	6	14
C	8	8	16
D	16	16	32

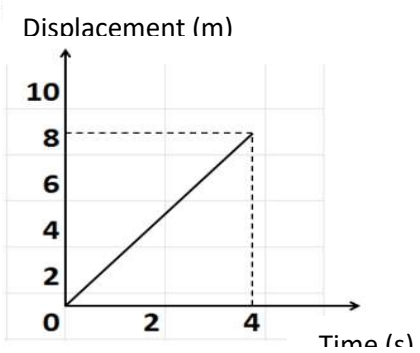
i) What is the number of neutrons in an atom of element B?

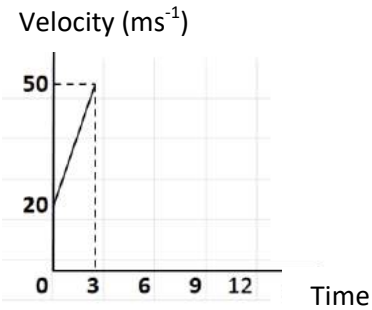
ii) Define the isotopes. Mention the pair of isotopes from above.

iii) Mention the pair of isotopes from above.

iv) Draw the lewis structure of the compound which consists of element A and C.

07. A displacement- time graph and a velocity- time graph is given below.





A object B object

A)i) What is the maximum displacement of A?

ii) Calculate the velocity of A object.

iii) Describe the motion of A object.

iv) What is the maximum velocity reached by the B object?

B) i) Calculate the acceleration of B object using graph.

ii) If B travelled another 6 seconds towards the same direction using the maximum velocity reached, show it in graph B.

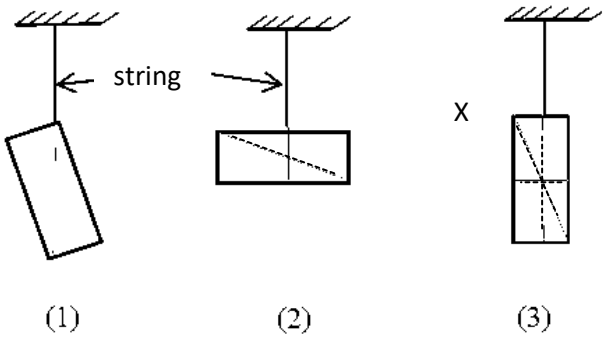
iii) Calculate the displacement of object B within first 03 seconds.

iv) What is the unbalanced force acts on the object within first 03 seconds if the mass of the object B is 1000kg?

v) Calculate themomentum of the object B when it moves from maximum velocity.

C) A piece of thin metal sheet that was hung from three different places in three different instances is given below.

Vertical line passing through the string has marked on the sheet.



i) What is the name of point X that the vertical lines meet with each other?

ii) Under which type of equilibrium of forces that the above sheet exists in each of above instances?

iii) What are conditions that must be filled to maintain the equilibrium an object under the action of 3 forces?

iv) Name an instance that an object exists in equilibrium under three inclined coplanar forces.

08. A) Reproduction is an important process to maintain the continuity of life.

i) State two main types of reproduction of organisms.

ii) Which ways that natural vegetative propagation occurred in following plants?

a) Akkapana b) Curry leaves

iii) State a reason for the necessity of dispersal of fruits and seeds for the plant.

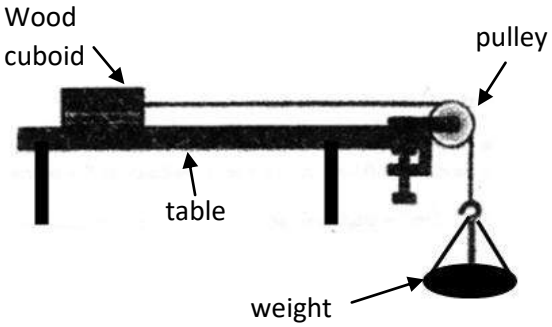
iv) Name pituitary hormones that important for the following processes of female reproductive system.

a) Development of primary follicle b) Ovulation

v) State the specific functions done by the umbilical cord when develop the foetus in the uterus of mother. (Marks 02)

vi) Name a disease infected by bacteria associated with reproductive system.

B) A wood cuboid two sand paper of various roughness, a pulley, twin strings and suitable weights were provided to the student groups to find the factors that effect on friction.



i) What are the factors affect on friction?

ii) State briefly the way of finding one factor that affects on friction using sand papers.

iii) Limiting frictional force had to use when obtaining measurements.

a) What is mean by limiting frictional force?

b) When consider the instances of keeping wood block on the table and pasting sand paper, what would be the observation of readings during limiting frictional force?

iv) What is dynamic frictional force?

v) State 02 beneficial instances of reducing friction.

09. Answer the questions using the elements given below. (sodium, nitrogen, magnesium, oxygen, carbon, silicon, Sulphur)

i) It is used to extract metals such as titanium and zirconium from their compounds.

ii) It is used in making alloys that important for producing air crafts.

iii) It is used in making transistors, diodes and solar cells

iv) It is used as fungicide.

v) It is used to fill electric bulbs and thermometers.(Marks 05)

B) Below given are some oxides formed by some elements

Element	Na	Mg	Al	Si	P	S	Cl,
Oxide,	Na_2O	MgO	Al_2O_3	SiO_2	P_2O_5	SO_2	Cl_2O_3

i) Select the amplboteric oxide from above?

ii) What is strong basic out of them?

iii) What is the oxide used to produce antiacidic medicine for gastritis patients.

iv) Find the number of oxygen atoms in 5 mol of Al_2O_3

C)

Two students apply 10N and 15N two forces to move 50N weighted box placed on smooth surface.

i) Find the resultant force exerted by two children?

ii) One child applied 10N force for pull the box and another child applied 15N force for push the box toward the same direction. Fine the resultant force.

iii) In the second instance 8N frictional force is exerted on the object by the surface. Draw a diagram to show all the force acting on the box when its just start to move.

iv)What is meant by dynamic frictional force?

v) This shows the box suspended by four strings attached to the four corners. What is the tension force acting on each string ?