G-10 Science

Index No ..... **Science I** Time : One Hour

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

1. A Monosaccharide is
   1. Fructose 2. Maltos 3. Lactose 4. cellulose

2. A Vector quantity is
   1. Distance 2. Speed 3. Mass 4. Weight

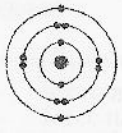
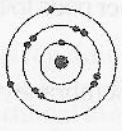
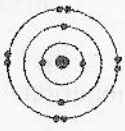
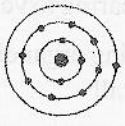
3. Not an element in lipid is
   1. C 2. H 3. N 4. O

4. Following is a part of periodic table. There are not standard symbols. A tomic numbers are given

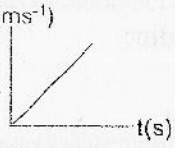
1				
3	4 x	5	6	
11	12	13 y	14	
19 z	20			

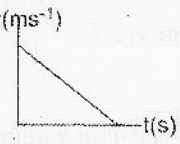
   Select the correct statements regarding x, y & z
   1. X is in the IV group 2. Z belongs to 1st period
   3. X is in II group and 2nd period 4. Y belongs to 4th period

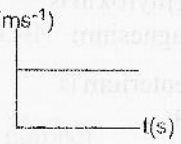
5. The organelle without a membrane
   1. Nucleas 2. Ribosome 3. golgi complex 4. mitochondrion

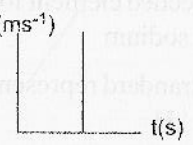
6. The diagram of atom which has 2, 8, 2 electronic configuration.
   1.  2.  3.  4. 

7. A horizontal force of 100N applied on mass of 250 g Calculate the acceleration of it
   1. $100ms^{-2}$ 2. $150ms^{-2}$ 3. $200ms^{-2}$ 4. $400ms^{-2}$

8. The velocity time graph of uniform acceleration is.
   1. 

   2. 

   3. 

   4. 

9. Select the correct vitamin and deficiency symptom

	Vitamin	Deficiency
1.	A	Internal bleeding
2.	B	Night blindness
3.	C	weakening of gum
4.	D	Delays blood clotting

10. The are 3 places of getting reading of weight of an object using a spring balance
    A - in top of mountain
    B - in sea level
    C - in a bottom of the mine
    The correct statement is,
    1. the heighest weight is in top of mountain
    2. B place has heighest weight
    3. value is different in 3 places
    4. C has lowest weight

11. The number of proton in atom which atomic number is 8 and mass number is 17
    1. 8
    2. 9
    3. 17
    4. 25

12. Chemical properties of magnesium are given below
    A. react with cold water and form magnesium oxide.
    B. heated in steam and form magnesium oxide.
    C. burn in air and form magnesium oxide.
    The correct statements are ,
    1. A
    2. B
    3. C
    4. A, B, C

13. **Incorrect** statement about enzyme is ,
    1. Increase the rate of chemical reaction
    2. Produced by organisms
    3. Activate in any temperature
    4. Made by protein

14. The strongest base is,
    1. Na_2O
    2. Al_2O_3
    3. P_2O_5
    4. SO_3

15. A property of carbohydrate is
    1. All carbohydrates dissolve in water
    2. Smallest unit is monosaccharide
    3. The ratio between C and N is 2:1
    4. Galactose is a disaccharide

16. Properties of hydrogen ,boron and carbon respectively are
    1. metals , non- metals , metalloids
    2. non – metals , metalloids ,non - metals
    3. nobal gas , metalloids , non – metals
    4. metalloids , nobal gas ,non -metals

17. The correct statement about the motion of falling a fruit from a tree.
    1. has a uniform velocity.
    2. decelerate and become rest
    3. has gravitational force and move
    4. has a lowest velocity before touch the land

18. The element which show yellow and brown patches in leaves as deficiency symptoms ,
    1. zinc
    2. Calcium
    3. potassium
    4. phosperous

19. Dynamic frictional force applyies in
    1. before starting motion
    2. when moving
    3. just moving
    4. after become rest

20. **Not** a method of reducing friction is
    1. applying oil to chain
    2. applying grease
    3. use bearing to vehicles
    4. use rubber pads to brakes

21. Non-living organelle in a cell is ,
    1. Cell wall
    2. Mitochondrion
    3. Plasm membrane
    4. Nucleus

22. A characteristic of an element belongs to III group in periodic table is
    1. a metal
    2. has properties of metalloids
    3. a non metal at room temperature
    4. has 2 electros in outermost shell

23. Needed element for producing thyroxin is
    1. sodium
    2. magnesium
    3. Iron
    4. Iodine

24. Strandard representation of Deuterium is
    1. ${}^{3}_{1}H$
    2. ${}^{2}_{1}H$
    3. ${}^{1}_{1}H$
    4. ${}^{1}_{0}H$

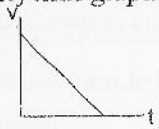
25. An object with rest falls vertically during 3 seconds. Find the height of an object which falls down.
    1. 3 m
    2. 10 m
    3. 45 m
    4. 90 m

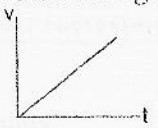
26. The vitamin soluble in water is
1. A 2. C 3. E 4. K

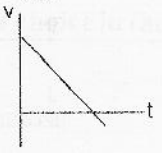
27. An example for equilibrium of force is ,
1. Object in uniform velocity
2. Object moving with acceleration
3. Object moving with deceleration
4. falling of an object under gravitational force

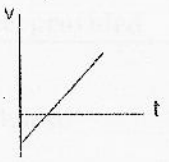
28. The Sulphate of x is XSO_4, valency of x is ,
1. 1 2. 2 3. 4 4. 6

29. Atomic numbers of W X Y & Z respectively are 2, 6, 10 and 20. which of the above element has the heighest 1st ionization energy.
1. W 2. X 3. Y 4. Z

30. Velocity time graph which shows the falling of an object freely.
1. 

2. 

3. 

4. 

31. **Not** a property of magnesium is ,
1. sonorous sound
2. good electrical conductor
3. mealebility and ductility
4. brittleness

32. The type of carbohydrate that stores in animal liver is ,
1. cellulose 2. starch 3. glycogen 4. galaotose

33. The displacement traversed by a certain object is shown the table below

Time (s)	0	1	2	3	4
displacement (m)	0	2	4	6	8

The correct statement is ,
1. The object is accelerated
2. Object has uniform velocity
3. Object has deceleration
4. Object comes to starting point

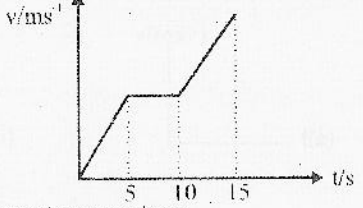
34. A child goes 10 m to east from A, and goes 5 m, to north then move 10 m to West again and stop what is the displacement of the child ?
1. 5 m 2. 10 m 3. 120 m 4. 25 m

35. An object moves 8 ms^{-1} in uniforme velocity for minutes along a straight line. Find the displacement at the end of the movement
1. 4 m 2. 10 m 3. 120 m 4. 25 m

36. The mass of an object is 4 kg and it is moving a velocity of 2 ms^{-1}. The momentum is
1. 2 kg ms^{-1} 2. 6 kg ms^{-1} 3. 8 kg ms^{-1} 4. 16 kg ms^{-1}

37. Given bellows are 3 statements regarding second law of Newton
A - force equals to multiplication of mass and acceleration
B - force inversely proportional to acceleration
C - mass directly proportional to acceleration
Correct statements are,
1. A 2. B 3. A, C 4. B, C

38. Given below is a velocity - time graph of the motion of an object with mass of 5 kg. Find the unbalanced force exerted on an object during 5 s - 10 s
1. 0N 2. 1N 3. 2N 4. 4N



39. **Incorrect** statement of an element which has 14 in atomic number
1. It is in IV group
2. Valency is 4
3. Helps to produce carbohydrates
4. It is a liquid at room temperature

40. The component helps to prevent constipation is ,
1. Vitamins 2. Fibrous 3. Minerals 4. Proteins

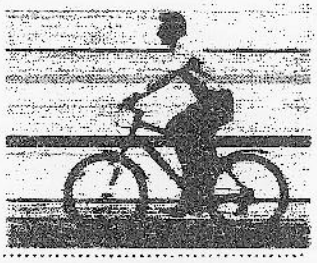
G. 10

Index No ..... **Science II** Time : Three Hour

- **Answer Part A useing given spaces.**
- **Select any 3 question from part B.**

Part - A (Structured essay)

1. Above diagram shows a cyclist who is riding a bicycle on a gravel road,



i. Which biological process provides energy for cyclist to riding his bicycle

.....

ii. State a gas required for above process

.....

iii. The gas mention above is produce during a process in plants Name that process

.....

iv. The non infectuous diseces can be controlled by using bicycles

a. Write a non infectuous disece .....

b. "using bicycles are environmental friendly." Explain above statement

.....

v. Write a metal and non metal which use to Produce bicycle

Metal .....

Non metal .....

vi. Write two differences between a metal and non metal

.....

.....

vii. Sulphur is use to vulcanizing rubber. Write another use of rubber

.....

viii. What is the force applied on bicycle to prevent if from slip on road.

.....

ix. Write a strategy that used on tyres to increasing above force

.....

x. In which place of the bicycle the process given above is affected adversly.

.....

xi. Write two strategies can be used to minimize the disadvantage af that place.

.....

2. A. Given below are some steps not in order that are followed by student to observ onion peel through microscope
   a. peel off a thin layer of onion
   b. covered with a cover slip
   c. place the onion peel on a glass slide
   d. keep onion peel in to watch glass contain water

   i. Write correct order should be followed by the student using relevant letters

   .....

   ii. Write the expected aim which followed by step 'd'

   .....

   iii. What is the advantage of covered the tissue with cover slip

   .....

   iv. Write two differences between onion peel cell and an animal cell

v. Draw a rough sketch of onion peel can be observed through microscope

.....

B. The organells are structures which perform specific functions in cells

   i. Complete the table given below related with the cell organells

Orgamelle	Function
a. Golgi body	.....
b.	Synthesis of protein
c. Mitocondria	.....

   ii. State the substance in nucleus which carries inherited character.

   .....

   iii. Write two substances in cell sap

   .....

   iv. Write two factors include in cell theory.

   .....

3. Given below is a stranderd symbol of element

$$^{16}_{8}X$$

(X is not a real symbol)

i. Write mass number and atomic number of above element

.....

ii. Write number of neutrons and protons in it

.....

iii. Draw a sketch of arrangement of electrons in above atom

iv. Two isotops are abundant in above atom. What is the sub atomic particle with different number in it?

.....

v. Li, B, N and F are belonging to the same period of the periodic table. Write the reason for above statement using knowledge of electron configuration

.....

.....

vi. What is the reason for above 4 elements are include in different groups?

.....

.....

vii. What is the valency number of Li?

.....

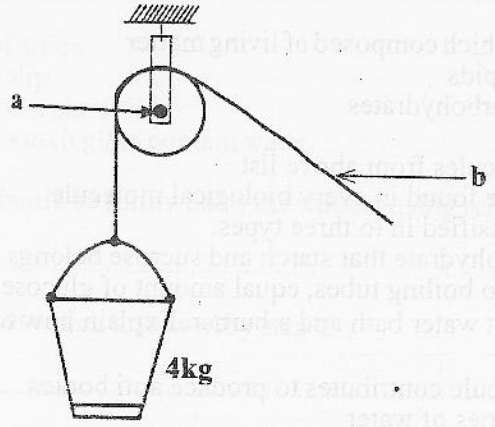
viii. Write the formula of lithium sulphate.

.....

ix. Write the period and group which element B belongs

.....

4. Given below is a stratage that used to draw water from well. The sound is produced while using it



i. what is the advantage of minimizing the frictional force on "a"?

.....

ii. Write two methods can be used to reduce the frictional force on "a"

.....

iii. Explain the difference between frictional force which applied on empty bucket and a bucket full of water

.....

iv. The mass of bucket with water is 4 kg. Find the weight of it.

.....

v a. Calculate the acceleration of bucket which falls down due to broken of its string.

.....

b. Calculated the force exarted on earth while the backet is touch on the earth

vi. State a method of wasting energy in this system

.....

vii. Write the advantage of using core rope instead of nylone rope

.....

viii. Coir rope is eco freendly than the nylon rope. Explain briefly.

.....

Part - B

5. A. Given below are compounds which composed of living matter

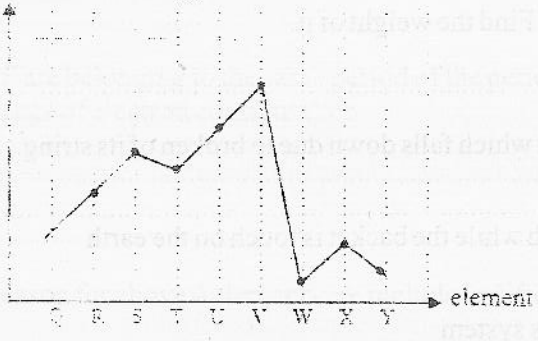
Protein vitamin Lipids
Water Nucleic acids Carbohydrates

i. Classify , biological molecules from above list
ii. Write two elements can be found in every biological molecule
iii. Carbohydrates can be classified in to three types.
   a. write the type of carbohydrate that starch and sucrose belongs
   b. you have provided two boiling tubes, equal amount of glucose and sucrose solutions Benedict solution. Hot water bath and a burner. Explain how to identify glucose and sucrose separatly
iv. Which of the above molecule contributes to produce anti bodies
v. Write two specific properties of water
vi. Write two biological molecule which stored genetic information in virus.

B. Given below are two deficiency diseases of plants
   a. Death of apical bud
   b. chlorosis in leaves and retarded growth

i. What is the difficeiency of element in above plant
ii. Mention a preventing method of above "b" features in plant
iii. Mention a function of iodine in human body
iv. What is the vitamin can be synthesized when exposed to sunlight in the morning
v. Write a significance of vitamin A

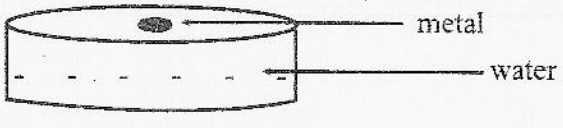
6. A.



Above diagram shows a graph of 1st ionization energy of elements. Which belons to 2nd & 3rd periods. Answer the questions using above graph

i. Define 1st ionization energy
ii. State the group that element V belongs
iii. Explain how you identify the above Group
iv. Write the element with lowest 1st ionization energy
v. Write an electron configurations of element W
vi. Write two elements with equal valency numbers
vii. State the element with lowest electro negativity among given elements

B. The diagram depicts the reaction between a metal and water



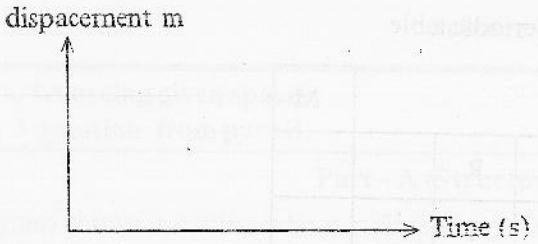
i. What is the name of the element
ii. Write down the Stranded symbol of above element
iii. What is the reason for storing above element in parapin wax
iv. What is the physical property of that element which help to float on water
v. Write two observations of burning magnesium in air
vi. Write the formula of compound which formed during the above reaction
vii. Write two uses of magnesium

7. A. An object moves 10 m along a straight path to east from initial point during 20 seconds. And it stopped during 5 seconds. Again it moves to West within another 10 seconds and reach to the initial point.

i. Prepare a data table for above information

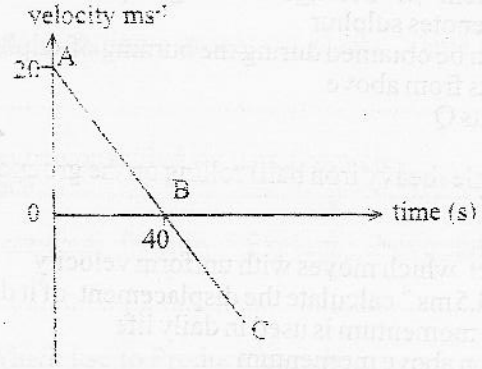
Time				
displacement				

ii. Draw a displacement time graph related to the data table



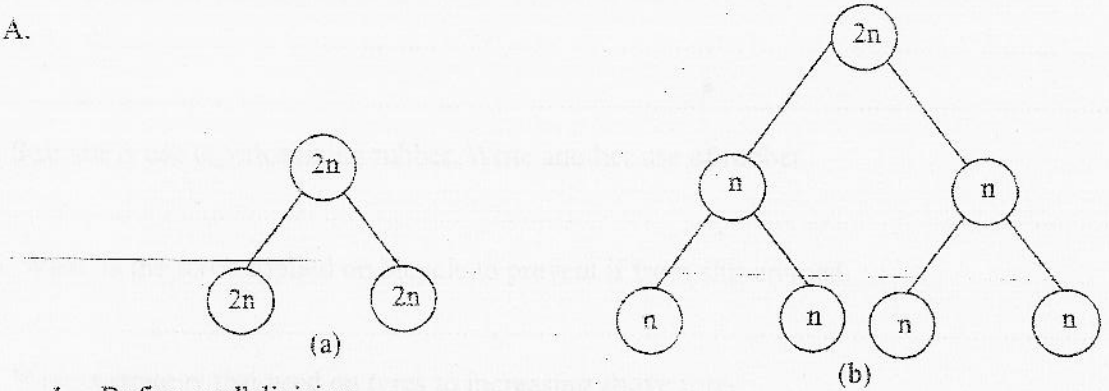
iii. Find the total displacement of an object
iv. Find the total distance traverse by an object
v. Calculate the velocity of an object during first 20 seconds
vi. What is the total time duration of that motion

B. Below diagram shows a velocity time graph



i. What is the initial velocity of an object
ii. Find the total distance travrersed from A-B
iii. The graph shows a straight line explain the meaning of it
iv. Write an example for above type of motion
v. What is the instance that object become stationary from above AB and C

8. A.

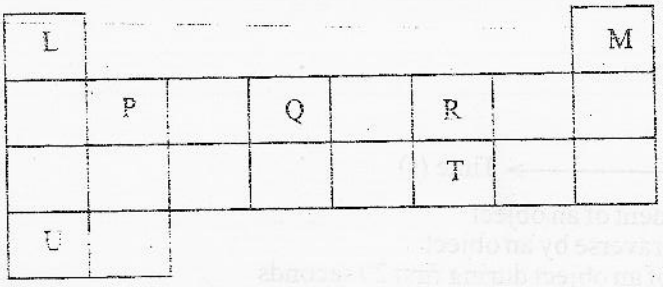


I. Define a cell division
ii. Name two type of cell division given above
iii. State two difference between above methods of cell division
iv. Write two instance which division a occurs
v. State a type cell division which contributes to maintance of the constant number
vi. Explain what is known as cell growth

B. A balloon filled with a gas on childs hand released and rises up vortically in the air.

i. Write down the newton law of motion which is connected to the instance mention above
ii. Write action and reaction respectively in above instance
iii. Find the force exeted on the balloon with 50 g which accelerates at $2ms^{-2}$
iv. Find the velocity of the balloon at maximum height it can be reached
v. What is the name of the force exacted on balloon to goes down
vi. Write the physical property of balloon surface which help to relise the gas inside it.

9. Diagram shows an arrangement of some elements in periodic table



i. state the element with lowest reactivity
ii. state the element with highest reactivity
iii. write two elements which belongs to the same period
iv. explain the reason for element "M" belongs to (viii) group
v. which of the above letter denotes sulphur
vi. write two observations can be obtained during the burning of sulphur in air
vii. write two gaseous elements from above
viii. write two forms of elements Q

B. It is difficult to stop the putt-nile (heavy iron ball) rolling on the ground

i. Define a velocity
ii. write an example for object which moves with uniform velocity
iii. the velocity above put is $0.5 ms^{-1}$ calculate the displacement of it during 10seconds
iv. write two instances where momentum is used in daily life
v. state two factors affected on above momentum

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