



# Jaffna Hindu College

## 1<sup>st</sup> Term Evaluation Exam - 2022

Grade - 10

Science

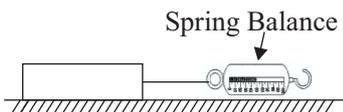
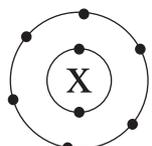
Time : 1.00 Hour

Name / Index No : .....

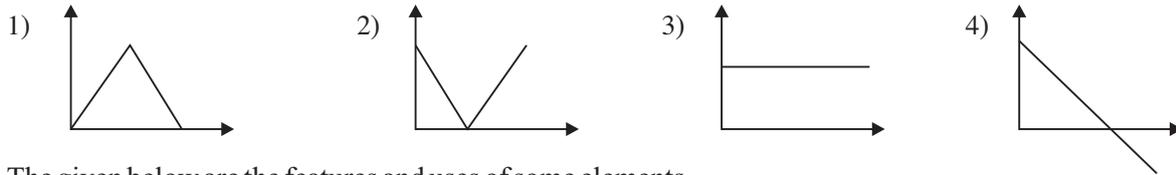
### Part - I

❖ Select most appropriate answer

01. Which is an inorganic compound found in highest proportion of the body of organisms?  
1) Carbohydrate                      2) Protein                      3) Lipids                      4) Water
02. A polysaccharide stored in animal body is,  
1) Glycogen                      2) Cellulose                      3) Starch                      4) Glucose
03. What is the unit of momentum?  
1) km/h                      2) Nm                      3) ms<sup>-2</sup>                      4) kgms<sup>-1</sup>
04. ♦ Electronic configuration of element A is 2,8,2  
♦ Electronic configuration of element X is 2, 8, 7  
what is the chemical formula of the compound formed by combination of elements A and X?  
1) A<sub>2</sub> X<sub>2</sub>                      2) AX<sub>2</sub>                      3) A<sub>2</sub>X                      4) AX
05. Consider the following statements regarding atomic structure  
a) Planetary model of an atom was introduced by Ernest Rutherford  
b) Negatively charged electrons are found inside the nucleus.  
c) When moving away from the nucleus the energy increasing, the difference between the energy levels also increases.  
of the above statements  
1) a and b are true                      2) b and c are true                      3) a is True                      4) a and c are true
06. An object of mass of 4kg is moving in a straight-line with an acceleration of 4ms<sup>-2</sup>.  
What is the amount of force exerted on the object in the direction of the motion?  
1) 16N                      2) 8N                      3) 4N                      4) 1N
07. Which of the following is a deficiency symptoms of element nitrogen?  
1) Chlorosis in mature leaves                      2) Dying of tissues at the tips of the leaves  
3) Extra thickness in leaves                      4) Red and purple patches on leaves.
08. Which of the following statements are correct regarding proteins?  
A - Protein is used in energy generation  
B - All proteins are enzymes  
C - Proteins act as hormones  
1) A and B                      2) A and C                      3) B and C                      4) A, B and C
09. Which of the following is method increase friction?  
1) Reducing the roughness of contact surface  
2) Applying lubrication oil between the contact surfaces  
3) Etching grooves on the surface of tires  
4) Inserting ball bearings between the contact surfaces

10. Which of the following answer contain metal, metalloid and non - metal elements respectively?  
 1) Li, Be, B                      2) Al, Si, P                      3) Ne, Na, Mg                      4) N, O, F
11. Which of the following is a strong basic oxide?  
 1) MgO                      2) Al<sub>2</sub>O<sub>3</sub>                      3) Na<sub>2</sub>O                      4) P<sub>2</sub>O<sub>5</sub>
12. The substance that are produced with in the organism to increase the rate of biochemical reactions are known as  
 1) Amino acids                      2) Enzymes                      3) Water                      4) Fatty acids
13. A stone falling vertically down after from rest takes 4s to reach the ground. What is its velocity when it reaches the ground? ( $g = 10\text{ms}^{-2}$ )  
 1)  $0.4\text{ms}^{-1}$                       2)  $4\text{ms}^{-1}$                       3)  $10\text{ms}^{-1}$                       4)  $40\text{ms}^{-1}$
14. Which of the following does not have carbon, hydrogen, oxygen and nitrogen as it structural element?  
 1) Amylase                      2) Cutin                      3) Hemoglobin                      4) Keratin
15. Which of the following is known as tonoplast?  
 1) Cellwall                      2) Plasma membrane                      3) Vacuole membrane                      4) Nuclear membrane
16. An element does not have valency is,  
 1) Ar                      2) Mg                      3) Al                      4) Na
17. Which group of element has highest electro negativity?  
 1) Group I                      2) Group VII                      3) Group V                      4) Group III
18. An organelle has the following features  
 ♦ Small organelles without a membrane  
 ♦ Made up of a large subunit and small subunit  
 ♦ Found freely in the cytoplasm or attached to endoplasmic Reticulum  
 Identify the above organelles  
 1) Golgi complex                      2) Nucleus                      3) Mitochondria                      4) Ribosomes
19. Which of the following statement/ statements is / are correct regarding displacement  
 A- It is a vector quantity  
 B- It has only magnitude  
 C - Standard unit of displacement is meter (m)  
 1) Only A and C                      2) C only                      3) Only B and C                      4) A,B and C
20.  2kg mass of block of wood is pulled along a horizontal surface, when the block of wood just begins to move, the reading of the Newton balance is 12N.  
 What is the limiting frictional force?  
 1) 8N                      2) 12N                      3) 20N                      4) above 12N
21.  What could be element denoted by the letter 'X' in diagram  
 1) F                      2) N                      3) Ne                      4) O
22. Which type of carbohydrate rich in germinating seeds?  
 1) Glucose                      2) Maltose                      3) Sucrose                      4) Cellulose

23. Velocity - time graph for the motion of the stone was projected vertically upwards until it reaches the ground is.



24. The given below are the features and uses of some elements.

- A - produce yellow color flame
- B - It is used to produce ammonia
- C - It is used to produce sulphuric acid

Element A, B and C are respectively

- 1) Mg, S, N                      2) Na, N, S                      3) S, N, Mg                      4) N, S, Na

25. Weight of a person on the earth is 600N. The weight of that person on the moon is 100N. What is the reason for difference in weight?

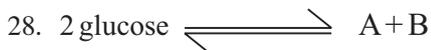
- a. The gravity of the earth is equal to the gravity of the moon
- b. No gravity on the moon
- c. The gravity of moon is greater than gravity of the earth
- d. The gravity of the earth is greater than gravity of the moon

26. An instance where Newton's third law is applied

- 1) Motion of satellite                      2) Motion of vehicle in a straight line  
3) Swimming                      4) Striking a carom disc

27. Water soluble and fat soluble vitamins are respectively?

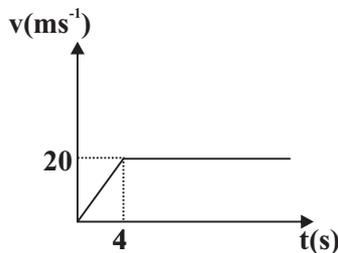
- 1) A and B                      2) D and E                      3) C and D                      4) B and C



Select the correct response for A and B respectively

- | A          | B                |
|------------|------------------|
| 1) Sucrose | CO <sub>2</sub>  |
| 2) Maltose | H <sub>2</sub> O |
| 3) Sucrose | H <sub>2</sub> O |
| 4) Lactose | H <sub>2</sub> O |

❖ Question 29,30 are based on the following velocity - time graph.



29. Rate of change of velocity during first 4s is,

- 1) 40ms<sup>-2</sup>                      2) 20ms<sup>-2</sup>                      3) 0.5ms<sup>-2</sup>                      4) 5ms<sup>-2</sup>

30. If the mass of this moving object is 3kg. what is the unbalance force acting on it first 4s?

1. 15N                      2) 12N                      3) 0.6N                      4) 60N

(30 x 2 = 60 marks)





# Jaffna Hindu College

## 1<sup>st</sup> Term Evaluation Exam - 2022

Grade - 10

Science

Time : 2.00 Hours

Name / Index No : .....

### Part - II

- ❖ Answer the four questions in Part A, in the space provided.
- ❖ Answer all question in Part B.

### Part - A

01. A. An ecosystem consists of living and non-living components and various interctions take place between them.



- 1) Identify the auto-tropic from the above ecosystem?  
..... (1 mark)
- 2) When the food is synthesised in above organisms,
  - a. What is the main product obtained?  
..... (1 mark)
  - b. State the structural elements consist in the above product.  
..... (1 mark)
  - c. Give the energy transformation that occurs during the above process.  
..... (2 mark)
- 3) Write a food chain with 3 links using the organism in the above ecosystem.  
..... (2 mark)
- 4) Give 2 ways in which aquatic environment can polluted.  
..... (2 mark)

**B.** In present situation, home gardening and organic farming are most suitable methods for food production.

1) Give one advantage and one disadvantage of organic farming.

.....  
 ..... (2 mark)

2) Give 2 examples for organic fertilizers.

..... (2 mark)

3) Food obtained from organic farming are highly nutritious.

a. Give 2 types of micro nutrients.

..... (2 mark)

b. Mention one of deficiency symptoms for following micro nutrients.

i. Iron .....

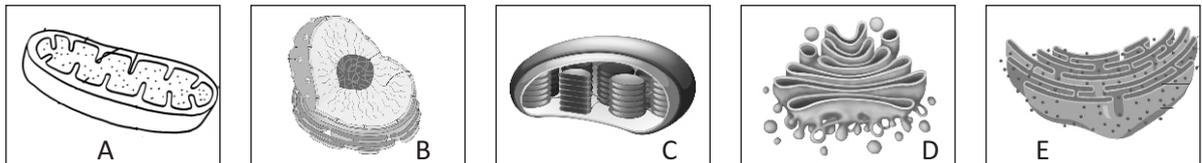
ii. Vitamin E .....

iii. Iodine ..... (3 mark)

4) Give 2 actions that can be taken at school level to minimize nutritional deficiency.

.....  
 ..... (2 mark)  
 (20 marks)

02. A. Give below are the diagrams of some structures and organelles.



i. Write the relevant letter of cellular organelle which have following features.

Features	Cellular Organelle
a. Double membrane bounded, organelle called as power house	.....
b. Double membrane bounded organelle, absorb light	.....
c. Membranous network made-up of flat or tubular sacs	.....

(3 mark)

ii. Which cellular organelle can be observed only in plant cell?

..... (2 mark)

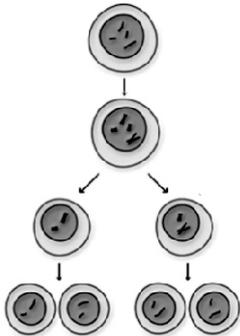
iii. In structure B, which part transfer the inherited characters?

..... (2 mark)

iv. Write the function of organell 'D'

..... (2 mark)

B. The cell division occuring in an organism is show in figure.



i. Identify the above type of cell division

..... (2 mark)

ii. Give the instances where the above type of cell division take place in animal cells.

..... (2 mark)

iii. During this type of cell division, if 28 chromosomes found in the mother cell, what is the number of chromosomes found in the daughter cell?

..... (2 mark)

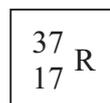
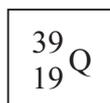
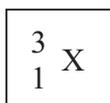
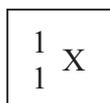
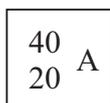
iv. Give one significance of above cell division for the continuation of life.

..... (2 mark)

v. Mention other type of cell division and give two differences between them.

.....  
 .....  
 ..... (3 mark)  
 (20 marks)

03. A. Standard representation of atomic number and mass number of some elements are given below. The symbols given in it are not true symbols. Answer the questions given below based on it.



i. Identify the element A? In which group it belongs?

..... (2 mark)

ii. What would be the isotopes of hydrogen?

..... (2 mark)

iii. Which element does not have neutrons in it's atom?

..... (2 mark)

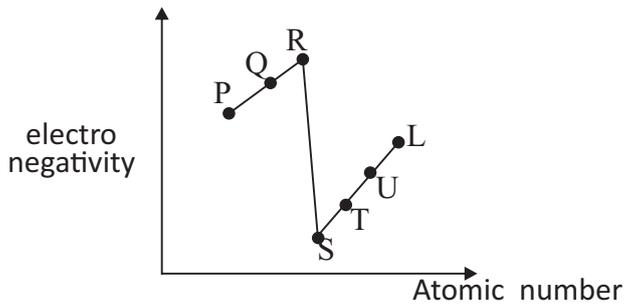
iv. Which element shows the similar chemical properties with element magnesium?

..... (2 mark)

v. Give the number of protons and atomic number in an atom of element Q.

..... (2 mark)

B. P, Q, R, S, T, U, B are consecutive elements belongs to period 2 and 3 in the periodic table. The variation of electro negativity of those element is given below. (The letters are not standard symbols) Answer the questions given below based on it.



i. Which element belongs to group VII?

..... (2 mark)

ii. What would be the element nitrogen?

..... (2 mark)

iii. Write the electronic configuration of element Q.

..... (2 mark)

iv. Which metallic element has low density than water?

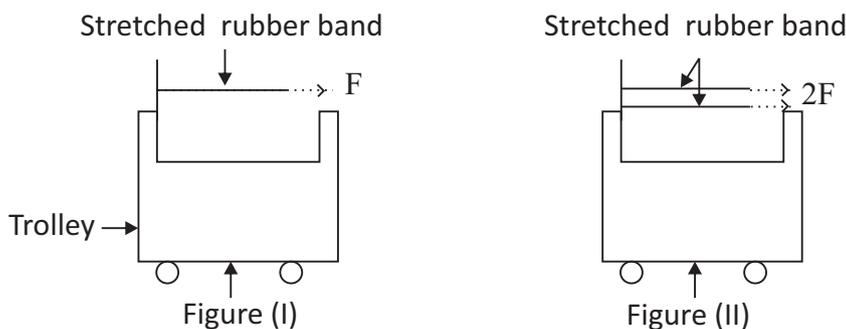
..... (2 mark)

v. Write the chemical formula of the compound formed by the combination of elements Aluminum and Oxygen.

..... (2 mark)

(20 marks)

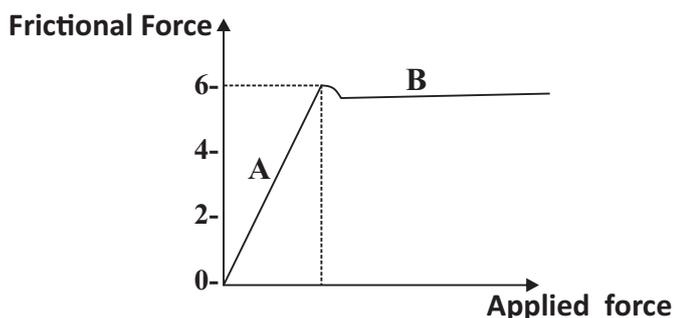
04. A. Below is an experimental set-up to vary one of Newton's law of motion.



- i. Which trolley moves with high acceleration when releasing the stretched rubber band.  
..... (2 mark)
- ii. Give the reason for the answer mentioned in question i.  
..... (2 mark)
- iii. In figure I, the above activity was performed by connecting an extra mass with trolley. What happens to the acceleration of that trolley.  
..... (2 mark)
- iv. Write the law related with above activity.  
..... (2 mark)
- v. In figure II, If the mass of the trolley is 25kg and the applied force 20N, What is the acceleration of the trolley?  
..... (2 mark)

**B.** A block of wood placed on the table was connected with a spring balance and a horizontal force was applied on it.

The figure below shows the variation of frictional force exerted on the block against the applied horizontal force.

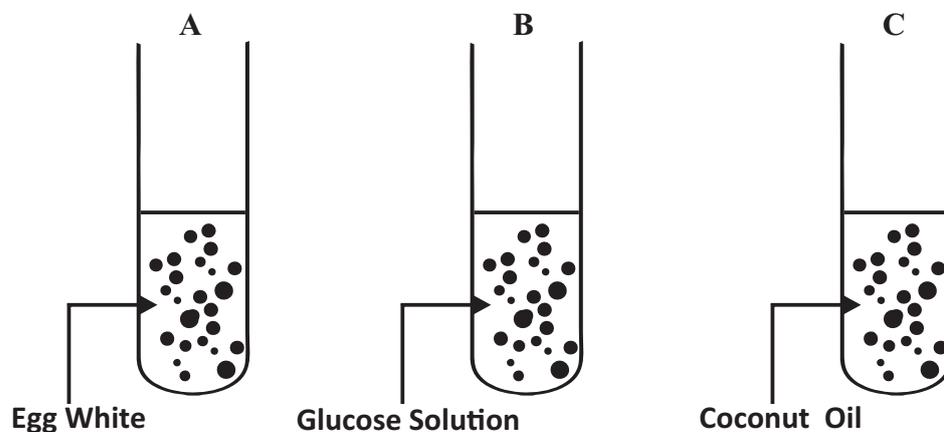


- i. What is the value of limiting frictional force?  
..... (2 mark)
  - ii. What are the factors influencing the limiting frictional force?  
..... (2 mark)
  - iii. What type of frictional force is acting at B?  
..... (2 mark)
  - iv. Give one beneficial effect of friction  
..... (2 mark)
  - v. Walking on rain days with worn out footwear is dangerous. What is the reason for that.  
..... (2 mark)
- (20 marks)

## Part - II (B)

❖ Answer all questions.

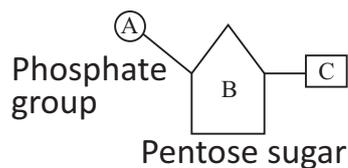
05. A. The below set - up were arranged by grade 10 students to identify the major organic compound present in foods.



- Mention the types of organic compound found in setup A, B and C (3 mark)
- Which set-up should heat up to get observation? (1 mark)
- What is the observation obtained during heating the set-up mentioned in question no ii. (2 mark)
- What are the substances found in the reagent used to test the organic compound in the set - up A? (2 mark)
- Give 2 uses of organic compound contained in set up - C. (2 mark)

B. The diagram below shows the structural unit of a organic compound.

i.



- Name the above structural unit? (1 mark)
  - Identify the constituent denoted by letter 'C'? (1 mark)
- Give 2 significance of DNA. (2 mark)
  - Give 2 significance of RNA. (2 mark)
  - Give 2 contributions of water for the maintenance of life. (2 mark)
  - Give 2 special features of water. (2 mark)
- (20 marks)

06. A. Part of the periodic table given below. The symbols are not true symbols of the respective elements.

Answer the following questions.

								G
	F		D		E			
A							H	
	C							

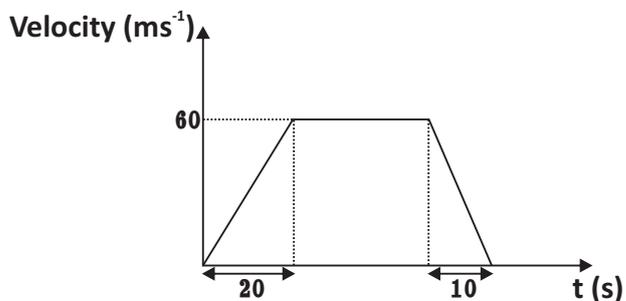
- i. On which basis the modern periodic table is constructed? (1 mark)
  - ii. From the above elements,
    - a. Solid state non metal .....
    - b. Being a gas in elemental state .....
    - c. Element that forms strong acidic oxide .....
    - d. Element having three energy levels.....
    - e. Give a pair of element that belonging to the same group in periodic table. (5 mark)
  - iii. Give two crystalline allotropic form of element carbon. (2 mark)
  - iv. Which element has the electronic configuration 2, 8, 7? identify the valency of it? (2 mark)
  - v. Which gas is produced during the reaction of element sodium with dilute hydrochloric acid? (2 mark)
- B.** An amount of energy should be supplied to remove an electron from the energy level of an atom.
- i. Which unit is used to measure the first ionization energy? (2 mark)
  - ii. Give the chemical equation for forming a unipositive gaseous ion of sodium from sodium atom in gaseous state. (2 mark)
  - iii. Write the chemical formulae of the following compounds.
    - a. Magnesium Oxide
    - b. Calcium Carbonate (2 mark)
  - iv. Write two observations when magnesium heated in air? (2 mark)
- (20 marks)

07. A. Give two scientific term that the following phrases refer to.

- i. A change of position that occurs from one point to another
- ii. The distance traversed in a unit time
- iii. The rate of change of velocity
- iv. The change of displacement in unit time.

(4 mark)

B. Below is a velocity - time graph of a train traveling. along a straight line from one station to the next.



i. What is the uniform velocity of the train? (1 mark)

ii. The distance traveled by the train under uniform velocity is 6km. How long has it taken to travel the above distance? (3 mark)

iii. Calculate the acceleration during the first 20 s? (2 mark)

iv. How far did the train travel with deceleration? (2 mark)

v. Find the distance between the railway stations. (3 mark)

vi. Mention the non-matter factor that pollutes the environment by the train. (2 mark)

C. Consider the motion of mass of 0.1 kg is thrown vertically upwards with the velocity of 5ms<sup>-1</sup>.

i. What is the acceleration for the motion of stone? (1 mark)

ii. If the stone reaches the ground after 2s, what is the velocity when it reaches the ground? (2 mark)

(20 marks)