

WP / GM / Bandaranayake College - Gampaha
First Term Test - 2023

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Grade 10

Science

Time : 1 Hours

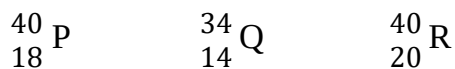
Name : Class :

● **Underline the most suitable answer.**

01. Select the most abundant organic compound is,
i. Protein ii. Nucleic acid iii. Carbohydrate iv. Lipids
02. The maximum number of electrons in 3rd energy level is,
i. 8 ii. 14 iii. 32 iv. 18
03. The unit of momentum is,
i. kgms⁻¹ ii. kgsm⁻¹ iii. kgms⁻² iv. kgsm⁻¹
04. Which one is an adaptation of human body which increase friction,
i. Cartilage of joints. ii. Increasing the surface area of foot
iii. Lines of palm iv. Strong nails.
05. A child shows dry skin, wounds in mouth and anemia. Which deficiency syndrome is shown by the child,
i. Vitamin A ii. Vitamin B iii. Vitamin C iv. Vitamin D
06. What is **A** and **B** in following equation.

$2C_6H_{12}O_6$	$\rightleftharpoons$	$C_{12}H_{22}O_{11} + H_2O$		A	B
A		B		i. Glucose	Cellulose
				ii. Fructose	Cellulose
				iii. Glucose	Glycogen
				iv. Glucose	Maltose
07. Which one explains Newton's second law.
i. When kicking a ball, it travels certain distance and stops.
ii. When braking a bus suddenly, passengers move forward.
iii. Sending a water rocket to the space.
iv. Floating a rubber ball on water.

08. Information about 3 elements are given below.



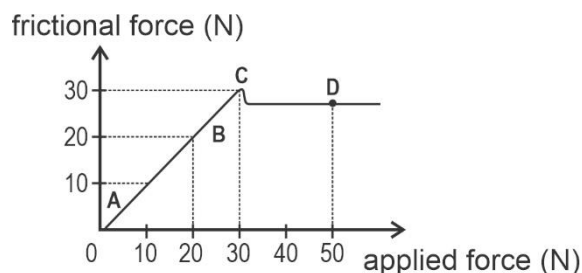
Select the correct answer about them.

- i. P and R are isotopes.
- ii. P and R belong to the same group.
- iii. P and Q belongs to same period.
- iv. The atomic number of P and R are equal.

09. Which polysaccharide help to prevent constipation.

- i. Cellulose
- ii. Glycogen
- iii. Starch
- iv. Maltose

10. The graph shows the variation of frictional force with applied force for an object which is moving on a uniform flat surface.



Select the correct statement.

- i. The object is in stillness in B position.
- ii. The object moves in uniform velocity.
- iii. The velocity at C is highest.
- iv. The limiting frictional force applied in an instance.

11. Which letter shows acceleration?

- i. A
- ii. B
- iii. C
- iv. D

12. Select the amphoteric oxide.

- i. K_2O
- ii. Al_2O_3
- iii. P_2O_5
- iv. CO_2

13. A - Electronegativity is measured by kJmol^{-1}

B - The Electronegativity of elements is decreased when it goes from left to right.

C - The Electronegativity of elements is decreased when it goes from top to bottom through a group.

Which statement is correct?

- i. A and B
- ii. B and C
- iii. A and C
- iv. A, B and C

14. The velocity decreases 40ms^{-1} to 20ms^{-1} within 5 seconds of an object which was moved on a linear path. Find its acceleration.

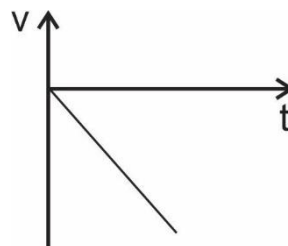
- i. $\left(\frac{40 - 20}{5}\right) \text{ms}^{-2}$
- ii. $\left(\frac{20 + 40}{2}\right) \times 5 \text{ms}^{-2}$
- iii. $\left(\frac{20 - 40}{5}\right) \text{ms}^{-2}$
- iv. $\left(\frac{20 - 40}{2}\right) \times 5 \text{ms}^{-2}$

15. Stored carbohydrate in plant and animal bodies are,
- Starch and lactose
 - Starch and glycogen
 - Lactose and starch
 - Cellulose and glycogen
16. The mass of an object on moon is 500g. What is the mass and weight of that object on Earth?
- 0.5N and 500g
 - 30N and 500g
 - 5N and 500g
 - 30N and 3kg
17. Essential elements in a protein are,
- C, H and O
 - C, H, O and N
 - C, H, O and S
 - C, H, O, N and S
18. Which one is the falls statement?
- Metals release electrons and form anions.
 - Nonmetals release electrons and form anions.
 - Nonmetal oxides are acidic.
 - Diamonds have high refractive index and is a heat insulator.
19. What is the inorganic component in living bodies?
- Nucleic acid
 - Lipids
 - Water
 - Protein
20. Find the force that should be cut on 800g when it accelerates 2ms^{-2} .
- 1.6N
 - 1600N
 - 400N
 - 0.4N
21. Which one is not a use of nitrogen element?
- As a filling of rubber
 - As colourless gass
 - As a coolant
 - As raw material when producing fertilizer
22. Which organelle does not contain membrane?
- Golgi body
 - Ribosome
 - Endoplasmic
 - Neucleus
23. When “F” external unbalanced force is exerted on “m”, its acceleration is “a”. When the mass “m” is doubled its acceleration is,
- $a\text{ ms}^{-2}$
 - $2a\text{ ms}^{-2}$
 - $\frac{a}{2}\text{ ms}^{-2}$
 - $a^2\text{ ms}^{-2}$
24. Which organelle helps to balance water in a cell.
- Vacuole
 - Chloroplast
 - Cell wall
 - Cell plasma

25. The stable iron which belongs to 3rd period is R^{-2} .
The electronic configuration of this iron is,
- 2, 8, 6
 - 2, 8, 8
 - 2, 8
 - 2, 8 2
26. The formula of chemical compound between R and C,
- C_2R
 - R_2C
 - RC_2
 - CR_2
27. Which factor is not in cell theory?
- The structural unit of organisms is cell.
 - All cells of an organism are living.
 - New cells are formed by free existing cells.
 - All organisms are made up of one cell or number of cells.
28. When a motor car travels up through grass land in a rainy day slips down. Which method can be used to drive that vehicle up on the same land?
- Wash tires well till cuts appear.
 - Loading several sand gunny bags onto the vehicle.
 - Driving reversely.
 - Reducing the weight of the car by unloading goods and people in it.
29. When apply four wheels for a vehicle (4WD) and drive forward, its frictional force act,
- Parallel to the road and backward.
 - Parallel to the road and forward.
 - Perpendicular to the road and backward.
 - Perpendicular to the road and forward.
30. Which statement is wrong about the test used to identify water in foods?
- Holding a glass plate to collect water drops by condensing.
 - Anhydrous copper sulphate or cobalt chloride is used to identify water vapour.
 - Anhydrous cobalt chloride in pink colour turns into blue.
 - Anhydrous copper sulphate turns into blue due to water vapour.
31. Which statement is correct about an atom?
- The atomic number is equal to number of neutrons.
 - The mass number is equal to the number of nucleons.
 - Number of nucleons equal in isotopes.
 - Number of neutrons equal to the number of electrons.
32. When sudden brake of running vehicle, passengers move forward. This phenomenon is explained by,
- Law of conservation of momentum.
 - Newton's 2nd law.
 - Newton's 3rd law.
 - Newton's 1st law.

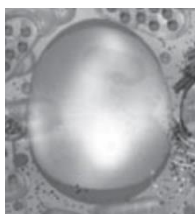
33. When it goes through a group top to bottom in the periodic table,
- Decreases the Electronegativity.
 - Increases the 1st ionization energy.
 - Increases the acidic nature.
 - Decreases the metallic property.

34. Following velocity-time graph explains,
- Throwing a ball upwards.
 - Stopping a vehicle by applying brakes.
 - Throwing a ball towards the wicket.
 - Falling of a body from the roof to the floor.



35. What is meant by tonoplast?
- Cell plasma
 - Cell membrane
 - Membrane of vacuole
 - Nuclear membrane
36. Which statement explains the “chemical formula”?
- It explains elements in a compound.
 - It gives short name for the name of compound.
 - It explains the number of atoms of an element which make a compound.
 - It is a short method to memorize.
37. When a child on a boat project a 1kg of stone forward,
- The child moves forward
 - The boat moves backward
 - The boat moves forward
 - The child moves backward

38. What is the function of given organelle?



- It protects illness and diseases.
 - It removes acid produces in the cells.
 - It helps to collect waste products.
 - It takes nutrients, hormones etc. which is needed to the cell
39. When a 50g glass ball and 5kg shot put were fallen at once from a tall building. (Consider as no air resistance) Find the falls statement.
- The velocities of both objects are equal when they touch the ground.
 - The times taken for both objects are equal.
 - The accelerations of both objects are equal.
 - The momentums of both objects are equal.
40. Select the true statement.
- The basic property of Na_2O is higher than MgO .
 - SiO_2 is a neutral oxide.
 - The 1st ionization energy of “Na” is higher than its in “K”.
 - The electronic configuration of “S” is higher than “O”.



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පළමුවාර ඇගයීම - 2023
First Term Evaluation - 2023

Grade } 10

Subject } Science

Time } 3 hours

Name - No -

Part A

Answer all questions in the given space.

01. (A) The structural unit of living organism is the cell.

I. Write in steps the method of preparing slide to observe a plant cell.

Step 1

Step 2

Step 3

II. Draw the labeled diagram for above specimen through the compound light microscope.

III.



a) What is the organelle given in this figure

b) What is the function of the above organelle

.....

(B) i. Name 5 most abundant elements in main bio molecules

.....

ii. If the formular of "X" oxide is $Mg_3 X_2$

a) Find the valance of X -

- b) Oxide of x element is dissolved in water and tested with litmus. Fill the table with your observations.

Indicator	Color
Blue litmus	
Red litmus	

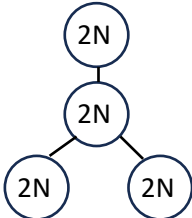
(C) the mass of the microscope is 5kg (gravitational acceleration is 10 ms^{-1})

- Find the weight of microscope
-
- When a microscope is kept on a table mark forces act on it
- Calculate the force act on it when it is moved upward by 1 ms^{-2} acceleration



02. (A) cell division and cell growth is a main character of living organisms

- Explain cell growth and cell division
 - Cell growth
 - Cell division

- 
 (a) which method of cell division is given in this figure
.....

(b) Explain this method of division
.....

- Which division method is used to produce gametes
- Write features of a cell which is close to cell division
.....

(B) Chromosomes which contain genetic factors are transferred from parents to children

- What is the number of chromosomes in human somatic cell -
- How many chromosomes are obtained by child from his father
.....
- What is meant by homozygous chromosomes

(C) The structure of the DNA molecule is given here.

- i. What is the structural unit of nucleic acid which are in a nucleus

.....

- ii. Name 3 main components of the nucleic acid show it using a diagram

.....

.....

.....

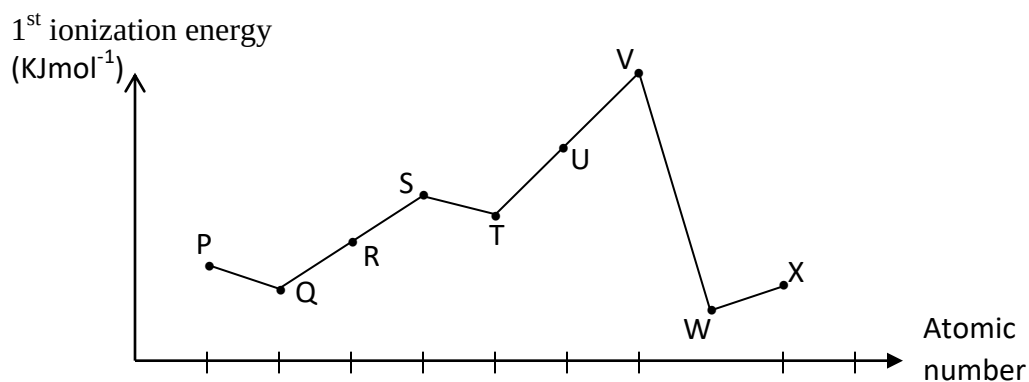
- iii. What is the type of nucleic acid which help to synthesize proteins

.....



03. i. What is meant by first ionization energy

- ii. The pattern of change of 1st ionization energy of consecutive elements in the periodic table are given below 'Q' element makes amphoteric oxide



- 1) Name two metal elements

- 2) Name two elements in gaseous state

- 3) Name a crystalline allotrope

- 4) 'W' takes less 1st ionization energy than 'V' Explain the reason

.....

.....

- 5) Write the electronic configuration of x

- 6) Write the chemical formula of the compound formed between U and Q

.....

- 7) Name two elements in the same group

.....

8) Write two uses of R element

.....

04. (A) The data according to the motion of an object which travels on a linear path is given below

Time (S)	0	1	2	3	4	5	6	7	8	9	10	11
Velocity (ms^{-1})	0	3	6	9	12	15	15	15	15	10	5	0

i. Draw the $v - t$ graph



ii. Find the acceleration

.....

iii. Find the displacement which travels in uniform velocity.

.....

iv. Find the mean speed of the object

.....

(B) If the mass of the object is 1000kg

i. Find the weight of the object

ii. Find the force act by the engine when it accelerates

.....

iii. Which type of friction acted from 8th second to 11th second when it applied brake

.....

iv. What type of change happened when breaking the vehicle on the rainy day

.....

☞ Select three questions out of 5, 6, 7, 8 and 9 questions

05. Enzymes are important organic compounds which are synthesized in living bodies

- (A) i. What is meant by enzymes
- ii. Name two equipments that you needed to test the action of enzymes in the laboratory
 - iii. Explain the method of preparing enzymes for this experiment
 - iv. Explain the way of taking observations in two steps
 - v. What is the last conclusion of that experiment
- (B) i. From which bio molecule enzymes are formed
- ii. What are chemicals which are used to identify above bio molecule
 - iii. What are color changes that can be observed in above experiment
 - iv. If you need to test sugar in above food which chemicals are used for that
 - v. Write steps of above experiment when identifying sugar
 - vi. What is the reason of adding drops of acids in the food sample
 - vii. Write the series of colors you could observe in above experiment

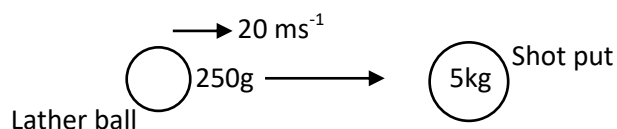
06. “Electro negativity” is one methods to examine patterns of periodic table

- i. Define the term “Electronegativity”
- ii. What is the measuring unit of it
- iii. (a) Name the element which has highest Electronegativity
 - (b) What is the period of it and explain the reason that it belongs to that period
 - (c) What is the group of that element and explain the reason that belongs to that group
- iv. What is the name of method that use to classify elements today
- v. How elements are classified according to that
- vi. (a) Explain the reason for increasing electro negativity when it goes left to right
 - (b) What is the reason for increasing Electronegativity of “O” comparatively “S”
 - (c) What is the reason for 8th group elements are not taking a value for Electronegativity
- vii. (a) Write electronic configuration of element C , Na and O
 - (b) Write those elements according to ascending order of Electronegativity

07. (A) When a 2kg weight water rocket is projected upward it takes 8 seconds to come back same position (gravitational acceleration – 10ms^{-1})

- Find the time taken to reach the maximum height
- What is the initial velocity of the rocket when it is projected
- Calculate the maximum height that rocket moves
- Draw a velocity time graph for total motion till it come back to the same position.
- Name the action and reaction when the rocket moves.

(B) According to the picture 5kg weight shot put is move by 250g lather ball which moved 20 ms^{-1} velocity on a smooth surface.

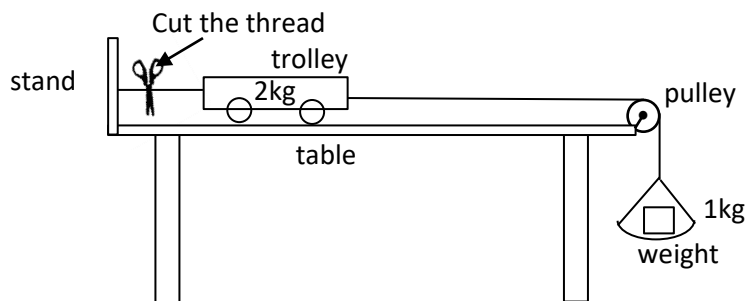


- Explain the term momentum
- What is the momentum of lather ball
- After knock the ball with shot put, the ball stopped. Find the initial velocity of the shot put.
- What is meant as smooth surface
- Write two techniques to reduce friction

08. (A) External covers protect the cell. It protects inner parts of a cell as well as maintain the shape

- What is the external cover of an animal cell
- What are two main components of this organelle
- Wich bio molecule helps to produce hormones like estrogen progesterone
- Write a chemical which is used to identify above bio molecule
- Write the relevant mineral related with following deficiencies
 - Rickets an lack of growth
 - Retardation of growth
 - Growth of plants reduces and chlorosis

(B) 1kg weight is hung by a light thread and connected to a 2kg weight trolley which is on a smooth surface. When the thread is just cut trolley moves (gravitational acceleration = 10 ms^{-1})



- i. Find the force on the trolley is act by the weight
- ii. When the thread is cut, trolley moves towards the pulley. Find the unbalanced force act on the trolley
- iii. Find the frictional force act on the trolley
- iv. Which type of friction act on it
- v. When the weight is increased up to 2kg write observation about the motion of the trolley
- vi. Write the conclusion using above two instances
- vii. Which newton's law of motion act on the trolley

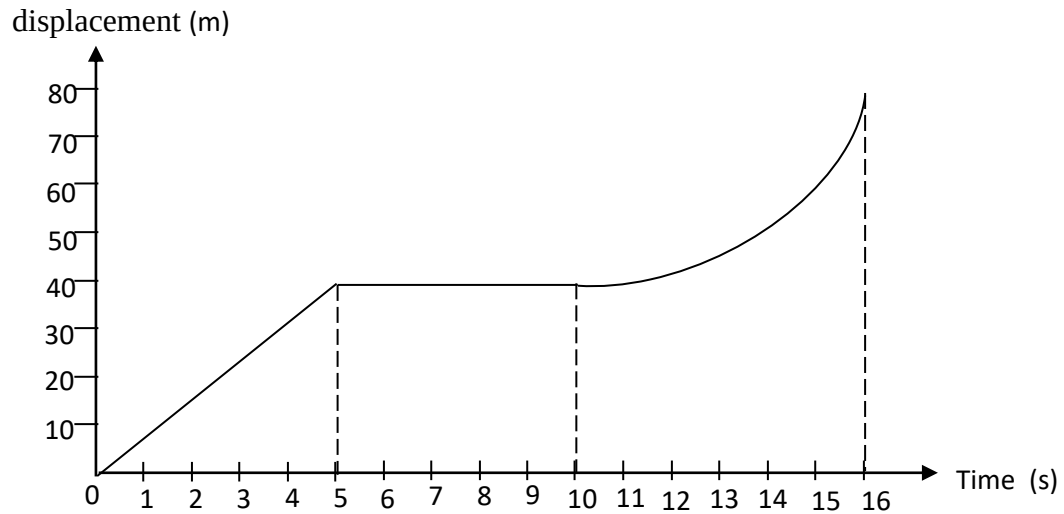
09. (A) Slandered chemical formulars of some elements given below (given letters are not actual symbols)



Answer using given symbols

- i. What is meant by isotopes
- ii. Answer about T element
 - a) Electron configuration
 - b) Number of neutrons
 - c) Number of nucleons
 - d) The group
- iii. Name two isotopes from above element
- iv. Which element makes most basic oxide
- v. Write the chemical formula between M and element mentioned above
- vi. Write observations when red and blue litmus is added into solution of above compound

(B) Following displacement – time graph shows the journey of bicycle rider



- What is the time duration that bicycle rider moves uniform velocity
- Find the velocity of the bicycle on that time period
- What is the time period that bicycle has stopped
- What is the time period that bicycle rider has moves in aslope
- Explain nature of the motion on that period
- Find the mean speed of the bicycle rider
- Write two techniques to increase the friction of the bicycle



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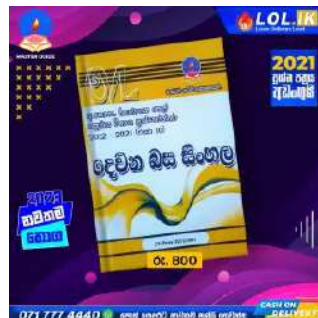
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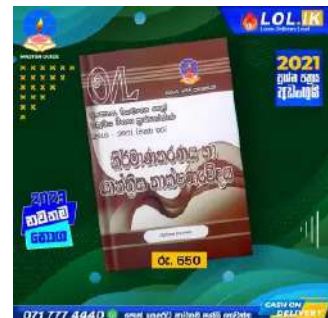
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