



Grade

10

SECOND TERM TEST - 2019

SUBJECT - **Science- I**

School :

Name of the Student/ Index No :

Time : 01 hrs.

Instructions:-

- Answer all the questions.
- In each of the questions 1 to 40 select the correct or most appropriate answer from the given alternatives (1) (2) (3) (4)
- In the answer sheet provided, mark a cross (x) on the number in the circle corresponding to your choice for each question.

01. Which of the following carbohydrate contains in plants?

- (1) Glycogen (2) Cellulose (3) Lactose (4) Keratin

02. The electronic configuration of an element is 2,6. The charge of the iron formed by this element is,

- (1) +2 (2) -4 (3) -2 (4) -6

03. The quantity with a magnitude and a definite direction is,

- (1) Distance (2) Speed
(3) Displacement (4) Time

04. Which of the following is true about the living cells?

- (1) Cell wall consists of cellulose, hemi cellulose and pectin.
(2) Plasma membrane is made up of phospholipids and pectin.
(3) Plasma membrane is a living structure and is totally permeable.
(4) Ribosome is a small organelle surrounded by a membrane.

05. Which of the following is non – polar?

- (1) H₂O (2) HCl (3) HF (4) H₂

06. The definition of force is illustrated by,

- (1) Newton's first law (2) Newton's second law
(3) Newton's third law (4) Newton's first and second laws

07. What is more suitable to observe organelles of a cell?

- (1) Simple microscope (2) Light microscope
(3) Electron microscope (4) Telescope

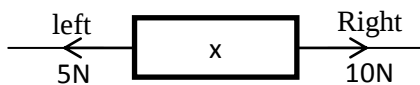
08. The chemical formula of condiss is,

- (1) NaOH (2) CuSO₄
(3) Na₂CO₃ (4) KMnO₄

09. The force which the objects are attracted towards the earth is called,

- (1) Mass of the objects (2) Weight
(3) Velocity (4) Gravitational acceleration

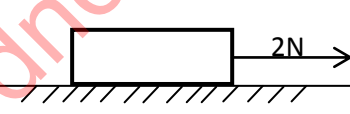
10. Which response contains the magnitude and the direction of resultant of two forces illustrates the diagram given below?



- (1) 10N towards right (2) 10N towards left
(3) 5N towards right (4) 5N towards left

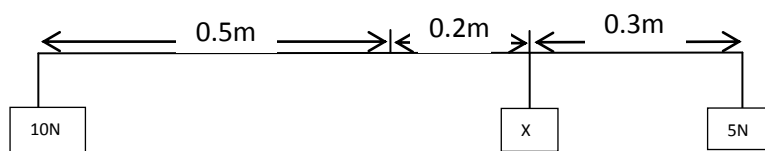
11. The disease caused by Human Immune Deficiency Virus is,

- (1) Syphilis (2) AIDS
(3) Gonorrhea (4) Herpes

12. Which of the following is not a natural vegetative propagation method of plants?
- Suckers
 - Runners
 - Underground stems
 - Tissue culture
13. X and Y are elements belong to Group II and group VI respectively. What is the probable formula of the compound which is formed by the reaction between X and Y.
- XY
 - X₂Y
 - X₄Y₂
 - X₂Y₄
14. Select the correct statement regarding the graphite and diamond,
- Two isotopes in a same element
 - Two allotropes in a same elements
 - Two different elements
 - Two different compounds
15. A method of increasing friction is,
- Grooves are etched on the surface of tyres
 - Polishing the contact surface
 - Applying lubricators between the contact surfaces
 - Using bearings between the rotating parts.
16. Following is the equilibrium of an object under a force of 2N. The object is kept on a rough surface. The reason for this phenomena is,
- Frictional force on the object is less than 2N.
 - Frictional force on the object is higher than 2N.
 - Frictional force on the object is 2N.
 - Frictional force on the object is 2N or greater than 2N.
- 
17. The compound consisting the highest moles of oxygen atoms is,
- C₆H₁₂O₆
 - CH₃COOH
 - K₂Cr₂O₇
 - Ca₃(PO₄)₂
18. How many molecules are there in 90g of water?(H = 1, O = 16)
- $\frac{18}{90} \times 6.022 \times 10^{23}$
 - $\frac{90}{18} \times 6.022 \times 10^{23}$
 - $18 \times 6.022 \times 10^{23}$
 - $90 \times 6.022 \times 10^{23}$
19. What is the basic criterion of plant classification?
- Nature of root system
 - Branching / un branching nature.
 - Formation of seeds
 - flowering nature
20. Which of the following structure results in the process of fertilization of a human sperm and an ovum
- Embryo
 - Zygote
 - An individual
 - Group of cells
21. An object is in equilibrium under two forces. A Student makes the following statements as reasons for the above phenomena. The correct statement is,
- Two forces are equal in magnitude and lie along the same line of action
 - Two forces are equal in magnitude act along two opposite directions.
 - Two forces are coplanar an equal in magnitude
 - Two forces are equal in magnitude and direction.
22. During tug – or – war, there are instances when the rope is at rest while two forces act on both side. The reason for that is,
- Forces lie along the same line of action
 - Forces act along two opposite directions
 - Forces are coplanar
 - The resultant of two forces is zero
23. The instrument used to measure the growth of plants is,
- Photometer
 - Anemometer
 - Auxanometer
 - Meter ruler

24. Plant in the school garden are named of mango is written as follows "Mangifera Indica". The science teacher identified some mistakes of the scientific name of mango and corrected it. What is correct scientific name of mango?
- (1) MANGIFERA INDICA (2) Mangifera indica
(3) Mangifera indica (4) mangifera Indica
25. The relative atomic mass of Na shows accurately as,
- (1) $\frac{\text{mass of Na atom}}{\text{mass of } ^{12}_6\text{C atom}}$ (2) $\frac{\text{mass of atom}}{\text{mass of Na atom}}$
(3) $\frac{\text{mass of } ^{12}_6\text{C atom}}{\text{mass of Na atom}}$ (4) $\frac{\text{mass of Na atom}}{\text{atomic mass unit}}$
26. Of the following, which oxide shows acidic nature?
- (1) P_2O_5 (2) Na_2O (3) MgO (4) K_2O
27. Three scientific concepts should be learnt by grade 10 students are shown below.
a) Equilibrium of force b) Resultant force c) momentum of force
- Which concept / concepts is best described using a balance,
- (1) Only a (2) Only c
(3) Only a and b (4) All a, b and c
28. The quantities measured by meters per square second is,
- (1) Acceleration and deceleration (2) Velocity and acceleration
(3) Deceleration and velocity (4) Displacement and velocity
29. Out of the following statements which statement is correct regarding the eukaryotes?
- (1) Involve in forming symbiotic relationship called lichens.
(2) Fix atmospheric nitrogen to increase soil nitrate level
(3) Does not consist an organized nucleus
(4) Organisms cause diseases such as tuberculosis Leprosy belong to this group.
30. Given below are some statements about the reproduction of plants.
- a) Contributes only one parental organism
b) Gives rise to off springs which are more like maternal organism
c) No production of gametes
d) Meiosis occurs
- Select the correct statement / statements regarding asexual reproduction.
- (1) only a (2) only a and b
(3) only a, b and c (4) all a, b, c and d
31. Lewis structure of ammonia is,
- (1) NH_3 (2) $\text{H} - \overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{N}}} - \text{H}$
(3) $\begin{array}{c} \times \times \\ \text{H}_0^\times \quad \text{N} \quad \times \text{H} \\ 0 \times \\ \text{H} \end{array}$ (4) $\text{H} : \overset{\cdot\cdot}{\underset{\cdot\cdot}{\text{N}}} : \text{H}$
32. The answer contains minimum and maximum number of molecular moles respectively is (S=32, O=16, N=14, H=1, C=12),
- (1) SO_2 16g and NH_3 17g (2) NH_3 17g and SO_2 16g
(3) H_2O 2g and NH_3 51g (4) SO_2 16g and CO_2 88g
33. An ant is on the edge of a circular sugar container lid that has a radius of 7cm. From the point it was standing on, it moves half way around the edge of the lid. What is its displacement?
- (1) 14 cm (2) 22 cm
(3) 44 cm (4) 154 cm

34. As shown in the following diagram a uniform rod is suspended and balanced at its center. Find weight X.

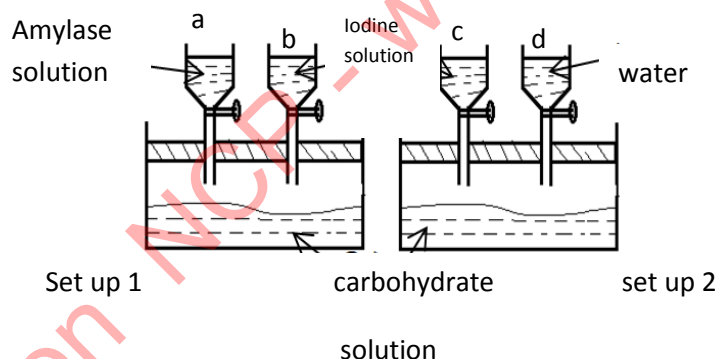


- (1) 5 N (2) 10 N (3) 12.5 N (4) 17.5 N

35. Which of the following gives the correct elemental composition of bio molecules that build up the living body?

Bio molecule	Elemental composition
1. Carbohydrates	C, H, O
2. Nucleic acid	C, H, O, N
3. Protein	C, H, O, P
4. Lipid	C, H, O, S

36. The diagrams below show two setups of an experiment prepares by a student on food test. First the taps of setups are opened. Then 10 minutes later the taps of set ups B and c are opened .The followings are statements the student wrote about the experiment.



- Demonstrate activity of enzyme on food by these experiments.
- The set – up using water considered as the control experiment
- The starch solutions of two set – ups turn blue as soon as the taps are opened.

Which of the statement made the student are correct?

- (1) Only a and b (2) Only b and c
(3) Only a and c (4) All a, b, c

37. Some facts of few elements are given below.

x – mass number is 39. Number of neutrons is 20.

y – electronic configuration is 2,6

z – There are 17 protons in nucleus

The following chemical compounds are assumed to be formed when 3elements reacted with each other.

P – x_2y Q – xz R – zy S – xy

The answer correct containing only chemical formulae is,

- (1) P and Q (2) P and R (3) Q and R (4) Q and S.

38. Applications of four elements are given bellow.

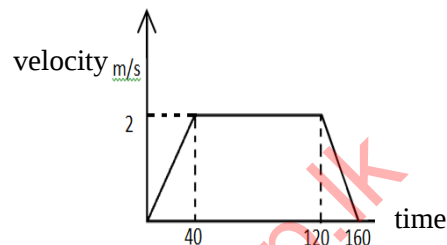
- Making transistors and diodes
- To produce vulcanized rubber
- Making pencils
- To fill vehicle tyres

Choose the correct answer that shows application of relevant element.

Silicon	Sulphur	Carbon	Nitrogen
(1) c	a	b	d
(2) a	c	b	d
(3) a	b	c	d
(4) d	c	a	b

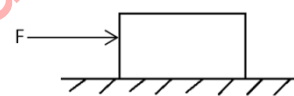
39. The velocity – time graph given here is relevant to which Motion stated below.

- (1) Object at rest for 20 s
- (2) Object moved back to the initial position
- (3) Object moved along a straight path
- (4) Object obtained 2ms^{-1} velocity at the end of 40s



40. An object on a rough surface moves forward when a constant force F is applied on it. Below are 4 statements about this incident.

- a. The force that causes motion is less than F
- b. F is greater than limiting frictional force
- c. Static frictional force between the two surfaces is less than F
- d. Dynamic frictional force between the two surface is equal to F



Select the correct statement/ statements.

- (1) Only a
- (2) Only a and d
- (3) Only b,c and d
- (4) Only a,b and c



Grade

10

SECOND TERM TEST - 2019

SUBJECT - **Science II**

School :

Name of the Student/ Index No :

Time : 02 hrs.

Instructions -

- Write your answers in neat hand writing.
- Answer **Four** questions in part A in the space provided.
- Answer only **03** question from part B from question No. 5 to 9
- After answering, tie part A and the answer script of part B together and hand over.

Part - A

1)

A.

- i. Organisms fulfill their requirements with the help of movement. Most of them possess organs for locomotion.

Fill in the blanks in the table considering the locomotory organs of organisms.

(2 marks)

Group of organism	Organ used to locomotion
Unicellular organism	(a)
Multi cellular organism	(b)

- ii. Different cells are organized in plant body to carryout relevant functions.

Complete the table below, using one cell type in the different organs of the plant body.

Organ of the plant	Types of cells present
Root	(a)
Stem	(b)
leaves	(c)

- B. Sodium is an element belonging to Group I of the periodic table.

- i. State one physical and one chemical property of Sodium

(02 m)

a) Physical property

b) Chemical property

- ii. Why is sodium stored in paraffin?

(01 m)

.....

- iii. Write the balanced chemical equation for the reaction between sodium and oxygen

(01 m)

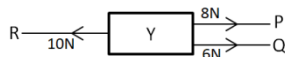
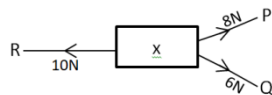
.....

- iv. Sodium does not react with Neon. Why?

(01 m)

.....

C.



As shown in the following figures, P,Q,R,S forces are applied on x and y bodies and the x body remains in equilibrium.

- i. What is the magnitude and the direction of the resultant of P and Q forces applied on x? (01 m)

Magnitude -

Direction -

- ii. Does Y remain in equilibrium?..... (01 m)

Give reason for your answer.....

.....

(02 m)

2)

A. A group of students prepared three cards for an assignment as shown below.

P	Q	R
<u>Kingdom Animalia</u> Vertebrates Invertebrates - Pices - Amphibia - a - Aves - Mammalia - Cridaria - Annelida - b - Arthropoda - Echinodermata	<u>Features of animals</u> K – respiration is done by gills L – possess dry scaly skin M – Scales are restricted only to hind limbs N – Possess nematoblasts O – Possess muscular feet	- shark - Prawn - Iguana - peacock - snail - sea anemone - leach - chimpanzee

- i. State “a” and “b” animal groups on P card (01 m)

a..... b

- ii. Write a feature mentioned on Q card relevant to “a” animal group (01 m)

.....

- iii. Select and write one feature from Q card and one example from R card suits to Aves group. (02 m)

Q..... R.....

- iv. Fill in the blanks in the table using data from PQ and R cards. (02 m)

P	Q	R
.....	Possess nematoblasts	
Pisces		

B. Some features of plants are given below.

- Two cotyledons in the seed
- Possess seeds that are not covered by a fruit.
- Exist as talus and no roots, stem or leaves
- Possess a fibrous root system

- i. Write two letters that represent characteristics of non – flowering plants. (02 m)

.....

- ii. What is the specific name given for the plant group with “b” feature? (01 m)

.....

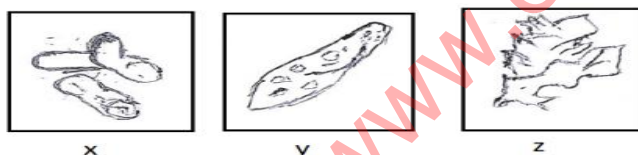
- iii. Name the plant group with “a” feature and give one example for the relevant plant group you mentioned. (01 m)

Plant group- Example -

- iv. Write the English letter that shows features common for Marchantia, Nephrolepis and Selaginella.

.....(01 m)

C. Given below are three organisms belong to a certain Domain and Kingdom



- i. Write letters of organisms belong to domain bacteria and kingdom protista.

Domain bacteria - Kingdom protista-(02 m)

- ii. State an autotrophic organism out of the above organisms mentioned in the figures (01 m)

.....

3)

A.

- i. Following is an incomplete table regarding a chemistry assignment. Complete it.(H=1, C=12, N=14, O=16, Na=23, S=32) (5 marks)

Name of compound	Molecular formula	Weighted mass (g)	Number of molecules present
Sulfuric acid	(a).....	98g	(b).....
(c).....	CO(NH ₂) ₂	30g	(d).....
Caustic soda	NaOH	(e).....	$1.5 \times 6.022 \times 10^{23}$

B.

- i. Define relative atomic mass of an element. (02 m)

.....

.....

- ii. What is the term used to express, when the relative atomic mass of any element is taken in grams.

.....(01 m)

- iii. How many atoms are there in the amount you mentioned above? (01 m)

.....

C. The following relationship can be used to find the amount of any given substance or number of moles.

$$n = \frac{m}{M}$$

- i. Define n , m and M in the equation given above. (03 m)

n

m

M

- ii. Calculate number of molecules in 150 g of CaCO_3 (03 m)
($c = 12, O = 16, Ca = 40$)(Avogadro constant -6.022×10^{23})

.....

.....

.....

4)

A. A wooden block of mass “ m ” is on a rough surface.



- i. Express the weight of the block using the given symbols. (Gravitational acceleration is g .)

.....(01 m)

- ii. Though a force F is applied on it, the block doesn't move. Which law of Newton best explains this?

.....(01 m)

- iii. When the force “ F ” is gradually increased, the block begins to move with an acceleration “ a ”. Show the relationship between “ F ” and “ a ” using an equation. (01 m)

.....

- iv. If the mass of the block is 800g and a 4N force causes it to move, find its acceleration. (03 m)

.....

.....

.....

B. Nimal collided with a wall and fell down when he was running towards his classroom.

- i. What exerted the force that caused Nimal to fall? (01 m)

.....

- ii. Which law of Newton explains this? (01 m)

.....

iii. Write down the relevant law.

(01 m)

.....

.....

C. You are supplied with a 2kg metal ball named as 'x' and another 5kg metal ball named 'Y'.

i. Calculate the velocity of 'x' if you roll it along the floor with initial momentum of 10kgms^{-2} (02 m)

.....

.....

.....

ii. If you roll the ball 'Y' with the same velocity, will the momentum be equal to the previous ball? (01 m)

.....

iii. State the reason for your answer.

(01 m)

.....

iv. The ball 'x' moves and comes to rest. What is the momentum at that instance?

(01 m)

.....

Part - B

• Answer only 3 questions out of question no 5,6,7,8, and 9.

5)

A. Amal who stays in a hostel said to his mother that his breakfast always includes dry fish, coconut sambol and rice.

i. Name the main nutrients present in dry fish and coconut sambol respectively. (02 m)

ii. A piece of dry fish is heated well using a crucible and the final black coloured residue obtained is rubbed against a white paper. Then lines drawn of coal are observed. What can be confirmed by the above observation? (01 m)

iii. Two third ($\frac{2}{3}$) of the body weight of most of organisms is consist of water. Write 02 uses of water that help for the existence of life. (02 m)

iv. Write two main steps of starch test and mention the observation of the test. (02 m)

B. The structural and functional unit of life is cell. The organism is composed of a single cell or many cells.

i. Define "typical cell" (02 m)

ii. How do you prepare a glass slide to observe onion peel cells through a compound microscope after keeping the specimen on a glass slide with a water drop? (01 m)

iii. Draw a rough diagram of onion peel cells which you observed through compound microscope. (02 m)

C. The cells multiply by cell division. The cell division takes place in 2 methods, as mitosis and meiosis. Mitosis takes place in somatic cells and there are adverse effects of mitosis.

i. Write two importances of mitosis and mention one adverse affect of mitosis. (03 m)

ii. What is the importance of meiosis that helps for existence? (01 m)

iii. Nucleic acids are the main components of nucleus in the cells. Name two forms of nucleic acids (02 m)

iv. State how mitosis occurs in a cell with 46 chromosomes using a diagram. (02 m)

6)

- A. Some information about some elements are tabulated as shown below. The English letters used to represent the elements are not the standard symbols. Use the English letters given in the table when answering the questions.

Atom of the element	Number of electrons in outer energy level	Number of energy levels	Number of neutrons in the nucleus
K	1	2	4
L	2	3	12
M	7	3	18
N	3	3	14
O	7	3	20

- i. Write the electronic configuration of L (01 m)
 ii. Complete the table given below (04 m)

Element	Period	Group	Mass number
K			
L			
M			

- iii. State the isotopes of the above. (01 m)
 iv. Illustrate N atom in the standard way. (02 m)
 B. K L M N O P illustrate few terms used in chemistry.

- K – mass of an atom
- M – relative molecular mass weighed out in grams
- N - 6.022×10^{23} atoms
- P – relative atomic mass
- L - $\frac{1}{12}$ the mass of $^{12}_6\text{C}$ isotope
- O - mole

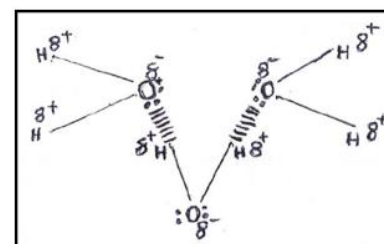
The relationship between the above terms is illustrated in question number (i), (ii), (iii).

Fill (a), (b), (c), (d) blanks using the suitable terms given above.

- i. $(a) = \frac{(b)}{L}$
 ii. $m = (c)$
 iii. $Ca\ 40g = (d) = N$ (4 m)

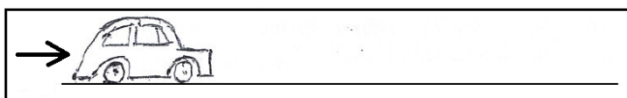
- C. The following diagram shows attractions between water molecules.

- i. How many water molecules are participated to form the structure shown in the diagram? (01 m)
 ii. What is the term that describes attractions between molecules? (02 m)
 iii. Briefly explain the way of formation of bonds between water molecules. (03 m)
 iv. Write 02 properties possessed by water due attractive forces among the water molecules. (02 m)



7)

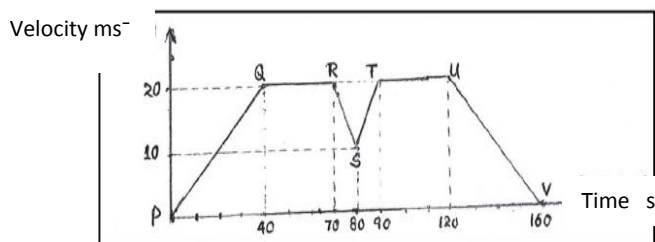
- A.



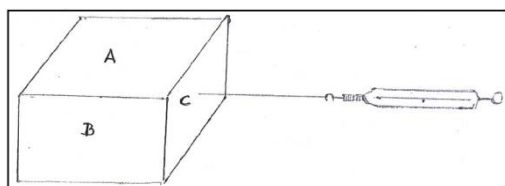
A toy car is moved along a straight line at a uniform velocity of 4ms^{-1} for 4S

- i. Define velocity. (02 m)
 ii. What is the displacement of the toy car during the journey? (02 m)
 iii. Plot the velocity – time graph for the motion of the toy car. (03 m)
 iv. How do you find the displacement of the toy car using the graph? (02 m)

- B. The variation of the velocity of a motor vehicle that travelled along a straight line is shown in the graph below.



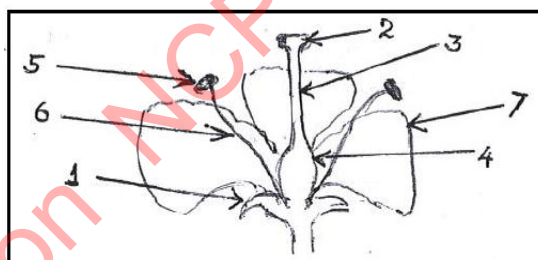
- Explain the motion showed by P – Q, R – S and T - U (03 m)
 - While the vehicle is moving, an animal ran across the road. Which time interval on the graph shows this incident? (02 m)
 - Calculate the acceleration of the vehicle after the animal ran away. (03 m)
- C. A wooden block is pulled by a spring balance as shown below. The reading of spring balance when the block just begins to move is 10N.



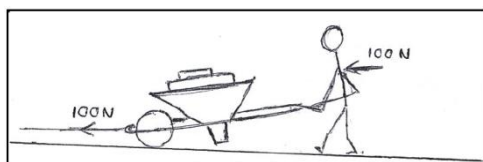
- If the spring balance is joined to side “A” and pulled to the same direction, will the reading of spring balance be greater than, less than or equal to 10N? (02 m)
- Give reasons for your answer. (02 m)

8)

- A. The sexual organ of the plants is flower. A longitudinal section of a typical flower is given below.

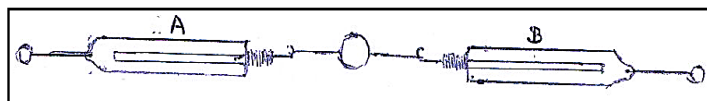


- Name the parts indicated from 1 to 7 (04 m)
 - Four principal parts of a flower are arranged in whorls on the receptacle. Name those four parts of a flower. (04 m)
 - Write two adaptations of flowers to avoid self pollination and promote cross pollination to mix characteristics of two plants. (02 m)
- B. A loaded wheel barrow is moved by applying 100N force as shown below in the diagram. Another 100N force is applied on the wheel barrow in the same direction.



- What is the resultant force act on the wheel barrow? (01 m)
- What is the “term” used to express the single force acting in place of two forces? (02 m)
- Suggest a method that can be used to increase the speed of wheel barrow except changing force on it. (02 m)

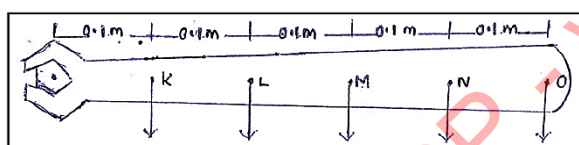
- C. Given below is a diagram of a ring pulling with two balances in opposite directions and the ring stays at rest. The reading of B spring balance is 3N



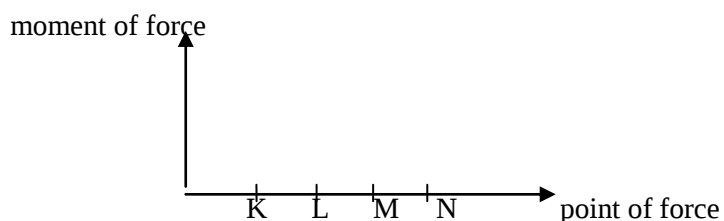
- What is the reading of "A" spring balance? (01 m)
- Why does the ring stay at rest? (02 m)
- Write 03 conditions must be –satisfied to maintain equilibrium of an object under the action of three parallel forces. (03 m)

9)

- A. Chemical compounds are classified according to their nature of bonds. Compounds with ionic bonds are known as ionic compounds. Compounds with covalent bonds are known as covalent compound. Given below are some examples for chemical compounds. $Li_2O, CH_4, HCl, CaO, H_2O, KF$
- Group the above chemical compounds as ionic or covalent. (04 m)
 - Write down how ions are formed when bonding, using any one of the ionic compound you mentioned above. (02 m)
 - How do electrons behave when forming covalent bonds? (01 m)
 - Draw the dot and cross diagram of one molecule you classified as covalent in above (i) (01 m)
- B. Though relative molecular mass does not have units, there is a unit for molar mass of any substance. Explain.
- C. Figure given below shows the forces applied on a key to detach a nut. 10N force is applied at the points K, L, M, N and O respectively. The nail rotates due to moment of force.



- What is the unit of moment of a force? (01 m)
- Calculate moment due to the 10N force at K, L, M, N and O points. Then sketch a graph using the axis given below. (03 m)



- Which factor is investigated that depends on moment by the above graph? (02 m)
- Write 02 applications where the couple of force defined as a vector quantity. (02 m)
- Why is force defined as a vector quantity? (01 m)



LOL.Lk
Learn Ordinary Level

විභාග ඉලක්ක පහසුවෙන් ජයගන්න පසුගිය විභාග ප්‍රශ්න පත්‍ර



- Past Papers
 - Model Papers
 - Resource Books
- for G.C.E O/L and A/L Exams



විභාග ඉලක්ක ජයගන්න
Knowledge Bank



Master Guide

WWW.LOL.LK



**CASH
ON**

DELIVERY



Whatsapp contact
+94 71 777 4440

Website
www.lol.lk



**Order via
WhatsApp**

071 777 4440