

Science

Grade 10 - Answers

Paper I

1	I	11	II	21	IV	31	I
2	III	12	II	22	I	32	IV
3	IV	13	I	23	III	33	III
4	I	14	I	24	I	34	II
5	I	15	III	25	II	35	IV
6	II	16	IV	26	III	36	IV
7	IV	17	II	27	II	37	III
8	III	18	I	28	III	38	II
9	III	19	III	29	II	39	IV
10	I	20	II	30	IV	40	II

Paper II Part A

01. (A) I (a) Cashew nut (01)

(b) C , H , O (01)

II (a) Riper banana (01)

(b) Benadict test (01)

III Athropoda (01)

IV Possed jointed limbs , chitinous cuticles on the body other suitable aswer. (01)

(B) (a) I Spring balance (01)

II $1.5 \text{ kg} \times 10 \text{ ms}^{-2} = 15 \text{ N}$ (01)

III $15 \times 0.4 = 6 \text{ Nm}$ (01)

(b) $P = 10 \text{ N}$ $Q = 5 \text{ N}$ (02)

(C) I 2 S (01)

II Non bonding long pair electrons in the valence shell of a atom in a covalent compound (01)

III (a) Gas (01) (b) does not conduct (01) (Total marks15)

02. (A) I Carl woese (01)

- II (a) Picariotes (c) Fungi
 (b) Bacteria (d) Plantae (02)
- III The seeds of these plants are not covered by a fruits (01)
- IV Marcantia (01)
- V (a) Sesbenia / Papaw / passion fruit / Lebbek /Tridax
 (b) Papaw (c) Lebbek(Pinna) (d) Passion fruit (02)
- VI Animals (01)
- VII Helps to give rise to a strong new generation with new characteristics (01)

(B)

- I. To show absorption of oxygen in respiration (01)
- II. Absorption of CO₂ in set up A (01)
- III. NaOH (01)
- IV. Reduce the pressure because of O₂ is used for respiration and CO₂ is absorbed by KOH in set up A (01)
- V. P - rubber tube Q -germinating seeds R - air proof cork
 S - Flask (02) (15 Marks)

03. (A)

- I. C and D (01)
- II. Coal / soot (01)
- III. $E + e \longrightarrow E^-$ (01)
- IV. Float on water with emitting "Shoo" sound / burning (01)
- V. Red Litmus turned to blue colour / no changing colour of blue litmus paper (01)
- VI. C and E (01)
- VII.
$$\begin{array}{c} \text{H} \\ | \\ \text{H}-\text{A}-\text{H} \\ | \\ \text{H} \end{array}$$
 (02)

(B)

- I. C₆H₁₂O₆ (01)
- II. Benedict Test (01)
- III. 180 (01)
- IV. $270 \text{ g} / 180 \text{ g mol}^{-1} = 1.5 \text{ mol}$ (02)
- V. 6.022×10^{23} molecules (01) (15 Marks)

04. (A)

- I. 20 ms⁻¹ (01)
- II. $150 \times 20 = 3000 \text{ m}$ (02)
- III. $50\,000 \times 20 = 100\,000 \text{ kgms}^{-2}$ (02)

- IV. From 150 seconds to 250 seconds (01)
 V. $(0 - 20)\text{ms}^{-1} / 100 = 0.2 \text{ ms}^{-2}$ (02)

(B)

- I. Increase the normal reaction force (01)
 II. Reading of the Newton balance when the block of wood is just begins to move (02)
 III. Normal reaction is effect for limiting frictional force (02)
 IV. Nature of the contact surface (01)
 V. Limiting state (01) (15 Marks)

Part B

05 (A)

- I. Schwaan , Schleiden and Radolf vircoch (01)
 II. The structural and functional unit of life is the cell.All organisms are made up of one or more cells. (02)
 III. Cheek cells / blood cells (01)

(B)

- I. A - Secretion function B Control of life activities of the cell C Producing energy (03)
 II. Cell wall / ch;oroplasis / large central vacuole (01)
 III. Meiosis , Mitosis (02)
 IV. Meiosis (01)
 V. Cell which equal number of chromosomes to mother cell (01)
 VI. Mirosis (01)

(C)

- I. A - Piscase b a feature of Reptillia
 c A feature of Mammalia d Aves (01 × 4)

II.

	Monocotyledonae	Dicotoledonae
Root	Fibrous root system	tap root system
Stem	unbranched	branched
Leaves	parallel venation	reticulate venation (01 × 3)

(Total marks 20)

06 (A)

- I. The minimum energy that should be supplied to an atom in the gaseous state to remove an electroe to form a unipositive gaseous (02)
 II. kJmol^{-1} (01)

III. Value of the first ionization energy decrease from top to bottom of the graph (01)

IV. D = F , E = Ne , F = Na , G = Mg (02)

V. F and g (01)

(B)

I. Sulphur – Yellow colour / brittle solid / conductor of heat and electricity

Sodium – Soft metal / density is less than water (02)

II. Burn with a blue flame / emitting a gas with bad smell (01)

(C)

I. Covalent bond (01)

II. Melting point and boiling point are low. not consist of ions (relevant answer (02)

III. High boiling point ,high specific heat capacity, higher density than that of ice (02)

(D)

I. Correct diagram (02)

II. Sugar solution – do not conduct electricity bulb does not light

Salt solution - Conduct electricity bulb light (02)

III. Salt (01)

(Total Marks 20)

07 (A)

I. Open the gate – release the rope Close the gate - pull the rope toward / down (02)

II. 400 N (01)

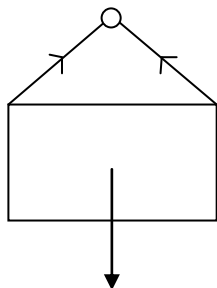
III. $400 \text{ N} \times 0.5 \text{ m} = 200 \text{ Nm}$ (02)

IV. $200 \text{ Nm} = 10 \times F$ $F = 200 / 10 = 20 \text{ N}$ (02)

V. A instance where increase the moment of force (01)

(B)

I. (02)



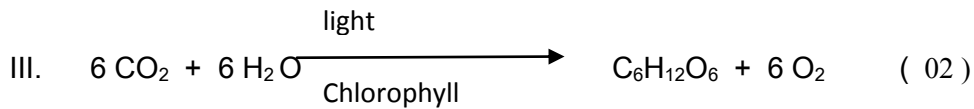
- II. Equilibrium of body under three forces that are not parallel (01)
- III. Three forces must be coplanar / the lines of action of the three forces must meet of a common point (02)
- IV. A framed picture hanging on the wall (01)

(C)

- I. The couple of force (01)
- II. Clock wise (01)
- III. Water tap / steering wheel (02)
- IV. Moment of couple of forces = $8 \times 0.25 = 2 \text{ Nm}$ (02) (Total marks 20)

08. (A)

- I. cell (01)
- II. A group of cells modified to perform a specific function is called a tissue (02)

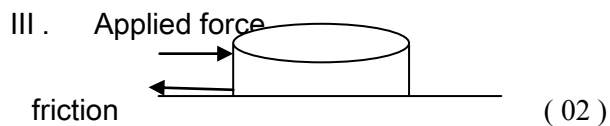


- IV. Algae / flowering plants / non flowering plants (01)

(B) I. $1. \begin{array}{ccccccc} & & & \longrightarrow & & & \longrightarrow \\ \longrightarrow & + & \longrightarrow & = & 300\text{N} & & \\ \longrightarrow & & \longrightarrow & & \longleftarrow & & \longrightarrow \end{array}$ $2. \begin{array}{ccc} \longrightarrow & + & \longleftarrow \\ \longrightarrow & & \longrightarrow \end{array} 100\text{N} + 500\text{N} = 600\text{N}$

$3. 75\text{N} + 80\text{N} - 60\text{N} = 95\text{N}$ $4. 100 - 100 = 0\text{N}$ (01 × 4)

- II. Newton's second law (02)



- IV. Applying power to reduce friction Increase the force applied (02)

- V. For correct answer (02)

V I Momentum = $2000 \times 10 = 20\,000 \text{ kgms}^{-1}$ (02)

(Total marks 20)

09. (A)

I. Measure the mass relatively $1/12^{\text{th}}$ mass of $^{12}_6\text{C}$ isotrope (01)

II. Relative atomic mass of N = $\frac{\text{mass of nitrojen atom}}{1/12 \times \text{mass of } ^{12}_6\text{C atom}}$ (02)

III. (a) For correct diagrafe (02) (b) 3 pairs (01)

IV. (a) for correct answer (01) (b) for correct answer (01)

V. $100 \text{ g} / 1 \text{ mol} \times 0.25 = 25 \text{ g}$ (02)

(B)

I. $F_1 + F_2 \uparrow = W \downarrow$ (02)

II. $W = \text{Weight of the child}$ $F_1 \quad F_2 = \text{tension of the rope}$ (02)

III. The three forces must be coplanar , One force must have a direction opposite to the other two forces. (02)

IV. (a) Resultant force is zero . (01)

(b) That side goes down because of unbalanced (01)

V. $A = 50 \text{ N}$ $B = 50 \text{ N}$ (02)

(Total marks 20)