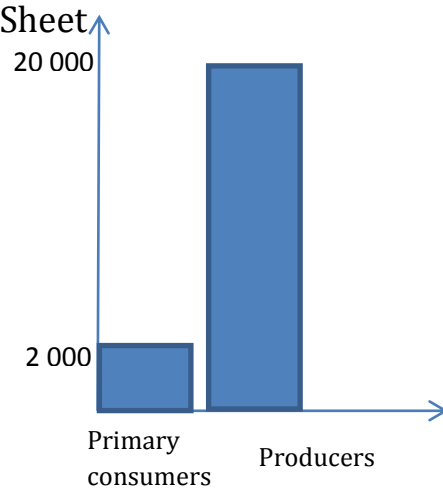
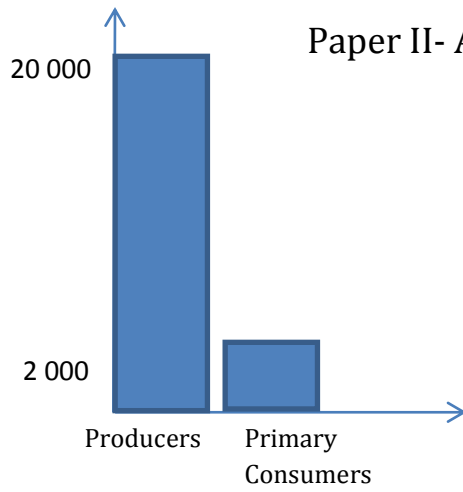


Paper II- Answer Sheet

1. (A) i).



For one of the above graphs

- 02

ii) $x = 200$ J **(Without the unit 01 mark)**

- 02

iii) Respiration / energy is spent on biological activities

- 01

iv) The balanced relationship between organisms and the physical environment

- 02

(B) i) a - burning of fossil fuel / respiration

b- decomposition in the marshy lands

c - cooling equipment/ by using aerosole sprayers

- 03

ii) Persist in the environment for a long time period

Accumulate in the body of organisms along food chains

Widely dispersed in the environment

Highly toxic

(For any two facts)

- 02

(C) i. reduce pests/ minimizing the formation of pests with high resistancy/
minimizing the spreading of diseases

- 01

ii. To successfully control the coconut caterpillar which was a major coconut pest

(*Promechotheca cumingi*) / using BTI bacteria to control dengue mosquitos

- 01

iii Use of orgarnic fertilizer/ Reforestation for environmental balance/ waste

Management/ carbon foot print and shortening the food milel using traditional
methods and technology

- 01

15

02. (A) i. carbon, hydrogen, oxygen, nitrogen **(For 03 or 04)**

- 01

ii. Enzymes

- 01

iii. Amylase/ Ptayalin

- 01

iv. (a) Cell wall/ chloroplasts/ A large vacuole **(for one)**

- 01

(b) Cell wall - to maintain the shape of the cell/ support and protection
of the cell

Larg vacuole - support / water balance

Chloroplasts- photosynthesis **(For one fact)**

- 01

v. (a) KOH / potassium hydroxide

- 01

(b) Absorbing carbon di oxide

- 01

(c) rising of the coloured water through the glass tube

- 01

(B) i. Muscle tissue

- 01

ii. Skeletal muscles/ Heart muscles/ smooth muscles

- 01

iii. Epithelial tissue

- 01

iv.

- Moisturizing/ Humidifying inhaled air

- Warming up of inhaled air up to body temperature

- Removal of foreign matter from inhaled air **(For 2 facts)**

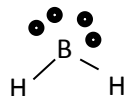
- 02

- v. (a) Ultra filtration/ selective reabsorption/ secretion - 01
 (b) Urea/ Uric acid/ kreatin - 01

15

03. (A) i. (a) A - 01
 (b) 2, 5 - 01
 ii. D - 01
 iii. D₂B - 01

- iv. (a) covalent - 01
 (b) - 02



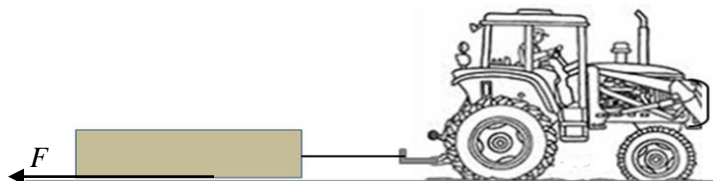
- v. (Electron distribution is not symmetrical in the bond of the molecule so polarization occurs)
 Because of polarization intermolecular bonds are formed. Due to intermolecular bonds high boiling point and high specific heat capacity occur - 03

- vi. ${}^1_1\text{H}$, ${}^2_1\text{H}$, ${}^3_1\text{H}$ - 02

- (B) i. x, z - 01
 ii. (a) In test tube 'X' - 01
 (b) When the temperature is high/ low solubility of sugar is high/ low - 01

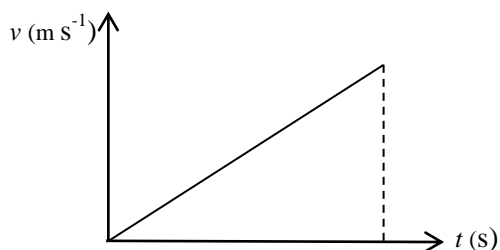
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4. (A) i. The acceleration of a body is directly proportional to the unbalanced force acting on it, while it is inversely proportional to its mass - 01
 ii. For marking the force (F) - 01



- iii. 4 000 N - 01
 iv. 1 200 N - 01
 v. $F = ma$ $1\,560\text{ N} - 1\,500\text{ N} = 400\text{ kg} \times a$ - 01
 $a = 60/400\text{ m s}^{-2}$
 $= 0.15\text{ m s}^{-2}$ **(without unit -00)** - 01

- (B) i. **(For the graph)** - 01



- ii. Acceleration = $\frac{\text{Change of velocity}}{\text{Time}}$
 $0.15 = (v - 0) / 20\text{ s}$ for applying - 01
 $v = 3\text{ m s}^{-1}$ **(with unit)** - 01
 iii. Difference in displacement = $20\text{ s} \times 3\text{ m s}^{-1} = 60\text{ m}$ - 01

- (C) i. Quantity of heat = $\frac{200}{1000} \times 4200 \text{ J kg}^{-1} \text{ }^{\circ}\text{C}^{-1} \times (100 \text{ }^{\circ}\text{C} - 30 \text{ }^{\circ}\text{C})$ - 01
= 58 800 J - 01
- ii. Water changes its state from water (liquid) to water vapour at that point - 01
- iii. Power of the thermal coil = $58\,800 \text{ J} / 2 \times 60 \text{ s}$ - 01
= 490 W - 01

15

5. (A) i. Plantae - 01
ii. Dicotyledonae (Dicots) - 01
iii. Cycas/ Pinus - 01
iv. Amphibians - 01
- (B) i. anther, filament - 02
ii. (a) Ovary (b) Uterus - 02
iii. Progesterone - 01
iv. (a) The combination of a gene pair for a particular character - 02
(b) The genes that present in the same chromosome which are not segregated Independently - 02
- C) i. (a) absorbing water - 01
(b) production of bile/ converting excess glucose to glycogen - 01
ii. Ptyalin/ salivary amylase
iii. Diastole/ Atrial contraction - 01
Systole/ Ventricular contraction - 01
iv. X – Sensory Neuron - 01
y – motor Neuron Brain(in cranial reflexes) - 01

20

- 06 (A) i. Colour change/ Blue colour solution becomes colourless - 01
ii.
 - Take equal volume of copper sulphate with equal concentration to two equal test tubes
 - Take equal amount of Mg in the same physical condition and put in to the two test tubes separately
 - Keep one test tube in a beaker with 0°C water and the other test tube in a beaker with 100°C water at the same time and observe - 03
iii. $\text{CuSO}_4(\text{aq}) + \text{Mg}(\text{s}) \longrightarrow \text{MgSO}_4(\text{aq}) + \text{Cu}(\text{s})$ - 03
(for the correct equation - 02 for the correct physical states - 01)
iv. Single displacement - 01
- (B) i. Mass of an atomic mole of Magnesium = 24g - 02

ii. Mass of an atom of Mg = $24 / 6 \times 10^{23} = 4 \times 10^{-23} \text{ g}$ - 02

iii. Number of atomic moles = $\text{Mass} / \text{Molar Mass} = \frac{6\text{g}}{24 \text{ g mol}^{-1}}$ - 01
= 0.25 mol - 02

iv. $C = \frac{m}{vM}$

$m = CvM$ - 01

= $\frac{0.1 \text{ mol dm}^{-3} \times 100 \text{ dm}^{-3} \times 249.5 \text{ mol}^{-1}}{1000}$ - 01

= 2.495 g

= 2.5 g - **(01 mark)**

- 03

20

7. (A) i. $100\text{ N} + 100\text{ N} = 200\text{ N}$ - 01
 ii. To decrease the amount of force applied by a single person
 To change the direction of force - 02
 iii. (a). In Equilibrium / balanced - 01
 (b).
 • The three forces must be coplanar
 • The resultant of any two of the forces should be equal to the third force
 in magnitude and opposite in direction - 02
 iv. (a). $\frac{50}{100} \times 200\text{ N} = 100\text{ Nm}$ - 02
 (b). Clockwise - 01
 v. (a). $50\text{ N} - (15 + 15\text{ N}) = 20\text{ N}$ - 02
 (b). $P = \pi + h d g / \pi + h p g$ - 01
 (c). $P = 4\text{ m} \times 1000\text{ kg m}^{-3} \times 10\text{ ms}^{-1} = 40000\text{ N m}^{-2}$ - 02

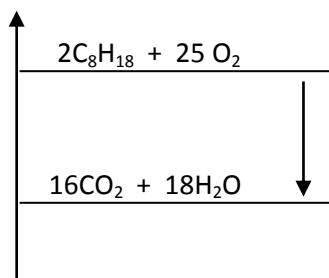
- (B) i. (a) centre of curvature
 (b) focal point
 (c) pole - 03
 ii. upright/ virtual/ large (Magnification more than 01) - 01
 iii. By dental doctors to examine teeth of patients/ to see the face when shaving
 the beard - 02

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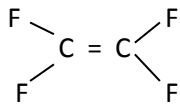
08. (A) i. Natural classification - 01
 ii. (a) Archaea - 01
 (b) polar ice caps/ volcanoes/ ocean beds/ deep inside the earth/
 hot water spring - 02
 iii. Amphibians, Pisces, Arthropoda, Mollusca - 02
 iv. (a) x - paramecium y - chlamidomonas z - Amoeba - 03
 (b) Hydrilla/ Keketiya/ valisnaria - 01
 (B) i. (a) Ultra sound waves - 01
 (b) To mix xhoxolate/ to scan internal organs of the human body/ to detect
 fine fractures in boilers, air planes/ to find the depth of the sea/
 to solder metals - 02
 ii. Real depth - 14 N Apparent depth - 4 N - 02
 iii. Density of lead is more relative to the density of water. Density of Styrofoam
 is less relative to the density of water. Therefore lead balls sink in water
 Styrofoam balls float in water - 02
 iv. (a) Increases - 01
 (b) Optical fibres/ cutting of gems/ optical telephone wires/ In binoculars - 02

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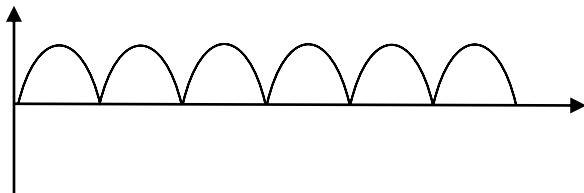
09. (A) i. Fractional distillation - 02
 ii. Exothermic - 01
 iii. - 02



- (B) i. Ethene - 02
ii. Ethane - no double bonds, Ethene - has double bonds - 02
iii. - 02



- (C) i. Rectifying diodes - 02
ii. d, b - 02
iii. Indicator deflects in the same direction - 02
iv. - 03



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