5.6 GENERAL SCIENCE (237)

5.6.1 General Science Paper 1 (237/1)

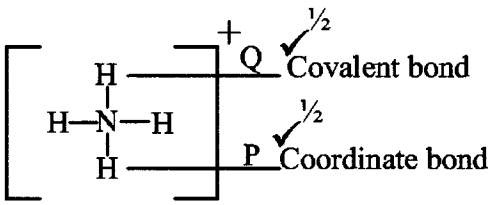
SECTION A – BIOLOGY

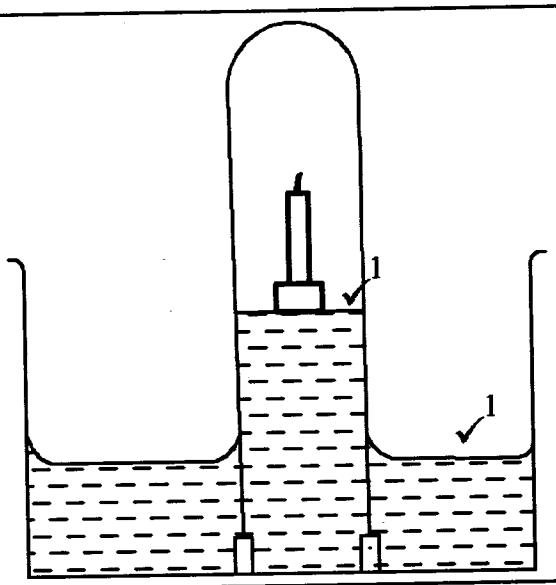
1.	Zoology; **RJ wrong spelling.**	(1 mark)
2.	• Production of fermented dairy products e.g. yoghurt; • Production of alcoholic beverages; • Production of leavened bread; • Fermented porridge;	(2 marks)
3. (i)	Diffusion – process by which particles/molecules move from a region of high concentration to a region of low concentration;	(1 mark)
(ii)	Active transport – process by which particles move from a region of low concentration to a region of high concentration with the use/expenditure of energy;	(1 mark)
(b)	By cells becoming turgid/turgidity;	(1 mark)
4. (a)	Eye piece; Acc eye piece lens.	(1 mark)
(b)	Concentrates/converge/condense light onto the specimen;	(1 mark)
(c)	• Nucleus; • Cytoplasm; • Cell membrane;	(2 marks)
5. (a)	Elimination of waste product of metabolism from the body of a living organism through an excretory organ;	(1 mark)
(b)	• Removes toxic/harmful substances from the body; • For osmoregulation; **Acc. Water and salt balance**	(2 marks)
6. (a)	Mammalia;	(2 marks)
(b)	Panthera;	
7.	Root hairs are surrounded by a film of water in the soil; the cell sap of the root hairs contains salts and sugars, hence is more concentrated/ hypertonic; Water is drawn into the root hairs by osmosis; across the semi-permeable membrane of the root hair cells;	(3 marks)
8. (a)	• Amoeba; • Paramecium; • Euglena; • Plasmodium. • Spirogyra; • Chlamydomonas; **(Any two) RJ wrong spelling.**	(2 marks)
(b)	• Excessive intake of alcohol; • Infection by liver parasites/bacteria/ virus;	(2 marks)

9.(a)	- Assist in cutting grass; - Turning/manipulation of grass;	(2 marks)
(b)	Piercing/tearing/griping;	(1 mark)
10. (a)	• Enables cells/tissues get oxygen for respiration; • Elimination of carbon (IV) oxide gas;	(2 marks)
(b)	Stomata/Stoma;	(1 mark)
11. (a)	Regulates the rate of metabolic processes (slow/accelerate/speed the rate);	(1 mark)
(b)	A man needs more energy than a woman; a man has more muscles/is more muscular, hence needs for more energy for constant muscular contraction/ relaxation; **RJ Masculine**.	(2 marks)
12. (a)	Ventricles pump blood for longer distances; thus need thick muscles to withstand high pressure/generate high pressure.	(2 marks)
(b)	Blood clotting/stops bleeding;	(1 mark)

SECTION B - CHEMISTRY

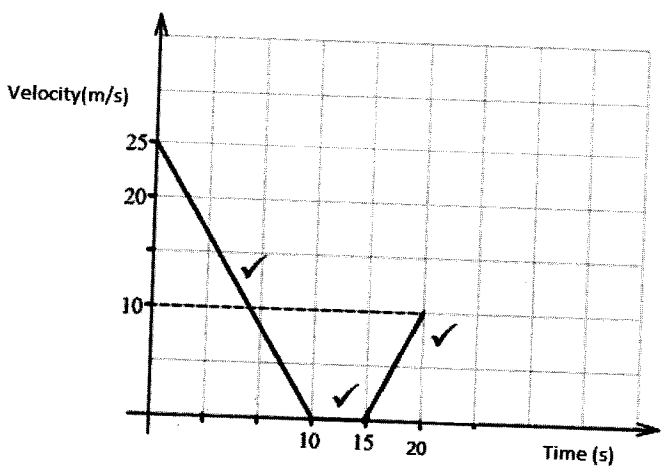
Qn No.	Responses	Marks
13.(a)	Neutral Substance	(1 mark)
(b)	(i) H (ii) G	(½ mark) (½ mark)
14.(a)	(i) Double decomposition/Precipitation (ii) Direct synthesis	(1 mark) (1 mark)
(b)	Softening hard water, manufacture of glass	(1 mark)
15.(a)	Solvent extraction	(1 mark) nm
(b)	(i) Deliquescent (ii) - Manufacture of glass -Making detergents -As a drying agent -Manufacture of papers **Any one @ 1 mark**	(1 mark)
16(a) (b) (c)	Permanent hardness Chloride ions, sulphate ions Ion exchange	(1 mark) (1 mark) (1 mark)
17(a)	Covalent bond is formed by equal contribution of the shared electrons by the atoms. Coordinate bond is formed when shared electrons are contributed by a single species of the atom.	(1 mark)

Qn No.	Responses	Marks
17 (b)		(2 marks)
18(a)	Liquid = Solid phase Temperature remain constant as Kinetic energy reduces, articles, form bonds with each other coming closer to form solids. Energy produced is used in bond formation/ substance is changing state	(2 marks)
(b)	Solid	(1 mark)
19(a)	Noble gases	(1 mark)
(b)	(i) Atomic Radius Increases downthe group due to increase in the number of energy levels. (ii) Melting point decreases down the group, the forces of attraction between atoms weakens hence decrease in melting point.	(1 mark)
20 (a)	Is a substance when in solution/melt conducts and decomposes by passage of an electric current.	(1 mark)
(b)	Mercury contains delocalized electrons (free electrons) which conduct electricity while Lead (II) bromide in molten state contains IONS (Pb^{2+}, Br) which conduct electricity.	(1 mark) (1 mark)
21 (a)	Electrons Protons Neutrons **Maximum 1 mark : two correct and above**	(½ mark) (½ mark) (½ mark)
(b)	(i) Period 2 (ii) R_2M (iii)Neutral oxide	(1 mark) (1 mark) (1 mark)
22.(a)	III	(1 mark)
(b)	Denser than air	(1 mark)
(c)	Over – water method	(1 mark)

Qn No.	Responses	Marks
23.(a)		(2 marks)
(b)	To absorb Carbon (IV) oxide produced after combustion.	(1 mark)

SECTION C – PHYSICS

24.	$p = \frac{m}{v}$ ✓ $= \frac{10}{10}$ ✓ $= 1\ gcm^3$ ✓	(3 marks)
25.	Adhesion between the water molecules and the glass surface is ***higher*** ✓ ***than*** the cohesion between the water molecules ✓ hence the water spreads. OR ***cohesion is lower than adhesion.***	(2 marks)
26.	$P = \rho hg$ ✓ $= 13600 \times 0.15 \times 10$ ✓ $= 20,400\ Pa$ ✓ (N/m^2)	(3 marks)
27.	The dust particles are bombarded/knocked/hit by invisible air ✓ molecules which are in constant ✓ random motion.	(2 marks)
28.	- Conduction ✓ - Convection ✓ - Radiation ✓	(3 marks)
29.	- It wets/sticks on glass ✓ - It has a low range of temperature ✓/high freezing and low boiling point. - It expands unusually/ doesn't expand uniformly/anomalous expansion - It is a poor conductor of heat - Not visible **(any 2)**	(2 marks)

30.	Sum of clockwise moment= sum of anticlockwise moment $F_1d_1 = f_2d_2$ $50 \times y = 75(1-y)$ ✓ $50\,y = 75 - 75\,y$ ✓ $y = \frac{75}{125}$ ✓ $= 0.6m$	(3 marks)
31.	The stone becomes less stable ✓ since the center of gravity shifts to the left/ unshaded part ✓	(2 marks)
32.	The mass (force) stretched the spring beyond its elastic limit./elastic limit exceeded/break point ✓	(2 marks)
33.		
34.	- Frictional force between marble and floor/Nature of the floor. - Initial speed of the marble/initial force applied - Mass/weight of the marble. - Steepness **(any 2)**	(2 marks)
35.	✓ ✓ Kinetic energy → potential energy → kinetic energy → (sound/heat)	(2 marks)
36.	The weight of the water displaced/up thrust in both cases is the same, ✓ for the less dense (fresh water) ✓ more volume will be displaced. ✓	(3 marks)
37.	- Ensure proper storage of apparatus. ✓/to locate apparatus easily. - To minimize risk of accidents/injuries. ✓ - Minimize breakages. **(any 2)**	(2 marks)