

Science & Technology : Part - I

Practice Paper - II

Time : 2 Hours

Max. Marks : 40

Q. 1. (A) Solve the questions.

[5 Marks]

(1) Match the following.

	I		II
(a)	Mass	(1)	Zero at the centre
(b)	Weight	(2)	Measure of inertia
		(3)	Same on the entire universe
		(4)	Depends on the height

(2) Write the electronic configuration and valency (Calcium Ca)

(3) The substance in whose presence the rate of a chemical reaction changes without causing any chemical change to it is called

(4) Say True or False

In electric bulb tungsten metal is used for preparing wire.

(5) During transformation of liquid phase to solid phase the latent heat is

(B) Rewrite the statement by selecting suitable words from those given in bracket. [5 Marks]

(1) The boiling point of H₂O is

(a) 70°C (b) 100°C (c) 732°C (d) 220°C

(2) The satellite orbit whose height is between 2000 Km to 35780 Km above the earth's surface the orbits are called

(a) Lower orbit (b) High orbit (c) Medium orbit (d) none of above

(3) Which is the structural formula of ethanol from these given below.

(a) CH₃ - CH₂-Cl (b) CH₃-COOH
(c) CH₂-CH₂-OH (d) CH₃-NH₂

(4) The focal length of a convex lens is 20 cm. Then what will be the power of lens ?

(a) 5 D (b) 3 D
(c) 6 D (d) 2 D

(5) The amount of water vapour in air is determined in terms of

(a) dew point temperature (b) humidity
(c) heat (d) none of above

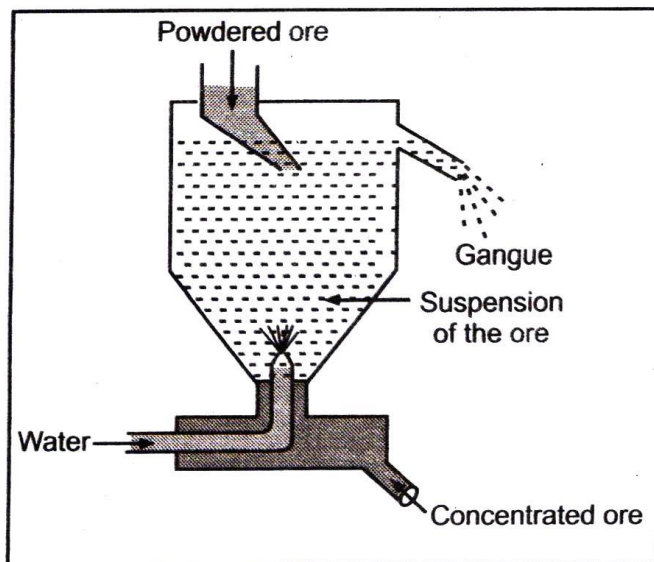
Q. 2. Solve the following questions. (Any Five)**[10 Marks]**

- (1) Mahendra and Virat are sitting 1m away from each other. Their masses are 75 Kg and 80 Kg respectively. Find the gravitation force between them.
- (2) State with reason whether the following statement is True or False.
A satellite needs a specific velocity to revolve in a specific orbit.
- (3) Write the IUPAC names of the following structural formulae.
 - (a) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{CH}_3$
 - (b) $\text{CH}_3 - \text{CHOH} - \text{CH}_3$
- (4) Give scientific reason.
Lemon or tamarind is used for cleaning copper vessels turned greenish.
- (5) Draw a neat labelled diagram of compound microscope.
- (6) 'Rocks crack and break into pieces due to the anomalous behaviour of water. Explain.
- (7) Write a short note as Dobernier's Triad.

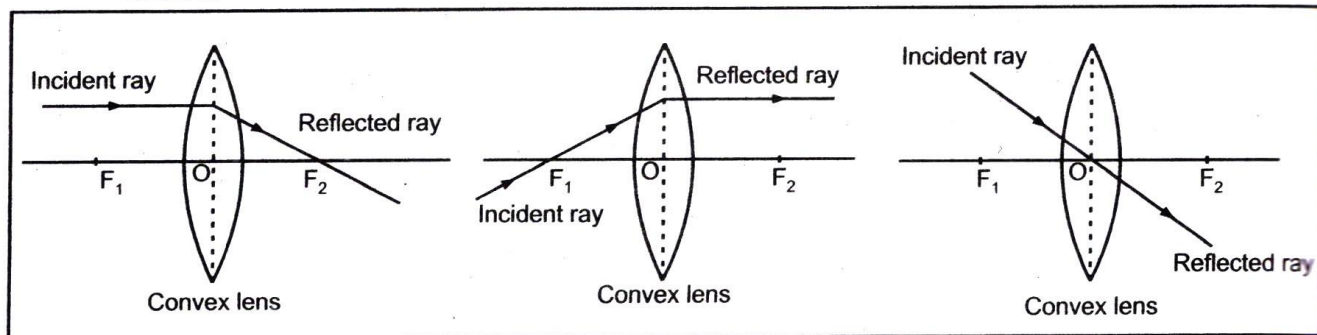
Q. 3. Solve the following (Any Five)**[15 Marks]**

- (1) The period of revolution of a planet at a distance R from a star is T. Prove that if the same planet is at a distance of 2 R from the star its period of revolution will be $\sqrt{8} T$
- (2) State the merits of Mendeleev's Periodic Table
- (3) What is the reaction called when the oxidation and reduction take place simultaneously? Explain with one example.
- (4) An electric iron uses a power of 1100W when set to higher temperature. If set to lower temperature it uses 330W power. Find out the electric current and the respective resistances for the two settings. The iron is connected to a potential difference of 220V
- (5) Identity the type of following chemical reaction of carbon compounds.
 - (a) $\text{CH}_3 - \text{CH}_2 - \text{CH}_2 - \text{OH} \rightarrow \text{CH}_3 - \text{CH}_2 - \text{COOH}$
 - (b) $\text{CH}_3 - \text{CH}_2 - \text{CH}_3 \rightarrow 3\text{CO}_2 + 4\text{H}_2\text{O}$
 - (c) $\text{CH}_3 - \text{CH}_2 - \text{Cl}_2 \rightarrow \text{CH}_3 - \text{CH}_2 - \text{Cl} + \text{HCl}$

(6) Draw a neat labelled diagram and answer the questions given below.



- (a) What for the hydraulic separation method is used ?
 (b) On which principle is it based ?
 (7) From the following three diagrams state the laws of images formed by convex lenses.



Q. 4. Solve the questions. (Any One)

[5 Marks]

- (1) State and explain the five methods used to prevent corrosion.
 (2) Answer the following questions
 (a) ${}_{3}\text{Li}$, ${}_{14}\text{Si}$, ${}_{2}\text{He}$, ${}_{11}\text{Na}$, ${}_{15}\text{P}$ which of these elements belong to the Period 3 ?
 (b) ${}_{4}\text{Be}$, ${}_{6}\text{C}$, ${}_{8}\text{O}$, ${}_{5}\text{B}$, ${}_{13}\text{Al}$ which is the most electropositive element among these ?
 (c) ${}_{19}\text{K}$, ${}_{3}\text{Li}$, ${}_{11}\text{Na}$, ${}_{4}\text{Be}$, which of these atoms has smallest atomic radius ?
 (d) ${}_{6}\text{C}$, ${}_{3}\text{Li}$, ${}_{9}\text{F}$, ${}_{7}\text{N}$, ${}_{8}\text{O}$ which of these elements has the highest nonmetallic character.
 (e) ${}_{1}\text{H}$, ${}_{7}\text{N}$, ${}_{20}\text{Ca}$, ${}_{16}\text{S}$, ${}_{4}\text{Be}$, ${}_{18}\text{Ar}$. Which of these elements belong to the Second Group ?

