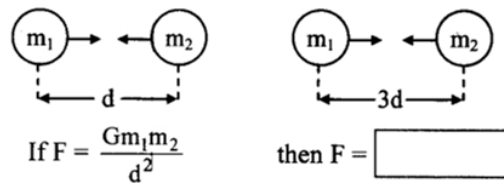


- ii. Rancidity is an oxidation process. [1]
- iii. The frequency of AC is 50 Hz. [1]
- iv. Torch : Concave lens :: Camera : _____ . [1]
- v. Write proper answer in the box: [1]



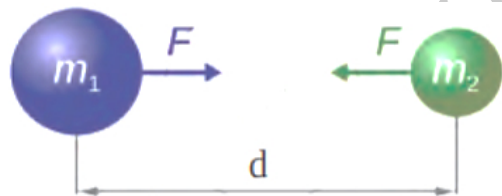
2. [10]

(a) Give scientific reasons. (Any 2)

- i. It is recommended to use airtight container for storing oil for long time. [2]
- ii. Elements belonging to the same group have the same valency. [2]
- iii. Tungsten metal is used to make a solenoid type coil in an electric bulb. [2]

(b) Answer the following questions. (Any 3)

- i. State any two uses of ethanol. [2]
- ii. Observe the figure and answer the questions: [2]

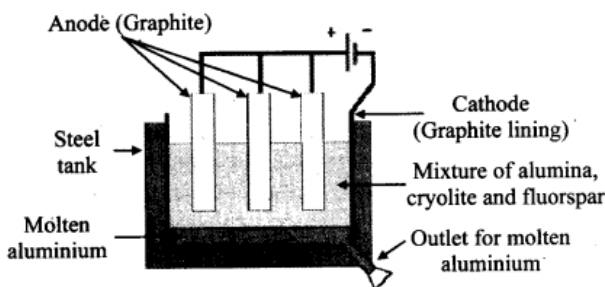


- i. State Newton's universal law of gravitation.
- ii. If the distance between the two bodies is tripled, how will the gravitational force between them change?
- iii. What will happen to gravitational force, if mass of one of the objects is doubled?
- iii. Give one function of each of the following satellites: [2]
 - i. Communication satellite
 - ii. Earth observation satellite
- iv. Draw the image formed by convex lens, if object is placed at $2F_1$. [2]
- v. If the speed of light in a medium is $1.5 \times 10^8 \text{ m/s}$, what is the absolute refractive index of the medium? [2]

(Speed of light in vacuum = $3 \times 10^8 \text{ m/s}$).

3. Answer the following questions. (Any 5) [15]

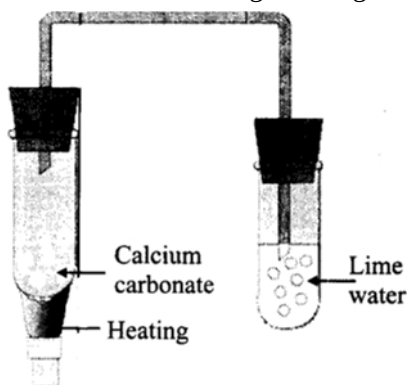
(a) Observe the following diagram and answer the questions: [3]



- i. Write the **anode reaction**.
- ii. Write the **cathode reaction**.

iii. What is the purpose of mixing **cryolite** and **fluorspar** with **alumina** in the electrolytic reduction of alumina?

(b) With reference to the given diagram answer the following questions: [3]



- Give type of chemical reaction.
- Give the names of reactants and products.
- Write down the balanced chemical equation.

(c) Two tungsten bulbs of power 50 W and 60 W work on 220 V potential difference. If they are connected in parallel, how much current will flow in the main conductor? [3]

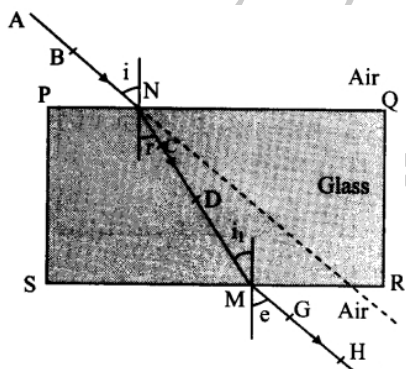
(d) Identify the process given below and accordingly draw neat labelled diagram: [3]

A molten mixture of alumina (melting point $> 2000^\circ C$) is done in a steel tank. The tank has a graphite lining on the inner side. The lining does the work of cathode. A set of graphite rods dipped in the molten electrolyte works as anode. Cryolite ($Na_3 AlF_6$) and fluorspar (CaF_2) are added in the mixture to lower its melting point up to $1000^\circ C$.

(e) Will the value of g be the same everywhere on the surface of the earth? Justify your answer. [3]

(f) To which group does the halogen family belong? Write any four halogens. [3]

(g) Observe the figure and name the ray AB, ray CD, ray GH: [3]



(h) What is an artificial satellite? Name any two types of artificial satellite and state their functions. [3]

4. Answer the following question. (Any 1) [5]

(a) State the general properties of ionic compounds. [5]

(b) Complete the following table: [5]

Sr . No.	Common Name	Structural Formula	IUPAC Name
i.	Ethylene	$CH_2 = CH_2$	_____
ii.	Acetylene	_____	Ethyne
iii.	Acetic acid	$CH_3 - COOH$	_____
iv.	Methyl alcohol	_____	Methanol

SATISH SCIENCE
ACADEMY