

SCIENCE 1 PRELIM: PAPER 1

Q.1 Multiple Choice Questions

(5)

- 1) The specific heat capacity of water is cal/g°C.
a. 10 b. 1.0 c. 0.5 d. 0.11
- 2) The temperature at which air becomes saturated with water vapor is called
a. dew point b. freezing point c. melting point d. boiling point
- 3) The frequency of direct current is Hz.
a. 0 b. 50 c. 100 d. 60
- 4) Which is a property of the gases in group 18.
a. malleability.
b. brittleness.
c. high electrical conductivity.
d. unlikely to react with other elements.
- 5) The power of Convex lens of focal length 20 cm is
a. +5.0 D b. 0.20 D c. -5.0 D d. 0.5 D



(B) Answer the following question

(5)

1) Find the odd one out.

Li, Ba, Na, K

2) Find co-related terms

Magnetic effect of electric current: Hans Oersted:: Electromagnetic induction:

3) Match the pair.

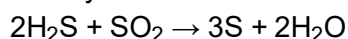
Column "A"	Column "B"
i. Elements with atomic number 19	a. Group 18
ii. Element Q in period 3 which has the highest electron affinity	b. Group 1
	c. Group 17
	d. Group 13

4) State true or false.

Bauxite reacts with sodium hydroxide in the Bayer process.

5) Name the following

Identify the reductants and oxidants in the following reactions.



Q.2 A) Give scientific reason. (Any two)

(4)

- 1) The outer surface of the beaker containing ice cubes becomes wet in a short while.
- 2) Situation : The pencil in water appears to be bent.

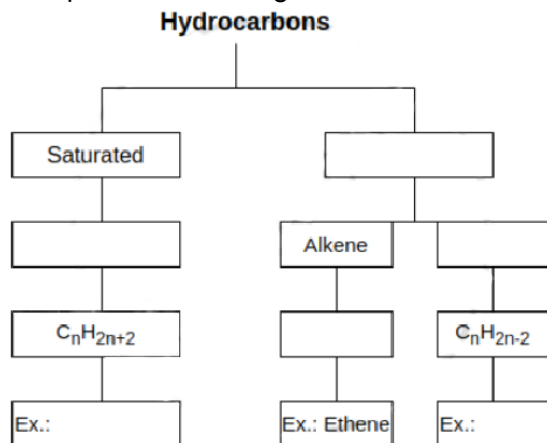
- i. How will the pencil appears if then is no water in the beaker. (1)
 ii. Give the reason. (1)

3) The weight of an object varies on different planets.

B) Answer the following questions. (Any three) (6)

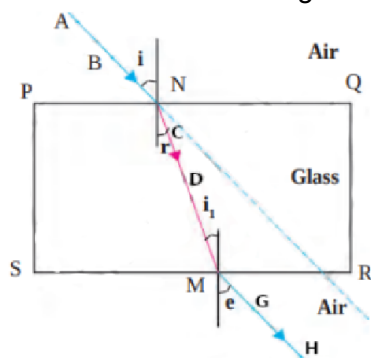
1) Explain Double displacement reaction with example.

Complete the following flow chart.



3) **Write Short Notes**

Short note on critical angle.



4) Give two examples of each (i) Natural macromolecules, (ii) Manmade macromolecules.

5) A person wears glasses of power -3.5 D. What is the type of the lens he wears? What is the far point of the person without glasses?

Q.3 Answer the following questions. (Any five) (15)

1) Complete the table :

Sr. No.	Common Name	Structural Formula	IUPAC Name
i.	Ethylene	$\text{CH}_2 = \text{CH}_2$
ii.	Acetylene	Ethyne
iii.	Acetic acid	$\text{CH}_3\text{-COOH}$
iv.	Methyl alcohol	Methanol
v.	$\text{CH}_3\text{-CO-CH}_3$	Propane-2-one

2) Explain how Mendeleev's contribution laid the foundation of Modern Periodic Table.

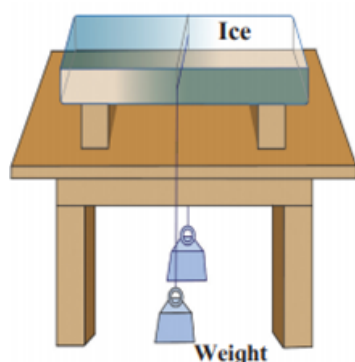
3) Explain with the help of a diagram what is convex mirror ?

4) Complete the paragraph:

(refractive index, direction, velocity, relative index, different, absolute refractive index, mass, same)

The change in the of a light ray while entering different media is different. It is related to the of the medium. The value of the refractive index is for different media and also for light of different colours for the medium. The refractive index of a medium with respect to vacuum is called its Refractive index depends on the of light in the medium.

5) Study the figure and answer the following questions.



1. Identify the phenomenon shown in the figure.

2. Explain the phenomenon.

3. What happens to the melting point when pressure is applied or removed from ice slab?

6) Give names of three functional groups containing three different hetero atoms. Write name and structural formula of one example each.

7) Coal burns in air to form carbon dioxide.

i. Write the equation for same.

ii. Which type of reaction is this.

iii. This reaction takes place by the action of which factor heat or light.

8) Read the statements given below. Identify and write the concept upon which the given statement is based.

i. When a resistor is connected in an electrical circuit heat is produced in it due to the current. This is known as

ii. An electric bulb units light when the wire in it gets heated to nearly 3400°C . This wire is made up of

iii. In a home electrical connection, this wire is connected to ground.

iv. When the current in the circuit suddenly increases this switch opens and current stops.

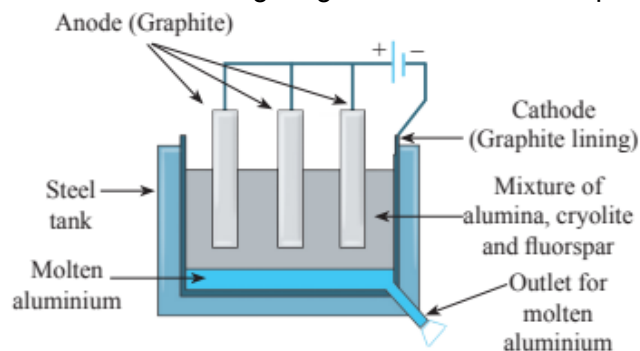
v. If you are holding an electrical conductor in your right hand, what will determine the direction of magnetic lines of force.

vi. Which devices will convert electrical energy into mechanical energy.

Q.4 Answer the following questions. (Any one)

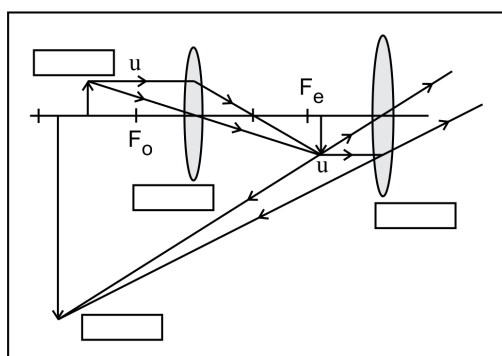
(5)

1) Observe the following diagram and answer the questions.



- Write the name of the method.
- Name the cathode and the anode.
- What is the purpose of mixing cryolite and fluorspar with alumina in the electrolytic reduction of alumina? Write the molecular formula of cryolite.
- Write the anode and cathode reactions.

2)



- Which type of microscope has the arrangement of lenses shown in the adjoining figure?
- Label the figure correctly.
- Write the working of this microscope.
- Where does this microscope used?
- Suggest a way to increase the efficiency of this microscope.