

**Q.1.A) Multiple choice questions.**

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- i) Elements of which block are called transition elements.  
(a) s- block (b) p- block (c) d- block (d) f- block
- ii) The device used for producing a current is called \_\_\_\_\_  
(a) a voltmeter (b) an ammeter (c) a galvanometer (d) a generator
- iii) A solution of  $Al_2(SO_4)_3$  in water is \_\_\_\_\_.  
(a) blue (b) pink (c) green (d) colourless
- iv) Which of the following metals is most reactive.  
(a) Calcium (b) Potassium (c) Gold (d) Aluminium
- v) During Newland's time \_\_\_\_\_ elements were known  
(a) 56 (b) 65 (c) 63 (d) 36

**Q.1) B) Answer the following .**

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- i) Brass: Copper and Zinc :: Bronze : \_\_\_\_\_
- ii) Rod like cells: Intensity of light :: conical cells: \_\_\_\_\_
- iii) State the relation between  $n_1$  and critical angle.
- iv) Is magnetic field a scalar or a vector ?
- v) Give two examples of metalloids.

**Q.2)A) Give Reason . (Any Two)**

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- i) A metal can be drawn into a wire. Explain why.
- ii) Why does a short circuit occur?
- iii) When copper articles are exposed to air for a long time, they get corroded.

**Q.2)B) Solve the following : (Any Three)**

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- i) Explain the term covalent bond with example.
- ii) Distinguish between metals and nonmetals. (4points)
- iii) On what basis and how are the orbits of artificial satellite classified?
- iv) Draw a neat labelled diagram of a compound microscope.
- v) Write a short note on escape velocity.

**Q.3) Solve the following Questions. (Any Five)**

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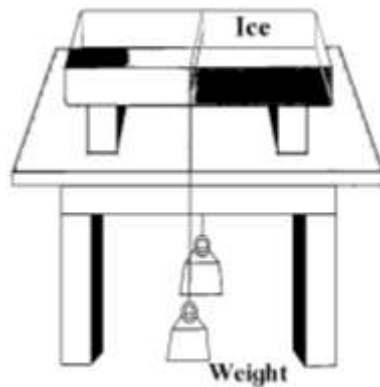
- I) Let the period of revolution of a planet at a distance R from a star be T. Prove that if it was at a distance of 2R from the star, its period of revolution will be  $\sqrt{8} T$ .
- II) Describe the structure of the modern periodic table.
- III) Explain redox reaction with suitable example.
- IV) Draw the diagram of a DC generator and explain as to how the DC current is obtained.

- V) From incident white light how will you obtain white emergent light by making use of two prisms.
- VI) Explain the terms total internal reflection and critical angle.
- VII) 5cm high object is placed at a distance of 25cm from a converging lens of focal length of 10cm. Determine the position, size and type of the image.
- VIII) How much time would a satellite in an orbit at a height of 35780km above the earth's surface take to complete one revolution around the earth, if the mass of the earth were four times its original mass?

**Q.4) Solve the following Questions. (Any One)**

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- I) Explain all the functional groups in detail with examples.
- II) Study the diagram given and answer the following Questions:



1. Define regelation.
2. In the above experiment the wire moves through the ice slab. However, the ice slab does not break, Why?
3. Is there any relationship of latent heat with the regelation?

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