



I. Answer any 5 of the following questions:

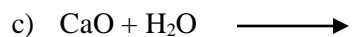
[5 x 2 = 10]

1. What is isotopes? Give example.
2. What is water gas shift reaction. Give equation.
3. Do you think that heavy water can be used for drinking purpose.
4. Define is Gibb's free energy.
5. Define enthalpy of combustion.
6. What is lattice energy?

II. Answer any 5 of the following questions:

[5 x 3 = 15]

7. Discuss the three types of covalent hydrides.
8. Complete the following chemical reactions and classify them into a) Hydrolysis b) Redox c) Hydration reactions.



9. Hydrogen peroxide can function as an oxidizing agent as well as reducing agent. Substantiate this statement with examples?
10. What are state and path functions? Give two examples.
11. Give Kelvin statement of second law of thermodynamics.
12. State the third law of thermodynamics.

III. Answer any 5 of the following questions:

[5 x 5 = 25]

13. How do you convert para hydrogen into Ortho hydrogen?
14. Explain the preparation of hydrogen by using electrolysis.
15. Explain the exchange reactions of deuterium.
16. Write down the Born-Haber cycle for the formation of CaCl_2 .
17. State the various statements of second law of thermodynamics.
18. List the characteristics of Gibbs free energy.

-----ALL THE BEST-----

Test should be written under the supervision of your parents and get the answer paper signed from them.

No corrections should be made after the test timings. We expect your honesty.

Test Papers have to be submitted after the completion of all the 4 tests.

Submission Date of Test Papers: 6th January, 7th January, 8th January

Timings: 9.30 AM – 12.30 PM / 5 PM- 8.30 PM