

Instructions to the students:

1. All questions are compulsory.
2. Each question carries 10 marks.
3. Illustrate your answers with neat sketches, diagrams etc. wherever necessary.
4. Necessary data is given in respective questions. If such data is not given, it means that knowledge of that part is a part of examination.
5. If some part of parameter is noticed to be missing, you may appropriately assume it and should mention it clearly.

Attempt the following questions.

Q.1

- a. Explain in detail Hot Lime- Soda process of softening of water with its advantages and disadvantages. 5M
- b. Write a note on "Chemical Oxygen Demand". 5M

Q.2

- a. Explain the term Phase, Component and Degrees of freedom involved in the statement of Phase rule with suitable examples. 5M
- b. Explain Phase diagram of one component Water system. 5M

Q.3

- a. Explain Smelting process involved in Metallurgy. 5M
- b. Explain Froth flotation and Magnetic separation method of Concentration of ore. 5M

OR

- a. Explain Chemical methods for Concentration of ore. 5M

Q.4

- a. Explain Proximate Analysis of Coal. 5M

OR

- a. What is Coal? Explain various types of Coal. 5M
- b. Explain various types of Lubrication. 5M

P.T.O

Q.5

- a. Explain Haworth Synthesis and Physical properties of Anthracene. 5M

OR

- a. Explain how Naphthalene is manufactured from Coal –tar and Petroleum? State its uses. 5M
- b. Explain structure determination of Pyridine. 5M

Q.6

- a. What is Transport Number and how it can be determined by Moving Boundary method? 5M

OR

- a. Explain Quinonoid theory of acid- base indicators. 5M
- b. Write a note on glass electrode.

