CY8151 Engineering Chemistry

Important 2 Marks Questions

Part-A

Unit-I

1. What are zeolites?
2. Bring out the difference between scale and sludges.
3. What happens when water containing bicarbonates of Ca^{2+} and Mg^{2+} is boiled?
4. Write the equations involved in the bleaching action of $CaOCl_2$.
5. Name any two salts that cause temporary hardness.
6. What is reverse osmosis?
7. What are the salts responsible for temporary hardness of water?
8. Mention the indicator used in EDTA titration. What is the end point?
9. What is internal treatment?
10. What is external treatment?
11. What is desalination of water?
12. Write the expression for hardness?
13. What is hardness? How do you express it?
14. Mention the requirements of boiler feed water.
15. How is hardness expressed in terms of calcium carbonate equivalent?
16. What is meant by Calgon conditioning?
17. How is desalination carried out?
18. What is ion exchange resin?
19. Explain about carry over? How is it caused?
20. How is boiler corrosion prevented?

Unit-II

1. Define acid base catalysis with an example.
2. Distinguish between catalyst promoter and catalyst poisoner.
3. What is auto catalyst? Give an example.
4. Give an example each for homogeneous and heterogeneous catalyzed reactions.
5. List any four characteristics of enzyme catalysis.
6. What are auto catalysts? Give an example.

7. Distinguish between physisorption and chemisorption.
8. Why is a reaction speeded up in the presence of a catalyst?
9. What are the types of adsorption?
10. Define contact theory.
11. What are the applications of adsorption?
12. Write the types of catalysis.
13. Write a note on autocatalysis.
14. Express the Freundlich's adsorption isotherm by a plot.
15. What is an adsorption isotherm?
16. What is acid-base catalysis? Give one example.
17. Write the mechanism of Kinetics of acid-base catalysis.
18. Define contact theory of catalysis.
19. Summarize the factors influencing adsorption of gases on solids.
20. What is catalyst?

Unit-III

1. What is pattinson process?
2. Write the mathematical expression of reduced phase rule.
3. Define "Component".
4. What are the advantages of alloying?
5. Define "component" and "Degree of freedom".
6. What are the uses of phase diagram?
7. Write is triple point?
8. Write down any two applications of alloys.
9. Write the significance of alloy.
10. Write the properties of alloys.
11. Define phase rule.
12. What is pattinson process?
13. State the importance of heat treatment of steel.
14. What are the effects of alloying elements?
15. Compare the melting point, eutectic point and triple point.
16. Define reduced or condensed phase rule.
17. State phase rule.
18. Explain the terms involved in phase rule.
19. Draw the phase diagram of water system.

20. Define eutectic point? Mention its characteristics.

Unit-IV

1. Define calorific value of a fuel.
2. Define the process knocking.
3. How is percentages fixed carbon of coal calculated?
4. Give the classification of petroleum.
5. What is a calorie? Give the different units of calorific value.
6. How coals are classified?
7. Classify fuels.
8. Define ignition temperature.
9. Write the classification of rules.
10. Define Octane number.
11. What is calorific value?
12. What is natural gas?
13. What is synthetic petrol?
14. List the characteristics of metallurgical coke.
15. What is octane number and cetance number? Give an example.
16. Define calorific value of fuel.
17. Define Dulong's formula.
18. Distinguish between HCV and LCV.
19. What is TEL. State its uses?
20. State the characteristics of a good fuel.

Unit-V

1. What is moderator?
2. Write the principles of a fuel cell.
3. Write the disadvantages of fuel cell.
4. Give some applications of solar cell.
5. Give an example each for nuclear fission and nuclear fusion reactions.
6. What are the advantages of lithium cell?
7. What is a nuclear chain reaction?
8. What is the voltage generated by $H_2.O_2$ fuel cell?
9. What is nuclear fission?
10. What is nuclear fusion?

11. What is nuclear chain reaction?
12. Write the classification of batteries.
13. What is a supercapacitor?
14. Differentiate primary and secondary batteries.
15. What are primary battery? Give an example.
16. What are secondary battery? Give an example.
17. Mention some applications of super capacitors.
18. What is critical mass, super and sub critical mass?
19. Differentiate fissile and fertile nuclides.
20. Discuss breeder reactor.