

UNIT-I

2 & 3 Mark Questions

1. What is adsorption?
2. How the number of effects determined in MEE?
3. Why chemical recovery is necessary?
4. What is WBL?
5. Formula for 1) Total Alkali 2) Active Alkali
6. What is steam economy?
7. Formula for percentage activity , causticity
8. Name any 2 types of MEE bodies used in kraft recovery plant?
9. Why black liquor is black in color?
10. Why is it added to CBL?
11. Mention any 2 properties of black liquor?
12. What are the standard terms used in kraft recovery plant (any 4)?
13. Name any 3 types of direct contact evaporators used in kraft recovery plant?
14. Why vacuum is required in evaporators?
15. Which factor decides the number of effects in evaporators?

10 Mark Questions

1. Why liquor is circulated in each effect of falling film evaporators?
2. Briefly describe about raising film and forced circulation evaporator with neat sketch?
3. Write about 1) cascade evaporator 2) venturi evaporator cum scrubber
4. What major problem is encountered during evaporation of black liquor in MEE in a kraft mill suggest remedies?
5. Write a notes on semi concentrated black liquor properties
6. Direct contact evaporators in recovery boiler are absolute comment?
7. A six effect evaporator concentrates 150 t/hr of WBL from 8 % to 48 % total solids what are the total vapor evaporated and SCBL rate?
8. A white liquor has a composition of NaOH = 110gpl; Na₂S = 22gpl;
Na₂CO₃ = 34gpl; Na₂SO₃ = 6gpl; all chemicals expressed as such .if the organic GL contained 3.5 % NaOH as Na₂O,what is the caurtising efficiency?
Why sulphidity is important in kraft cooking?

UNIT – III

2 & 3 Mark Questions

1. What are the pressure parts in recovery boiler?
2. What are the makeup chemicals used in recovery plant?
3. What is the solid waste generated in recovery plant?
4. What is an economizer?
5. Briefly explain how air is supplied to chemical recovery furnace?
6. What is the chemical formula for salt cake?
7. Write the flue gas passage in recovery boiler?
8. Write the flow path of feed water in recovery boiler?
9. What do you mean by makeup chemical and how it is added?

10 Mark Questions

1. Write the chemical equation of the reaction takes place inside the recovery furnace?
2. What are the types of recovery boilers and why combustion engineering boiler is suited for black liquor incineration or zones?
3. What are the functions of pre heaters in evaporators?
4. What is recovery efficiency and how it is calculated and write the location?
5. Explain the constructional details of a chemical recovery furnace with sketch?
6. Explosion hazards and common troubles associated with the recovery furnace?
7. Write short note on:
 - A. Slag screen and super heater
 - B. Recovery boiler
 - C. Automatic retractable soot blowers
 - D. Steam coil air heater
8. Make up chemicals comment

UNIT-IV

2 & 3 Mark Questions

1. What is removed when Green liquor is clarified.
2. Why causticising plant operation is very smooth when lime kiln product is used for slaking.
3. Why heat is generated when water is added to lime.
4. What happens when lime sludge is burnt in lime kiln.
5. What is the best method of conveying burnt lime
6. What is the composition of lime sludge
7. What is the advantage of green liquor clarification
8. Briefly explain single bin and double bin storage
9. Name different zones inside the lime kiln
10. Mention any advantage of lime mud washing
11. Write down the chemical reaction occurring during burning of lime mud in a lime kiln
12. Why safety features are inbuilt into the smelt dissolving tank in the event of an explosion
13. What is smelt
14. Why green liquor is clarified.
15. What are the different zones in lime kiln
16. How char bed is maintained in recovery boiler?
17. What is the equipment used to remove grits from causticizing plant?
18. What is the use of lime kiln in recovery plant?

10 Mark Questions

1. What is two stage causticizing? Mention its advantages?
2. Write the reaction of lime kiln and why heat is necessary?
3. Briefly explain the construction and operation of rotary lime kiln with sketch?
4. Explain in details about clarification of raw green liquor and muds washing
5. Write in detail about fluidized bed calcinations system and its merits and demerits over lime kiln
6. Write a neat sketch explain the operation of mud washing a three stage unit type washers in a kraft mill I detail
7. Mention any two problems encountered during white liquor clarification how are they overcome?
8. Write in detail about different zones their function and temperatures inside the kiln.

UNIT-V

2 & 3 Mark Questions

1. Why temperature plays major role in causticizing plant?
2. Write down the chemical reaction equation involved in causticizing
3. Define causticising efficiency
4. What will happen to causticizing efficiency if Na_2S increases in GL?
5. Write the reaction of causticizing?

10 Mark Questions

1. At what point sodium sulphur and calcium are lost in a kraft recovery plant? How are they made up?
2. With the sketch explain the direct oxidation of black liquor gasification and solidification?
3. What are the modern trends in chemical recovery of a kraft mill? Explain in detail
4. Explain the factors that prevent causticizing efficiency becoming cent percentage in a kraft mill
5. Explain in detail about magnetic(sulphite) spent liquor recovery process
6. Explain in detail about the factor influencing causticizing efficiency and reasons for incomplete causticizing
7. Briefly explain about
8. 100 t/hr of lime mud containing 60% solids (CaCO_3) is burnt with limestone of 65% purity in a rotary lime kiln whose conversion efficiency is calculated to be equal to 70%. If reburnt lime going to slakers is 31 t/hr. calculate the amount of make up limestone supplied.