Q.34 Discuss startup and shut down procedure of evaporator

Q.35 Convert 195 gpINA_2CO_3, as such into NA_2CO_3 as NA_2O

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

Q.36 Discuss construction and working principle of combustion Engineering recovery furnace with neat diagram.

Q.37 Name different feeding arrangements in multiple effect evaporator and discuss them with neat diagram.

Q.38 Calculate the amount of water evaporated in kg/hr in evaporator for the following data: Flow rate of weak black liquor is 725 kg/hr, solid concentration of weak black liquor is 18% and solid concentration of strong black liquor is 51%.

Roll No. .....

5th Sem / P & P
Subject:- Chemical Recovery

Time : 3Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Write SI units of density of B/L

a) m k /watt b) kg/m^3
c) m/watt k d) watt/ m k

Q.2 Write commercial name of NA_2CO_3

a) Sodium hydroxide b) soda ash
c) sodium carbonate d) sodium chloride

Q.3 Equivalent weight of $CACO_3$ is

a) 50 b) 100
c) 150 d) 120

Q.4 Expand ^{0}Tw

a) Degree twaddle b) degree boyle
c) Degree Baume d) degree BTU

Q.5 Write main constituent of Green luquor

a) NAOH b) NA_2CO_3
c) NA_2SO_4 d) CAO

Q.6 Give solid percentage range of weak black liquor

a) 50-55% b) 14-18%

c) 60-65% d) 100%

Q.7 Expand BPR

a) Blood pressure rise b) Black paint real

c) Boiling point rise d) None

Q.8 Black liquor comes from which section

a) pulp washing b) paper making

c) coating d) stock preparation

Q.9 Write the formula of lime

a) $CACL_2$ b) $CASO_4$

c) $CACO_3$ d) CAO

Q.10 Write SI units of specific heat of B/L

a) m k /watt b) j/kg k

c) m / watt k d) watt/m k

SECTION-B

Note: Objective type questions. All questions are compulsory. (10x1=10)

Q.11 Write objective of black liquor recovery

Q.12 Write full form of MEE

Q.13 Define caustisizing efficiency

Q.14 Write purpose of oxidation of black liquor

Q.15 Write formula of salt cake

Q.16 What is white liquor

Q.17 Give constituents of white liquor of sulphate pulping.

Q.18 Write calcination reaction.

Q.19 Name direct contact evaporators

Q.20 Expand ^{0}Be

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

Q.21 Write reactions in oxidation zone of combustion engineering furnace.

Q.22 Define causticity and sulphidity

Q.23 Draw a neat sketch of evaporator

Q.24 What do you mean by induced draft fan?

Q.25 Write functions of economizers

Q.26 Discuss working principle of lime kiln

Q.27 Write short note on green liquor clarifier

Q.28 Define steam capacity and steam economy

Q.29 Write short note on black liquor oxidation.

Q.30 Convert 82gpINA2S as such into NA_2S as NA_2O

Q.31 Write slaking and causticizing reaction and write names of chemicals involved

Q.32 Write a short note on Reburning of lime sludge.

Q.33 Define density and specific gravity of black liquor.