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6th Sem / Chemical Engineering (P & P)

Subject:- Chemical Recovery

Time : 3Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 White Liquor is used in

a) Digester b) Furnace

c) Evaporator d) None

Q.2 Write Molecular weight of lime

a) 35 b) 78

c) 56 d) 38

Q.3 Causticizing reaction is carried out

a) Lime Kiln b) Lime Slaker

c) Causticizer d) None

Q.4 Write Equivalent weight of Sodium Oxide is

a) 41 b) 31

c) 60 d) 120

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x8=16)

Q.23 Write short note on any two of the following.

a) White liquor clarifier

b) Startup and shutdown procedure of MEE

c) Lime Mud Handling.

Q.24 Calculate the water evaporated from B/L for following data. Solid concentration of weak B.L=18%, Solid concentration of heavy B/L=50%, feed rate of weak B/L = 625 kg/hr

Q.25 Explain construction and working principle of JMW recovery furnace with a neat diagram.

Q.5 Write the chemical formula of soda ash

a) Na_2CO_3 b) NaOH

c) Na_2SO_4 d) None

Q.6 Expand MEE

a) Multi Effect Evaporator

b) Multiple Effect Evaporator

c) Multi Efficiency Evaporator

d) None

SECTION-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Expand BPR.

Q.8 What is Black Liquor?

Q.9 Write the slaking reaction.

Q.10 Write any one Chemical property of black liquor.

Q.11 What is Heavy black liquor

Q.12 What is ^{0}Tw?

SECTION-C

Note: Short answer type questions. Attempt any eight questions out of ten questions. (8x4=32)

Q.13 Define caustisizing efficiency and sulphidity.

Q.14 Convert 872gm of Na_2CO_3 as Na_2O into Na_2CO_3 as such.

Q.15 Explain the principle of venture scrubber direct contact evaporator.

Q.16 Write a note on lime mud washing.

Q.17 Draw a neat sketch of single effect evaporator

Q.18 Explain working of green liquor clarifier.

Q.19 Write reactions in oxidation zone in recovery furnace.

Q.20 Define viscosity of black liquor.

Q.21 Write a short note on black liquor oxidizers.

Q.22 Write a function of lime slaker