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2nd Sem / Chemical, Chem P & P

Subject : Mechanical Operations

Time : 3 Hrs. M.M. : 60

SECTION-A

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

Q.1 Increasing the capacity of the screen (CO3)

a) Increases screen effectiveness

b) Decreases screen effectiveness

c) Does not affect screen effectiveness

d) None of the above

Q.2 Size measurement of utrafine particles can be best expressed in terms of (CO1)

a) Feet

b) Inch

c) Cm

d) Surface area per unit mass

Q.3 Solid particles of different densities are separated by (CO5)

SECTION-D

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

Q.23 Write a short note on any two following

a) Cake filtration (CO4)

b) Deep bed filtration (CO4)

c) Suspended batch centrifuge (CO5)

d) Gravity classifiers (CO4)

Q.24 Explain in detail the construction and working of vibrating screen. Also draw neat and clean diagram. (CO3)

Q.25 Explain in detail Principle, Construction and working of fluid energy mill with the help of diagram. (CO2)

a) Filter b) cyclone

c) Sorting clarifier d) Thickness

Q.4 100 mesh screen means. (CO3)

a) 100 openings persquare inch

b) 100 openings per square ft.

c) 100 openings per square m

d) 100 Opening per square cm

Q.5 Energy consumed by ball mill depends on (CO2)

a) Its speed b) its ball load

c) Density of material d) All of these above

Q.6 Dust Laden air can be purified using (CO5)

a) Cyclone separator b) Hydro cyclone

c) Tubular centrifuge d) Disk centrifuge

SECTION-B

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

Q.7 Write the formula of sphericity. (CO1)

Q.8 Write names of any two screening equipment. (CO3)

Q.9 Define critical speed of ball mill. (CO2)

Q.10 Name any one solid liquid mixing equipment.(CO6)

Q.11 Name any two pressure filter equipment. (CO4)

Q.12 State Bond's Law of crushing. (CO2)

SECTION-C

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

Q.13 Write the expression for specific surface area of mixture and volume surface mean diameter. (CO1)

Q.14 State and explain Rittinger's law of crushing and write its expression. (CO2)

Q.15 Differentiate between ball mill and fluid energy mill. (CO2)

Q.16 Differentiate between Grizzlies and Trommels. (CO3)

Q.17 Explain the principle and working of rotary drum filter with the help of diagram. (CO4)

Q.18 Describe batch sedimentation process with diagram. (CO6)

Q.19 Explain in brief the different types of agitators used for liquid-liquid mixing. (CO6)

Q.20 Discuss the various flow patterns formed in agitated vessels during liquid-liquid mixing. (CO6)

Q.21 Explain the construction and working of Jaw crusher. (CO2)

Q.22 Discuss the construction and working of cyclone separator. (CO5)