University of Mumbai
Examination 2020 under cluster PCOE

Program: Chemical Engineering
Curriculum Scheme: Rev2016
Examination: Second Year Semester IV
Course Code: CHC404 and Course Name: Solid Fluid Mechanical Operations
Time: 1 hour Max. Marks: 50

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For the students: - All the Questions are compulsory and carry equal marks .

Q1.	Sieve analysis is meant for_____
Option A:	coarse-grained soils
Option B:	fine-grained soils
Option C:	coarse-grained gravel
Option D:	Silt
Q2.	The percentage of soil retained on each sieve is calculated on the basis of _____
Option A:	total mass
Option B:	total weight
Option C:	volume of sample
Option D:	density of soil
Q3.	Which of the following screens has the maximum capacity?
Option A:	Grizzlies
Option B:	Trommels
Option C:	Shaking screens
Option D:	Vibrating screens
Q4.	In a ball mill, the volume occupied by the balls (when the mill is stopped) is about _____ percent of the volume of the mill
Option A:	35
Option B:	50
Option C:	70
Option D:	85
Q5.	For the transportation of ultrafine particles, the equipment used is a _____ conveyor.
Option A:	Belt
Option B:	Pneumatic
Option C:	Screw
Option D:	None of these
Q6.	Crushing efficiency is the ratio of the
Option A:	Surface energy created by crushing to the energy absorbed by the solid
Option B:	Energy absorbed by the solid to that fed to the machine
Option C:	Energy fed to the machine to the surface energy created by crushing
Option D:	Energy absorbed by the solid to the the surface energy created by crushing
Q7.	Grinding capacity of a ball mill is of the order of _____ percent

Option A:	1-5
Option B:	40-50
Option C:	75-80
Option D:	90-95
Q8.	Flow of filtrate through the cake in a plate & frame filter press is best describe by the _____ equation
Option A:	Kozney Karman
Option B:	Hagen Poiseulle's
Option C:	Fanning
Option D:	Kremser
Q9.	Which new term is utilized for measuring non spherical particles?
Option A:	Sphericity
Option B:	Volume displacement
Option C:	Geometry
Option D:	None of these
Q10.	In continuous filtration (at a constant pressure drop), filtrate flow rate varies inversely as the
Option A:	Square root of the velocity
Option B:	Square root of the viscosity
Option C:	Filtration time only
Option D:	Washing time only
Q11.	For a cyclone of diameter 0.2 m with a tangential velocity of 15 m/s at the wall, the separation factor
Option A:	2250
Option B:	1125
Option C:	460
Option D:	230
Q12.	In which type of settling, sedimentation of discrete particles takes place?
Option A:	Zone settling
Option B:	Compression settling
Option C:	Hindered settling
Option D:	Discrete settling
Q13.	Mesh indicates the number of holes per
Option A:	Square inch

Option B:	Linear inch
Option C:	Square foot
Option D:	Linear foot
Q14.	Sizing of very fine particles of the order of 5 to 10 microns is done by elutriation, which is a _____ operation.
Option A:	Clarification
Option B:	Sedimentation
Option C:	Flocculation
Option D:	Classification
Q15.	Sphericity of pulverized coal is
Option A:	1
Option B:	<1
Option C:	>1
Option D:	∞
Q16.	Which of the following achieves the least reduction ratio for a given feed size?
Option A:	Jaw crusher
Option B:	Roll crusher
Option C:	Cone crusher
Option D:	Gyratory crusher
Q17.	Trammels employ _____ for crushing of materials
Option A:	Fibrous cloth
Option B:	Woven wire screen
Option C:	Punched plate
Option D:	None of these
Q18.	Operating speed of a ball mill should be _____ the critical speed
Option A:	Less than
Option B:	Much more than
Option C:	At least equal to
Option D:	Slightly more than
Q19.	A filter press is
Option A:	A batch filter
Option B:	Not suitable, if the liquid is the main product
Option C:	Having prohibitively high maintenance cost
Option D:	Not suitable for wide range of materials under varying operating conditions of cake thickness & pressure
Q20.	Which of the following crushers can be considered as a combination of a jaw crusher and a roller crusher?
Option A:	Roll energy

Option B:	Fluid energy mill
Option C:	Gyratory crusher
Option D:	Ball mill
Q21.	Which of the following represents the plot of filtrate volume verses time for constant pressure filtration?
Option A:	Parabola
Option B:	Straight line
Option C:	Hyperbola
Option D:	Exponential curve
Q22.	Wet sieving is employed, when the product contains _____ materials.
Option A:	Abrasive
Option B:	Large quantity of very fine
Option C:	Coarse
Option D:	Non – sticky
Q23.	Mixing of plastic solids is generally facilitated by
Option A:	Dispersion
Option B:	Mastication
Option C:	Kneading
Option D:	None of these
Q24.	Which of the following crushing laws is most accurately applicable to the fine grinding of materials?
Option A:	Bond’s law of crushing
Option B:	Kick’s law
Option C:	Rittinger’s law
Option D:	None of these
Q25.	Which of the following with respect to mixing is true?
Option A:	It is used to distribute heat uniformly to all the components of the mixture
Option B:	Mixing becomes difficult when one of the phases to be mixed is in minor quantity
Option C:	Solid-solid mixing is more difficult than other phases
Option D:	All of the mentioned