University of Mumbai

Examination 2020 under cluster- PCOE

Program: ____CHEMICAL_____ Engineering

Curriculum Scheme: REV2012

Examination: First/**Second**/Third/Final Year Semester I/II/*III*/**IV**/V/VI/VII/VIII

Course Code: _CHC404____ and Course Name: __Solid fluid operation

Time: 1 hour SAMPLE PAPER

Max. Marks: 50

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NOTE to the Question Paper Setter: (To be deleted before submitting the paper to Semester Coordinator)

1. The question bank consists of 25 MCQ questions with each question carrying a maximum of 2 marks. It should cover all the modules with appropriate weightages.
2. You need to check the questions and their answers for their correctness. There should not be any ambiguity in the questions and the options. Only one option should be the Correct Answer.
3. You must ensure that the same question is not repeated again in this question paper.
4. Among 25 questions, 13 questions can be under the 'Simple' category, 7 questions can be under the 'Moderate' category, and the remaining 5 questions can be under the 'Difficult' category.
5. Please do not reveal answer on this Question Paper.
6. Use another template provided to enter the correct answers.
7. Please save this file with file name as per the sample format given below:

File Name: "Date of Examination_Scheme_Program_Semester_Subject Code_QP Set Number"

For example:

QP set number 1 of first core course of Mechanical Engineering Semester V for Rev2016 scheme and scheduled on 2/12/2020 has to have the file name as

0212_R16_Mech_V_MEC501_QP1

QP set number 3 of Department Level Optional Course of Computer Engineering Semester VI for Rev2012 scheme and scheduled on 12/12/2020 has to have the file name as

1212_R12_Comp_VI_CSDLO6021_QP3

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

Q1.	The most accurate law for estimating the power is ____
Option A:	Rittingers law
Option B:	Bond's law
Option C:	Kick's law
Option D:	Power law
Q2.	What is the surface to volume ratio?
Option A:	Sp/Dp
Option B:	Sp/Vp
Option C:	Dp/Vp
Option D:	Dp/Kp
Q3.	The gross energy requirement is called as ____
Option A:	Work index
Option B:	Power index
Option C:	Energy index
Option D:	Final index

Q4.	For crushing rolls, α is_____
Option A:	Angle of bend
Option B:	Angle of Nip
Option C:	Angle of stamp
Option D:	Angle of Camp
Q5.	Calculate α. If radius of feed and roll are 100 mm and 500 mm respectively and largest particle is 5 mm?
Option A:	41.1
Option B:	32.75
Option C:	16
Option D:	20
Q6.	Which of the following works on the principle of impact?
Option A:	Ball mill
Option B:	Roll crusher
Option C:	Gyratory Mill
Option D:	Jaw crusher
Q7.	As the rate of feed increases, the size reduction ____
Option A:	Increases
Option B:	Remains constant
Option C:	Equals
Option D:	Decreases
Q8.	The ball mill can be best used for which kind of feed?
Option A:	Wet and Dry
Option B:	Coarse and Fine
Option C:	Rocks and Bricks
Option D:	Any kind of feed
Q9.	At critical speed, α = 0 and cos α = 1, what is critical speed?
Option A:	n = nc
Option B:	2π = nc
Option C:	g = nc
Option D:	gn= nc
Q10.	When this interface approaches the layer of sediment, its rate of fall decreases until the _____
Option A:	Final settling point
Option B:	Critical settling point

Option C:	Primer settling point
Option D:	Kynch velocity
Q11.	The above below equation is used to calculate the _____ $-\frac{dH}{dt} = b(H - H_\infty)$
Option A:	Rate of filtration
Option B:	Rate of flotation
Option C:	Rate of sedimentation
Option D:	Rate of evaporation
Q12.	The aggregation of colloids is known as ____
Option A:	Coagulation
Option B:	Sedimentation
Option C:	Precipitation
Option D:	Fluctuation
Q13.	Gravity thickening requires much higher torques than clarification.
Option A:	True
Option B:	False
Option C:	
Option D:	
Q14.	There will be no effect on rate of sedimentation, if ratio of diameter of vessel to particle is ___
Option A:	<100
Option B:	=100
Option C:	>100
Option D:	No effect
Q15.	Which of the following is not the application of filtration?
Option A:	Sterilization of media
Option B:	Removal of debris
Option C:	Plasma clarification
Option D:	Off-gas analysis
Q16.	Which of the following does not influence filtration?
Option A:	Temperature
Option B:	) Density
Option C:	pH
Option D:	Viscosity

Q17.	What do you mean by filter cake?
Option A:	The cake which is to be filtered
Option B:	A porous membrane used to retain the solids
Option C:	The solids which are present on the filter
Option D:	A suspension to be filtered
Q18.	Ore concentration by jigging is based on the difference in _____ of the particles.
Option A:	Specific gravities
Option B:	Wet ability
Option C:	Shape
Option D:	Size
Q19.	Screen capacity is expressed in terms of _____
Option A:	Tons/hr
Option B:	Tons/ft2
Option C:	Tons/hr-ft2
Option D:	Tons
Q20.	Size measurement of ultrafine particles can be best expressed in terms of _____
Option A:	Cm
Option B:	Screen size
Option C:	Micron
Option D:	Surface area per unit mass
Q21.	With the help of _____ the materials are transported with a continuous flow at comparatively high speeds.
Option A:	Trucks
Option B:	Dumpers
Option C:	Conveyors
Option D:	Elevators
Q22.	_____ Conveyors operate in series with end discharge transfer points.
Option A:	Transfer
Option B:	Feeder
Option C:	Spreading
Option D:	Unit
Q23.	What are the methods for measuring large particles of size above 5mm?
Option A:	Calliper
Option B:	Micrometer

Option C:	Sieves
Option D:	All of the mentioned
Q24.	What is the relationship between sphericity and voidage?
Option A:	Sphericity=(6(1-voidage))/(a*dp)
Option B:	b) Voidage=(6(1-sphericity))/(a*dp)
Option C:	Sphericity=(6*voidage)/(a*dp)
Option D:	Voidage=(6*sphericity)/(a*dp)
Q25.	According to Brown, fractional voids in the packed bed are related to _____ of particles?
Option A:	Shape
Option B:	Size
Option C:	Sphericity
Option D:	None of the mentioned