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220524

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 Individual solid particles are characterized by their_____

a) Only size b) Only shape

c) Only density d) All as above

Q.2 Sphericity ($Ø_s$) is independent of_____

a) Size b) Shape

c) Density d) None

Q.3 Which jaw is fixed in jaw crusher?

a) Upper jaw b) Lower jaw

c) Middle jaw d) None

Q.4 On which principle screening is based?

a) Size b) Shape

c) Density d) All of the above

Q.5 Which of the following is the best for kneading?

a) Impeller b) Sigma

c) Agitator d) Cutting

Q.6 Select for fine separation.

a) Dorr classifier b) Tumbler mill

c) Impeller d) Rake classifier

SECTION-B

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

Q.7 Which particle is called irregular particle?

Q.8 Name any one size reduction equipment.

Q.9 Which action (in size reduction) gives exact size & shape?

Q.10 Write the name of any one type of filter media.

Q.11 What is the use of filter aids?

Q.12 Which mixer is used for cohesive solids?

SECTION-C

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

Q.13 Define Sphericity ($Ø_s$).

Q.14 Describe differential & cumulative analysis.

Q.15 List size reduction equipment.

Q.16 Draw neat sketch of smooth roll crusher.

Q.17 Differentiate screening & cleaning.

Q.18 What is screen effectiveness?

Q.19 Define filtration.

Q.20 Give the classification of filter equipment.

Q.21 Describe kneading, Dispersers & masticators.

Q.22 Define flow pattern in agitated vessels.

SECTION-D

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

Q.23 Explain in detail characterization of single solid particle.

Q.24 What is the necessity of size reduction? Describe jaw crusher with neat & clean diagram.

Q.25 Write short notes on any two of the following-

a) Tayler standard screen series

b) Plate & frame filter press

c) Sedimentation

d) Cyclone separator