BACHELOR OF TECHNOLOGY (C.B.C.S.) (2021-COURSE)
B. Tech. Sem - III CHEMICAL : WINTER- 2022
SUBJECT : PARTICULATE TECHNOLOGY

Day : Thursday | Time : 10:00 AM-01:00 PM

Date : 15-12-2022 | **W-25292-2022** | Max. Marks : 60

N.B.

1) All questions are **COMPULSORY.**
2) Figures to the right indicate **FULL** marks.
3) Assume suitable data if necessary.
4) Use of non-programmable calculator is **ALLOWED.**

Q.1 One ton per hour of dolomite is produced by a ball mill operating in a closed circuit grinding with 100 mesh screen. The screen analysis (weight %) is given below. Calculate the screen efficiency. Data from screen analysis. **(10)**

Mesh	Feed (%)	Oversize (%)	Undersize (%)
35	7.07	13.67	0.00
48	16.6	32.09	0.00
65	14.02	27.12	0.00
100	11.82	20.70	2.32
150	9.07	4.35	14.32
200	7.62	2.07	13.34
–200	33.8	0.00	70.02

OR

Derive equation for screen effectiveness.

Q.2 Describe batch sedimentation test and what are the factors which affect sedimentation? **(10)**

OR

Derive expression for terminal settling velocity for spherical particle.

Q.3 Discuss the performance of cyclone for air pollution treatment. **(10)**

OR

Describe with neat sketch, the principle and operation of an electrostatic and magnetic separator.

Q.4 Discuss the different methods for storage of solids. **(10)**

OR

Describe the construction and working of the screw conveyor.

Q.5 Give the properties of different types of impellers with figure. **(10)**

OR

Give brief discussion on mixer extruder.

Q.6 Discuss plate and frame filter press in detail. **(10)**

OR

Derive expression for constant pressure filtration.

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