

- NB:**
- 1) Question no.1 is compulsory
 - 2) Attempt any three from remaining five questions.
 - 3) Assume suitable data if required.
 - 4) Figure to the right indicates full marks.

- Q.1
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|------------------------------------------------------------|---|
| A) Write short notes on industrial screening operation | 4 |
| B) Write a short note on Open and Closed Circuit Operation | 4 |
| C) Write short notes on Packing in Packed bed. | 4 |
| D) How we store the bulk solids? | 4 |
| E) Write assumptions for Kynch theory of sedimentation . | 4 |
- Q.2
- | | |
|--------------------------------------------------------------|----|
| A) Write a note on Energy laws for Crushing. | 10 |
| B) Derive the expression for critical speed of the ball mill | 10 |
- Q.3
- | | |
|-------------------------------------------|----|
| A) Derive Ergen’s Equation | 10 |
| B) Explain in brief types of Fluidization | 10 |
- Q.4
- | | |
|-----------------------------------------|----|
| A) Write notes on Rotary vacuum filter. | 10 |
| B) Derive constant pressure filtration | 10 |
- Q.5
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| A) Explain with the neat sketch the working principle of Screw Conveyors. | 10 |
| B) 2 m ³ /min of a pulp is to be thickened from a feed concentration of 150 g/lit to 1000 g/lit by continuous sedimentation. Calculate the minimum required diameter of thickener. Batch settling data is given below: | 10 |

Time (hrs)	0	0.1	0.25	0.5	1	2	4
Pulp Height (m)	0.9	0.6	0.43	0.25	0.15	0.08	0.03

- Q.6 Write short note on 20
- i) Ribben Blender
 - ii) Fabric Filter
 - iii) Froth Floatation
 - iv) Cyclone separator.
