

GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA ENGINEERING – SEMESTER – III • EXAMINATION – WINTER 2015

Subject Code: 3330502**Date: 12 /12 /2015****Subject Name: Mechanical operation****Time: 10:30 AM TO 01:00 PM****Total Marks: 70****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.
4. Each question carry equal marks (14 marks)

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|-------------|--|-----------|
| Q.1 | (a) Explain : Agitation vessel with figure | 07 |
| | (b) Derive equation for critical speed in Ball mill. | 07 |
| Q.2 | (a) Explain : Swirling and vortex formation. | 07 |
| | (b) Classify : Size reducing equipments. | 07 |
| | OR | |
| | (b) Derive equation for Angle of Nip. | 07 |
| Q.3 | (a) Describe Filter press in detail. | 07 |
| | (b) Explain : Rotary filter. | 07 |
| | OR | |
| Q.3 | (a) Write requirements of filter media. | 07 |
| | (b) Explain : Constant rate filtration and constant rate filtration. | 07 |
| Q.4 | (a) Explain : Muller mixer with figure. | 07 |
| | (b) Explain: Banbury mixer. | 07 |
| | OR | |
| Q. 4 | (a) Write about Mixing index in detail. | 07 |
| | (b) Compare ideal and actual screen. | 07 |
| Q.5 | (a) Derive equation for overall efficiency of Screen. | 07 |
| | (b) Write short note on cyclone separator. | 07 |
| | OR | |
| Q.5 | (a) Explain unit operation and unit process in detail. | 07 |
| | (b) Explain : Jigging. | 07 |
