

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-V • EXAMINATION – SUMMER 2013****Subject Code: 150502****Date: 16-05-2013****Subject Name: Mechanical Operation****Time: 10.30 am - 01.00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Explain construction and working of Blake jaw crusher or Smooth-roll crusher. **07**
(b) Discuss working principle and construction of ball mill. **07**
- Q.2** (a) With the help of flow diagram explain open-circuit and closed-circuit grinding operation. **07**
(b) Discuss screen analysis in detail. **07**
- OR**
- (b) List out types of mixers and discuss any one in detail. **07**
- Q.3** (a) What is fluidization? Discuss the conditions for fluidization. **07**
(b) Discuss about continuous fluidization. **07**
- OR**
- Q.3** (a) Explain construction and working of continuous rotary vacuum filter. **07**
(b) Explain principles of cake filtration and pressure drop through filter cake. **07**
- Q.4** (a) Discuss about batch sedimentation. **07**
(b) Discuss about filter media and filter aids. **07**
- OR**
- Q.4** (a) Discuss construction and working of hydrocyclone. **07**
Q.4 (b) Explain principle of centrifugal sedimentation. **07**
- Q.5** (a) Explain different types of agitators and their selection criteria. **07**
(b) Explain method for calculation of power consumption for agitator. **07**
- OR**
- Q.5** (a) Discuss effect of system geometry on power consumption. **07**
(b) Write short note on Static mixers. **07**
