

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI • EXAMINATION – WINTER • 2014****Subject code: 162603****Date: 01-12-2014****Subject Name: Rubber Equipment Design-I****Time: 02:30 pm - 05:00 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)** Draw the Labelled diagram of Mixing Mill. Write the specification of Mixing Mill widely used in Rubber Industry. (07)
- (b)** Short Note on “Streamlines & Velocity profiles in Rolling Nips.” (07)
- Q.2 (a)** Discuss in detail about Antifriction Bearings of Calender Machine. (07)
- (b)** Discuss the Construction & Operation of Calender Machine. (07)
- OR**
- (b)** Explain the Calculation of Calender Roll separating Force. (07)
- Q.3 (a)** Explain in detail about the “Tempered water system’ in Internal Mixer. (07)
- (b)** Discuss in detail about Ram Construction for Internal Mixer. (07)
- OR**
- Q.3 (a)** Discuss in detail about different parts of Internal Mixer. (07)
- (b)** Explain about the function of wing. Write the effect of trailing and leading angle of wing in Internal Mixer. (07)
- Q.4 (a)** Explain the Hydraulic Principle. Write in detail about Hydraulic Press. (07)
- (b)** Describe in detail about Pressure Accumulator. (07)
- OR**
- Q.4 (a)** Explain in detail about designation of Mechanical Presses with example. (07)
- Q.4 (b)** Answer the following.
- (i)** The weight of a 450mm plunger of an accumulator is 5500 Kg. What additional weight is to be placed upon it to develop a hydraulic pressure of 52 Kg/cm²? (03)
- (ii)** List the parameters for designation of Mechanical Press. (02)
- (iii)** Which points should be taken into account for selecting a Press? (02)
- Q.5 (a)** Discuss in detail about “Materials used for High Pressure Vessels”. (Autoclave) (07)
- (b)** Short Note on Delta-ring Closures. (07)
- OR**
- Q.5 (a)** Which types of Stresses are produced in the wall of the Shell due to pressure in Autoclave? Explain in detail. (08)
- (b)** Write the importance of Jacket for Autoclave. How many methods are used for providing Jackets? Explain with figure. (03)
- (c)** Write about the Autofrettage construction for Autoclave. (03)
