

GUJARAT TECHNOLOGICAL UNIVERSITY**B.E SEMESTER-IV EXAMINATION SUMMER-2015****Subject code: 142603****Date: 05/06/2015****Subject Name: Rubber Engineering****Time: 10.30am-01.00pm****Total Marks: 70****Instructions:**

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

- Q.1 (a)** What do you mean by calendar bowl deflection? Which methods are available to rectify it? Explain any one in detail. **07**
- Q.1 (b)** Answer the following
- i** Draw different roll configurations of four roll calendar. **03**
 - ii** Write down the main sources of potential danger, typical sources of accidents and methods of guarding for mixing mill and internal mixer respectively. **04**
- Q.2 (a)** Write a short note on cold feed extruder. Also list the factors affecting output of extruder. **07**
- Q.2 (b)** Answer the following
- i** Define the given terms: (i) Extrusion (ii) Extrudate (iii) Pitch **03**
 - ii** Which method is used to lower the coefficient of friction of rubber surface? Explain that method. **04**
- OR**
- Q.2 (b)** Answer the following
- i** Define the given terms: (i) L/D Ratio (ii) Compression Ratio (iii) Start **03**
 - ii** How the flash of vulcanizate is removed by grinding and hand trimming respectively? **04**
- Q.3 (a)** Give the classification of two roll mixing mill. Also explain the open mill mixing with suitable formulation. **07**
- Q.3 (b)** Answer the following
- i** Write down the requirements of good compound mix and mixing process. **03**
 - ii** Explain the given features with respect to internal mixer: (i) Rotor Speed (ii) Rotor Design **04**
- OR**
- Q.3 (a)** Discuss the problems associated with mixing process. **07**
- Q.3 (b)** Answer the following
- i** What do you mean by tandem mixing? **02**
 - ii** Explain the given features with respect to internal mixer: (i) Ram Pressure (ii) Discharge Door **05**
- Q.4 (a)** Discuss in detail about the types of compression moulding process. **07**
- Q.4 (b)** Answer the following
- i** Write down the advantages and disadvantages of transfer moulding. **04**
 - ii** Define the given terms: (i) Core (ii) Cavity (iii) Parting line **03**

OR

- Q.4 (a)** Discuss the types of transfer moulding process. **07**
- Q.4 (b)** Answer the following
- i** Write down the advantages and disadvantages of compression moulding process. **04**
- ii** Define the given terms: (i) Sprue (ii) Runner (iii) Gate **03**
- Q.5 (a)** Answer the following
- i** Write down the causes and remedies for sponging. **03**
- ii** Explain the injection moulding process. Also differentiate the rubber injection moulding machine and plastics injection moulding machine. **04**
- Q.5 (b)** Discuss the major components of press with their functions. **07**
- OR**
- Q.5 (a)** Answer the following
- i** Write down the causes and remedies for flow cracks. **03**
- ii** Explain the reciprocating type injection unit of injection moulding machine. **04**
- Q.5 (b)** State hydraulic principle. Discuss in detail about the classification of hydraulic press. **07**
