

TED (10) 3090  
(Revision - 2010)

Reg. No. ....  
Signature : .....

Fourth Semester Diploma Examination in Polymer Technology - March, 2012

RUBBER PRODUCTS

(Maximum Marks : 100)

(Time : 3 Hours)

**PART – A**

(Maximum Marks : 10)

- I. Answer the following questions in one or two sentences: Marks
1. Write suitable methods for the production of the following rubber products.
    - i) Sponge
    - ii) Rubber tube
    - iii) Hospital sheetings
    - iv) I.B caps
  2. What are blowing agents? Write two examples.
  3. What is profile calendaring? Give one example of product produced by this process.
  4. What is RFL? Write its composition.
  5. Write the classification of belts according to their construction.

[5 x 2 = 10]

**PART – B**

(Maximum marks : 30)

- II. Answer any five questions.
1. a. State the principle of creating cellular structure in rubber with an example. (3)  
b. List any 6 finishing operations carried out in rubber product industries. (3)
  2. a. What are hard vulcanized rubber products? Write two examples. (3)  
b. Distinguish Hawaii and MC Soles. (3)
  3. a. Distinguish supported sheets and unsupported sheets with examples. (3)  
b. Design a typical formulation for rubber tubing. (3)
  4. a. List the special purpose foot wears and their application. (3)  
b. Describe the moulding process of play ball. (3)
  5. a. Describe the process of rubber lining. (3)  
b. State the principle and chemistry involved in the production of rubber to metal bonded products. (3)
  6. a. Describe the 'rotocuring' methods for curing of conveyor belts. (3)  
b. Describe the building of 'V' belts. (3)
  7. a. Illustrate the construction features of power cables. (3)  
b. Describe mandrel curing method for the production of hoses. (3)

[5 x 6 = 30]

**PART – C**

(Maximum Marks : 60)

(Answer one full question from each unit)

UNIT – I

- III. a. Explain the compound design, compounding and production of MC Sole. (8)  
b. Explain the manufacture of 'Hot water bag' with a typical formulation. (7)
- OR
- IV. a. Explain the compound design, compounding and production of Hawaii sole. (8)  
b. Explain the manufacture of 'Transparent Teats' with a typical formulations. (7)

UNIT – II

- V. a. Explain the manufacture of 'Rubber Foot wears' by direct moulding process with necessary diagrams. (8)  
b. Explain the manufacture of 'Tennis Ball' with typical formulations. (7)

OR

- VI. a. Explain the manufacture of automobile channels with a typical formulation justify your selection of ingredients. (8)  
b. Describe the compound design and manufacture of an oil seal. Justify your selection of ingredients. (7)

UNIT – III

- VII. a. Describe the process of spreading with a line diagram and a formulation. (6)  
b. Explain the adhesive treatment for nylon 6,6 with line diagram and suitable formulation. (6)  
c. Describe the 'Ebonite bonding' technique for rubber to metal bonded products. (3)

OR

- VIII. a. Explain the manufacture of 'Rice polishers' with a typical formulation. (6)  
b. Design a suitable rubber compound for spreading operation and justify your selection of ingredients. (6)  
c. List the major steps in rubber to metal bonding process. (3)

UNIT – IV

- IX. a. Explain the manufacture of petrol hose with typical formulation. (6)  
b. Describe the manufacturing process of cables with required formulations. (6)  
c. List the specification tests for cables. (3)

OR

- X. a. Explain the manufacture of "Conveyor belts" with typical formulations. (6)  
b. Explain braided hose, knit hose and spiral reinforced hose. (6)  
c. List the components of a 'V' belts. Design a formulation for anyone component. (3)

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