

**B.Sc. FOOTWEAR TECHNOLOGY (BSCFWT)**

**Term-End Examination**

**December, 2017**

00401

**BFWE-044 : POLYMER TECHNOLOGY**

*Time : 3 hours*

*Maximum Marks : 70*

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**Note :** Answer any *seven* questions. All questions carry equal marks.

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1. Explain the extraction of natural rubber from trees. Mention the International and Indian nomenclature and grading systems used for natural rubber. 10
2. What do you understand by vulcanization of rubber ? Discuss the various types of vulcanized rubber used in footwear. 10
3. Describe in brief, the properties of rubber and also discuss the various ingredients added to rubber to make rubber compounds usable for shoe soles. 10
4. Differentiate between Thermosetting and Thermoplastic polymers. Discuss thermosetting and thermoplastic polymers used in shoe sole manufacturing. 10

5. Explain the production process of rubber sole with the help of a flow chart. Write the sequence-wise operation details of the production process. 10
6. Differentiate between Compression Moulding Process and Injection Moulding Process. 10
7. Explain the production process of PVC soles with the help of a flow chart. State various properties of PVC suitable as soling material. 10
8. What materials are used in sports shoes manufacturing? What are their purposes? 10
9. Name different types of shoe construction. Explain any two types. 10
10. Write short notes on the following :  $4 \times 2 \frac{1}{2} = 10$
- (a) U-Binding
  - (b) NBR Rubber
  - (c) Reinforcing Fillers
  - (d) Process Aids
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