

Printed Pages: 02

Sub Code: NPL 603

Paper Id:

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**B TECH  
(SEM VI) THEORY EXAMINATION 2017-18  
ADDITIVES & COMPOUNDING**

*Time: 3 Hours*

*Total Marks: 100*

**Note:** 1. Attempt all Sections. If require any missing data; then choose suitably.  
2. Any special paper specific instruction.

**SECTION A**

**1. Attempt all questions in brief.**

**2 X 10 = 20**

- a) Describe Anti slip agents
- b) Explain Dispersive Mixing
- c) Describe Antistatic agent
- d) Explain Carbon black filler
- e) Give Example of two Internal Lubricants
- f) Define Coupling agent
- g) Explain Plasticizers
- h) Describe Impact Modifier
- i) Explain Toughening Agent
- j) Explain Reinforcing Agent

**SECTION B**

**2. Attempt any three parts of the following:**

**10 X 3 = 30**

- a) Give Classification of different additives used in various plastic materials.
- b) Explain Role of UV Absorber? Discuss the functions and application of UV absorber.
- c) Discuss in detail compounding of PVC material and give various applications of PVC compounded materials?
- d) Explain continuous mixing process and discuss different continuous mixing devices for compounding.
- e) Describe Processing aids and their types with applications.

**SECTION C**

**3. Attempt any One part of the following:**

**10 X 1 = 10**

- a) Discuss the selection criteria of additives for plastics.
- b) What are anti-oxidants? And also discuss its types with examples.

**4. Attempt any One part of the following:**

**10 X 1 = 10**

- a) What is function of flame retardant? Discuss various types of flame retardants with examples.
- b) Describe Batch

- 5. Attempt any *One* part of the following:** **10 X 1 = 10**
- a) Explain Thermal stabilizers and their applications
  - b) Explain the function of Banbury Mixer with sketch diagram.
- 6. Attempt any *One* part of the following:** **10 X 1 = 10**
- a) Discuss the role of colorants and explain advantages and disadvantages of pigments and dyes.
  - b) What is master batch? Give advantages and applications of Master batch for polymers.
- 7. Attempt any *One* part of the following:** **10 X 1 = 10**
- a) What are blowing agents? Explain different types of blowing agents used in foam Industry.
  - b) Describe the mechanism of high speed intensive mixers with sketch diagram.