

SIXTH SEMESTER DIPLOMA EXAMINATION IN POLYMER TECHNOLOGY—
MARCH, 2013

QUALITY ASSURANCE AND TESTING

[Time : 3 hours

(Maximum marks : 100)

PART—A

(Maximum marks : 10)

Marks

I Answer all questions in one or two sentences. Each question carries 2 marks.

1. Distinguish between brittleness temperature and melting point of polymers.
2. Define PRI. What is the significance of PRI in raw rubbers ?
3. Define VFA number and KOH number.
4. Differentiate between compression set and tension set.
5. Define the hardness of latex foam. How is it prepared ?

(5×2=10)

PART—B

(Maximum marks : 30)

II Answer *any five* of the following questions. Each question carries 6 marks.

1. (a) Explain the importance of quality control in polymer industry. 3
- (b) How is arc resistance of plastic products determined ? 3
2. (a) What is the importance of raw material testing in rubber compounding ? 3
- (b) How is percentage purity of MBT determined ? 3
3. (a) What is the significance and principle of dirt content determination ? 3
- (b) Give the specification values of ISN. 3
4. (a) Write the procedure and principle for the determination of ash content. 3
- (b) What is sludge content of latex ? Give its significance. 3
5. (a) Define Resilience and tear strength. 3
- (b) List out the various testing equipment used for processability tests. 3
6. Illustrate the cure graphs obtained with ODR and Mooney viscometer. 6
7. (a) List the specification tests for Hawaii soles. 3
- (b) State the importance of product testing. 3

(5×6=30)

[P.T.O.]

PART—C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each question carries 15 marks.)

UNIT—I

- III (a) Explain the particle size determination of carbon black by iodine adsorption method. Give its significance and principle. 8
- (b) Describe various test method employed to study thermal properties of polymers. 7

OR

- IV (a) Explain various test method employed to study electrical properties of polymers. 8
- (b) Explain the determination of percentage purity of DPG and ZnO. 7

UNIT—II

- V (a) Explain the significance and procedure for the determination of Nitrogen content of NR. 8
- (b) Write the technical specification values of concentrated latex as per BIS. 7

OR

- VI (a) Explain the significance and procedure for the determination of MST and viscosity of latex. 8
- (b) Explain the procedure, principle and significance for the determination of alkalinity. 7

UNIT—III

- VII (a) Describe the test method for the determination of TS, M300& EB% of rubber viscosity. 8
- (b) Explain the method for the determination of abrasion resistance and abrasion resistance index. 7

OR

- VIII (a) Describe the test method for the determination of Tear strength. Give its significance. 8
- (b) Write the significance, principle and procedure for the determination of flex cracking failure. 7

UNIT—IV

- IX (a) List out various signification tests of Latex foam. Explain any two test methods. 8
- (b) Write the specification values for surgical gloves with a typical figure. 7

OR

- X (a) List out various specification tests of MC sole. Explain any two test method. 8
- (b) Write the various specification values for electricians gloves. 7