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6. Write the short not on :

(a) Smoke Density

(b) ASTM

(d) Tensile strength

(5+5+5)

(100)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 1816

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Unique Paper Code : 6092012401

Name of the Paper : Polymer Testing and specifications

Name of the Course : **B.Sc. (H) (Polymer Science)**
UGCF

Semester : IV

Duration : 2 Hours

Maximum Marks : 60

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt **four** questions in all. Question No. 1 is compulsory. Draw neat and labeled diagram where ever necessary. Log table and simple calculator are allowed.

1. (a) Comment on the use and importance of calibration method.

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(b) Explain the method for measurement of heat conductivity test in brief.

(c) Explain short term properties with examples.

(d) Discuss the use of opacity tester in polymer testing.

(e) Describe the oil ageing of a polymer sample.

(5×3=15)

2. (a) Write a note on refractive index.

(b) Calculate the tensile strength and elongation at break % of a polymer sheet. If breaking load is 10 Kg, cross sectional area 10 mm^2 and breaking elongation 50 % of its original length.

(c) Discuss significance and use of stress strain curve of a plastic materials. (5+5+5)

3. (a) Explain the standard used in the working of "universal testing machine" (UTM) along with application in polymer testing.

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(b) Explain the significance and factors effecting the haze properties of plastics. (10+5)

4. (a) What is LOI? Describe method for its measurement.

(b) Describe the Bent strip procedure for measurement of ESCRA.

(c) Discuss in detail the measuring procedure of four point flexural test. (5+5+5)

5. (a) Explain the ASTM specifications for abrasion resistance of plastic.

(b) Describe the effect of crystallinity on the optical properties of polymer.

(c) Explain the significance of oxygen transmission rate in plastic testing along with its measuring procedure. (5+5+5)

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