

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-VIII EXAMINATION – SUMMER 2016

Subject Code:183604

Date:16/05/2016

Subject Name:New Technologies & Products (Department Elective- IX)

Time:10:30 AM to 01:00 PM

Total Marks: 70

Instructions:

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

Q.1 (a) Explain the following terms: 7

(i) Hue (ii) Saturation (iii) Lightness

(b) Explain in brief hydrogenation technology in Dyestuff & Pigment industry

Q.2 (a) Explain the concept of pigment dispersion. 7

(b) Write a brief note on : 7

(i) Pigment used in display (ii) Pigment used in paints

OR

(b) Discuss the following properties of the pigments are important in selecting a pigment for any particular products. 7

(i) Particle size distribution (ii) Hiding power

OR

Q.3 (a) Explain in brief the process optimization. 7

(b) Describe the methods of manufacturing of copper phthalocyanine pigments with suitable reaction scheme. 7

OR

Q.3 (a) Write in brief anticorrosive pigments with its mechanism. 7

(b) Write in brief the statistical quality control techniques for dyestuff industries. 7

Q.4 (a) Write a note on : (i) High performance pigment (ii) Pigment used in food 7

(b) How do you control the waste minimization for design of reactor? 7

OR

Q.4 (a) Explain the optical properties of following: 7

(i) Absorption pigments (ii) Effect pigments (iii) Natural pearls 7

(b) Discuss the various environmental perspectives of reactors which are the most important unit operation in a chemical process with reference to the degree of conversion of feed to desired products. 7

Q.5 (a) Discuss the following parameters required for design of reactor. 7

(i) Volume of reactor (ii) Flow rate (iii) Concentration of feed 7

(b) Define the flop index & Discuss the model used to explain the flake orientation. 7

OR

Q.5 (a) Explain the following method used for production of pigment: 7

(i) Crushing (ii) Calcination (iii) Drying

(b) Explain the pearl effect pigments with variable controlling pearl effect. 7
