

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VII (NEW) EXAMINATION – WINTER 2017****Subject Code: 2173613****Date: 02/11/2017****Subject Name: Specialty Pigments & Recent development in Pigment Technology (Department Elective - VII)****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.

MARKS

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|------------|---|-----------|
| Q.1 | (a) Define the following: | 03 |
| | (i) Flop index (ii) Colour flop (iii) Salinity | |
| | (b) Discuss the term refractive materials with respect to specialty pigments. | 04 |
| | (c) What are the pearl effect pigments? Discuss the variables controlling the pearl effect. | 07 |
| Q.2 | (a) Explain the following terms: | 03 |
| | (i) Cluster (ii) Colloids (iii) Nanoparticle | |
| | (b) Write a note on: Sacrificial Pigments | 04 |
| | (c) Explain the commercial processes of manufacturing of Titanium dioxide- Mica based effect pigments. | 07 |
| | OR | |
| | (c) Explain the behavior of a biocide-based antifouling system exposed to sea water with the help of schematic diagram. | 07 |
| Q.3 | (a) How do you differentiate active and barrier pigments? | 03 |
| | (b) Discuss the two types of underwater antifouling coatings. | 04 |
| | (c) Explain the Paint reconditioner & thinning mixer with its diagrammatical representation. | 07 |
| | OR | |
| Q.3 | (a) How does the Nanoscale materials are divided into three categories. | 03 |
| | (b) Explain the following terms with respect to antifouling coatings: | 04 |
| | (i) Temperature (ii) P ^H | |
| | (c) Explain the following terms: | 07 |
| | (i) Refractive indices of material (ii) Lightness flop | |
| Q.4 | (a) Write a note on: Aluminium flake pigments. | 03 |
| | (b) Discuss the properties of the Nanomaterials. | 04 |
| | (c) Explain with schematic diagram of the basic effect of anticorrosive coatings and inhibitive pigments in controlling corrosion of a metallic substrate. | 07 |
| | OR | |
| Q.4 | (a) How does the anticorrosive pigments affected on performance of protective coatings? | 03 |
| | (b) Explain the model used to explain the flake orientation during film formation. | 04 |
| | (c) What is meant by Pigment tinters? Discuss the formulation of pigment tinters with role of each ingredient. | 07 |

- Q.5** (a) Write a note on: Filling **03**
(b) Discuss about ultrasound dispersion. **04**
(c) Explain the different types of the strainers with its diagram. **07**
- OR**
- Q.5** (a) Write a note on: Pigment tinters **03**
(b) Discuss the cavitation mechanism with the suitable examples. **04**
(c) Explain the micaceous iron oxide pigment in detail. **07**
