

SEAT No. _____

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SARDAR PATEL UNIVERSITY

M.Sc. 2nd Semester (Surface Coating Technology) (CBCS) Examination

Thursday, April 12th, 2018

Time: 10:00 am to 01:00 pm

Course No.: PS02CSCT22

Subject: Chemistry & Technology of Organic Pigments, High Performance Pigment, Additives & Solvents

Total Marks: 70

- N.B. (1) Marks allotted to the question are on its RHS
(2) Illustrate your answers wherever necessary with the help of neat sketches & chemical equations

Q.1 Choose the correct answer from the followings:

- Q.1.1 Pigment Flocculation can be controlled by 1
(a) Polymeric Additive (b) Drier (c) Silicone Additive (d) MEK Oxime
- Q.1.2 Pick the odd one with on the basis of paint manufacturing 1
(a) Dispersing Agent (b) Wetting Agent (c) Drier (d) Thickener
- Q.1.3 'Toludine Red' is prepared from coupling agent 1
(a) Acetoacetylarnide (b) Acetodiactetaryarnide (c) Acetoacetylarnine (d) Beta naphthol
- Q.1.4 Which is not act as anti-skinning agent? 1
(a) MEK Oxime (b) Butraldoxime (c) methyl hexamine (d) iso propyl phenol
- Q.1.5 Among following which solvent has lowest solvency power 1
(a) True (b) Diluent (c) Latent (d) Active
- Q.1.6 Which will not act as plasticizers 1
(a) Dibutyl sebacate (b) Dioctyl adipate (c) Chlorinated Biphenyls (d) Tributyl octate
- Q.1.7 _____ is an Auxiliary Drier. 1
(a) Iron (b) Manganese (c) Zinc (d) Vanadium
- Q.1.8 Silicone additive with molecular weight ($X > 1400$) is used as _____ additive. 1
(a) Flow control (b) Slip Agent (c) Defoamer (d) Hammer finish

Q.2 Answer Any Seven of the following: 14

- Aniline point and TDR of solvent.
- Explain: Why Gloss Enamel made with toluidine red tends to develop slight Haze.
- What are the advantages of slow evaporation rate solvent?
- Isoindolinone and isoindoline pigment.
- Write about "Loss of Dry".
- 600 gms of resin solution of 60 % solid content, how much (in gms) solvent required (add) to Convert it in to 50 % resin solution?

[P.T.O.]

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- g) Write about Lead metal as drier.
- h) What is Solvent Balance? What happens if blend of solvent is not balanced?
- i) Explain phenols as anti-skinning agent.

- Q.3 a Write in details of Pthalocynine Blue & Green Pigment. 6
- Q.3 b Write in brief about Natural diazo pigments. Give in details about Arylamide yellow and Toluidine Red with reaction. 6

Or

- Q.3 b Discuss various properties requirements of Organic Pigments 6
- Q.4 a Give classification of solvent write in details of hydrocarbon solvent. Write about Specification characteristics of solvent 6
- Q.4 b Write in details about theory of solvency. Write specification characteristics of solvents 6

Or

- Q.4 b Why driers are not used in Latex Paints? Give detailed composition of Drier. Give accounts of Basic requirement of Drier. 6
- Q.5 a Write all three manufacture process of drier in details. Explain the drying mechanism of drier in details 6
- Q.5 b Why Wetting & Dispersion is important in pigmented coatings? Explain in brief characteristics of W&D agent used in coatings. What is controlled Flocculation 6

Or

- Q.5 b Explain in detail 6
- (1) Intercoat adhesion with suitable figure.
 - (2) Foam stabilizing & destabilizing effects with diagram

- Q.6 a What are important properties of 'Plasticizers', Give its classifications. 6
- Q.6 b Give the brief account of Metal Complex and Fluorescent dyestuff pigments 6

Or

- Q.6 b Chemistry of silicon additive as 'surface additive'. 6

X

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