CVM UNIVERSITY

M.Sc. (Surface Coating Technology) Semester- I Examination -2021

Wednesday 24th February -2021

10:00 AM to 12:00 PM

101470102: *Chemistry & Technology of Inorganic Pigments*

Total Marks 60

Note: (1) Attempt all questions.
(2) Figures to the right indicates marks.

Q: 1. (a) Answers the following multiple choice questions. **8**

1. Which is not a form of natural iron oxide?
   (a) Raw Sienna (b) Burnt Umbers (c) Turquois (d) Raw Umbers
2. Synthetic iron oxides were produced as a byproduct of _____.
   (a) Benzene (b) Aniline (c) Nitrobenzene (d) Toluene
3. Lead chromate improvements can be obtained by surface treatment with encapsulation with _____ oxide.
   (a) Antimony (b) lead sulfate (c) iron blue (d) Lithium
4. Chrome iron green (Pigment Green 15) also known as _____
   (a) Chromium oxide green (b) Cadmium green (c) Brunswick green (d) Phthalo green
5. Which pigment associate with 'can-fading' properties?
   (a) Chrome iron green (b) Zinc Oxide (c) Iron Blue (d) Ultramarine blue
6. Epoxy primer containing _____are the standard system used in air craft Industries.
   (a) Zinc Borate (b) Strontium Chromate
   (c) Zinc Potassium chromate (d) Zinc Tetroxychromate
7. Among following coating which one has highest PVC?
   (a) Distemper (b) Wood Primer (c) Clear Varnish (d) Synthetic Enamel
8. The rate of corrosion is most rapid with_____
   (a) Acidic Solution (b) Alkaline Solution (c) Neutral Solution (d) None

Q: 1. (b) Answers the following (Fill in the blanks and True/False) **8**

1. To compare the colour of carbon black with standards _____instrument used.
2. Specific gravity of pigment is measured by _____.
3. Mixing of Yellow and magenta will gives _____ colour.
4. Lithopone is a Composite of zinc sulphide co precipitated with _____sulphide.
5. Aluminum flake pigments have exceptionally less hiding power. (True / False)
6. Graphite Black is a type of Black Pigment (True / False)
7. Asbestine talc has hydrophobic nature makes it of great applications such as cosmetics and Toiletries. (True / False)
8. The hiding power of a pigment is not affected by the degree of dispersion of pigment. (True / False)

Q 2	Attempt Any **Six** of the Following.	**12**
1.	What is a sacrificial coating?	
2.	Why ultra-marine blue is popular as "Laundry Blue"?	
3.	Write applications of Bronze pigments.	
4.	Explain reducing strength and tinting strength.	
5.	Why aluminum paints should be supplied in separate container?	
6.	What is Leafing property of aluminum pigment?	
7.	What is 'tie coat' recommended on clean steel?	
8.	Why lamp black uses as tinting black?	
Q 3	Explain in brief about "kaolin" and calcined china clay giving composition. How calcined Kaolin uses as opacifying extenders?	**8**
	OR	
Q 3	Write in detail about manufacture of TiO_2 by Chloride process. How it is advantageous compare to sulphate process.	**8**
Q 4	Explain various properties of pigment like optical data, particle shape, Dispersibility, Oil Absorption Value (OA)	**8**
	OR	
Q 4	What is corrosion? Explain different mechanism for protecting the metal from corrosion using coatings.	**8**
Q 5	Enlist different silica extenders. Give their composition. Explain in brief about Pyrogenic, Aerogels and hydrogels silica.	**8**
	OR	
Q 5	Write a brief note on all grades of carbon black pigment	**8**
Q 6	**(a)** Write about Phosphates and Silicates as Anticorrosive Pigments.	**4**
	(b) Write about Iron blue and ultramarine blue as inorganic Pigments.	**4**
	OR	
Q 6	List the method of color quantification. Explain CIE system in details.	**8**