



17343

15162

3 Hours / 100 Marks

Seat No.

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- Instructions :**
- (1) *All questions are compulsory.*
 - (2) *Answer **each** next main question on a **new** page.*
 - (3) *Figures to the **right** indicate **full** marks. Abbreviations used, convey usual meaning.*
 - (4) *Assume suitable data, if **necessary**.*

Marks

1. Answer any five :

(5×4 = 20)

- a) Explain with examples :
 - i) primary colour
 - ii) complementary colour
- b) Explain mechanism of 'dye fixing'. Name fixatives used.
- c) Explain meaning of :
 - i) 'fast' dye
 - ii) 'substantivity' of dye
- d) Write classification of dyes, based on the structure.
- e) Name a polycyclic pigment, containing metal. State meaning of :
 - i) PB 15:1
 - ii) PB 15:2
 - iii) PB 15:3
 - iv) PB 15:4
- f) Write chemical name and raw materials used in preparation of :
 - i) H-acid
 - ii) metanilic acid
- g) What are A₃₀ dyes ? Name are such dye and raw materials, used in its preparation.

2. Answer any two :

(2×8 = 16)

- a) Explain, with examples :
 - i) chromophores
 - ii) auxochromes
 - iii) chromogens
- b) i) Name methods of application of dyes. 2
ii) Describe any one method of dye application. 6
- c) i) What are DPM and TPM dyes ? 2
ii) Indicate with reactions and reaction conditions, preparation of a nitro dye. 6

P.T.O.



Marks

3. Answer **any two** : (2×8 = 16)
- a) i) Define : 2
 - 1) dyes
 - 2) intermediates
 - ii) Describe status of Indian dye industry. 6
 - b) Explain any four factors, affecting absorption of light.
 - c) Explain with examples, classification of inorganic pigments, based on colour.
4. Answer **any two** : (2×8 = 16)
- a) Explain, modern theory of colour and chemical constitution.
 - b) i) How is 'peri' acid prepared ? Explain with reactions. 6
 - ii) Indicate with reactions only, preparation of a dye, starting from the intermediate. 2
 - c) Describe preparation of 'HE brand' reactive dyes.
5. Answer **any two** : (2×8 = 16)
- a) i) Define frequency and wavelength. 2
 - ii) Represent on a scale
 - uv -, IR - and, visible range. 2
 - iii) Describe 'additive' - colour mixing. 4
 - b) i) Define colour index. 2
 - ii) Explain its use and significance.
 - c) i) How is sulphanilic acid prepared ? Explain with reactions. 6
 - ii) Write chemical name and show structural difference between J-acid and gamma-acid.
6. Answer **any four** : (4×4 = 16)
- a) Name products obtained on destructive distillation of coal tar. State their use in dyestuff manufacturing.
 - b) Define diffusion. How is rate of diffusion of a dye in cellulose, determined ?
 - c) Write structural factors of a dye, which contribute to good heat fastness.
 - d) Distinguish between : fragments and dyes.
 - e) Subclassify 'vat' dyes', giving examples.
 - f) What are :
 - i) Cold brand reactive dyes.
 - ii) ME brand reactive dyes.
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