

Important questions.

What are Dyes? How does a dye exhibit colour?

1. What are the conditions for a substance to be termed as dye?
2. Discuss molecular orbital theory of colour which relates it to the constitution of the organic compound.
3. Explain the electronic concept of colour and constitution.
4. What are azo dyes? How is Congo red synthesised? What is its main use?
5. Describe the synthesis and use of the following dyes:
 - a) Methyl orange
 - b) Congo red
 - c) Malachite green
 - d) Crystal violet
 - e) Phenolphthalein
 - f) Fluorescein
 - g) Alizarin
 - h) Indigo

Teacher's Signature _____

6. What are triphenyl methane dye? Give the synthesis and use of malachite green and crystal violet.
7. How is phenolphthalein synthesised? Why it is colourless in acidic medium but pink in alkaline medium?
8. Discuss the colour change with pH in the following:
 - (a) Crystal violet
 - (b) Phenolphthalein
9. How would you synthesise:
 - i) Alizarin from phthalic anhydride
 - ii) Indigo from aniline
 - iii) Indigo from anthranilic acid
 - iv) Fluorescein from resorcinol.
10. Write down the name and structure of one member of the each class of the following:
 - i) triphenyl methane dye
 - ii) phthalein dye
 - iii) Vat dye
11. What do you mean by a leuco compound and a colour base?
12. Discuss the main points of difference between V.B. Theory and M.O. Theory of colour and constitution.
13. Define chromophore and auxochromes. Discuss their effect on the colour of the substance.

Teacher's Signature : _____

14. Discuss classification of dyes based upon their applications.
15. ~~What are Uranine and tetrabromofluorescein?~~
16. How Uranine and tetrabromofluorescein are obtained from fluorescein?
17. Explain the following:
a) Vat dye b) mordant dye c) direct dye
18. Differentiate between mordant and vat dyes.
19. What is indigotin white? Write its structure.
20. What are mordant dyes, giving suitable examples; Explain how colour is dependent on mordant used.
- 21) Explain Hypsochromic and Bathochromic effects.