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(FOR THE CANDIDATES ADMITTED DURING THE ACADEMIC YEAR 2020-21 ONLY) **SUBJECT CODE 20UCY510** **REG.NO.**

N.G.M.COLLEGE (AUTONOMOUS) : POLLACHI

END-OF-SEMESTER EXAMINATIONS : DECEMBER – 2022

B.Sc. CHEMISTRY **MAXIMUM MARKS: 70**

V SEMESTER **TIME : 3 HOURS**

PART - III
DYE CHEMISTRY

SECTION – A (10 X 1 = 10 MARKS)

ANSWER THE FOLLOWING QUESTIONS.
MULTIPLE CHOICE QUESTIONS. **(K1)**

1. Range of visible light extends between.....
   (a) 40 nm – 100 nm (b) 500 nm– 750 nm
   (c) 100 nm– 400 nm (d) 400 nm– 750 nm

2. Which of the following is a coloured compound.....
   (a) Phenol (b) Aniline
   (c) Nitrobenzene (d) All the above

3. Name the chromophore present in Malachite green.....
   (a) $–NMe_2$ (b) Benzenoid group
   (c) Quinonoid group (d) Triphenyl

4. Of the following, which reaction produce phenolphthalein ……..
   (a) Phenol and Aniline (a) Phenol and Aniline
   (c) Phenol and Resorcinol (c) Phenol and Resorcinol

5. Which one of the following is a colourant?
   (a) Eosin (b) Erythrosin
   (c) Alizarin (d) Mercurochrome

ANSWER THE FOLLOWING IN ONE (OR) TWO SENTENCES. **(K2)**

6. Define complimentary colours.
7. Name the substituent that imparts a basic character to the dye with an a example.
8. Why does phenolphthalein produce a pink colour in alkali medium?
9. What are pigments?
10. Give an example of food colours. Why is it used?

SECTION – B (5 x 4 =20 MARKS)

ANSWER EITHER (a) OR (b) IN EACH OF THE FOLLOWING QUESTIONS

K3

11. a. Account for the Otto-Witt theory.

(OR)

b. With examples, briefly examine the Quinonoid theory.

12. a. Account for the effect of substituents on diazotization.

(OR)

b. How is Eriochrome Black T synthesised and where is it used

13. a. Explain the preparation and uses of Auramine O

(OR)

b. Narrate the method of preparation and uses of Malachite green.

14. a. To which class of dyes does Alizarin Blue belong to? How is it prepared?

(OR)

b. Give the requirements of organic pigments.

15. a. Briefly discuss Mordant dyeing.

(OR)

b. Give a brief account of cotton fibres. Why are cidic / basic dyes not suitable for dyeing cotton fibres.

SECTION - C (4 x 10 =40 MARKS)

ANSWER ANY FOUR OUT OF SIX QUESTION

16th QUESTION I COMPULSORYAND ANSWER ANY THREE QUESTIONS FROM Qn.No . 17 to 21 (K4/K5)

16. Explain - (i) Bathochromic (ii) Hyperchromic (iii) Hypochromic (iv) Hypsochromic shifts.

17. Explain the various transitions involved in M.O theory.

18. Using benzidine as starting component, how is Congo red synthesised?

19. Elaborate a methodology for the synthesis of Indigotin.

20. Outline the scheme for the conversion of Anthracene to alizarin. Give its uses.

21. Justify the Dye –fibre attachment through (i) Hydrogen bonding. (ii) Covalent bonding.

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ETHICAL PAPER