Instructions:
1. Attempt any Six questions out of which **Q.1 is Compulsory**.
2. Answer each next question on new page.
3. Figures to the right indicate full marks.
4. Illustrate your answers with neat sketches & flow charts wherever necessary.
5. Use of non-programmable electronic pocket calculator is permissible.
6. Mobile and any other communication devices are not allowed in the Examination hall.
7. Assume suitable data wherever necessary.

Q.1 Attempt any Five

1. Explain the importance of MLR in the coloration of textiles.
2. Draw a neat labeled diagram of cabinet hank dyeing machine.
3. Write the dyeing procedure of solubilized vat dyes on cotton.
4. Explain the working principle of a hydro extractor with the help of a neat diagram.
5. Demonstrate With general reaction, the different types of dye-fibre interaction.
6. Illustrate with one example each, classification of colouring matter.
7. Write two advantages and two limitations of Natural dyes.
8. 600 kg of cotton fabric is to be dyed with reactive dye for 2.9% shade keeping MLR 1:9 & using 50 gpl of common salt as exhausting agent and 15 gpl soda as fixing agent. If the stock dye solution concentration = 0.5%, Stock salt concentration = 10% i.e. 100 gpl & Stock soda concentration = 10% i.e. 100 gpl, Calculate the amount of dye solution, salt solution, soda solution & water required for dyeing.

Q.2

1. Draw a neat labeled diagram of a jet dyeing machine and write its working principle. What are the possible dyeing defects observed in the dyed fabric due to jet dyeing machine?
2. Write a detailed note on the problems faced in processing of textiles due to water impurities.

Q.3

1. Enlist and explain the functions of various auxiliaries used in dyeing of textiles?
2. Write a note on the industrial techniques of application of reactive dyes.
Q.4
1. Why are vat dyes so called? Write the dyeing procedure of vat dyes and comment on the different methods of dissolution of vat dyes.
2. Write a detailed note on the dyeing of nylon cellulosic and nylon wool blends for achieving solid shade by one bath method.

Q.5
1. What is the dye-fibre interaction between basic dyes and silk fibre? Write the properties of basic dyes. Explain with reactions, the mechanism of dyeing basic dyes on cotton fibres.
2. Explain in detail, the reasons for blending. Explain the novel colour effects obtained in blend dyeing.

Q.6
1. Why are direct dyes so called? Write the sub-classification of direct dyes. Write a note on the various after-treatments given to direct dyed fabrics.
2. Write the mechanism of dyeing of polyester with disperse dyes. Explain the effect of heat setting on dyeing of polyester.

Q.7
1. What are Acid dyes? Write four properties of acid dyes. Write the sub-classification of acid dyes? Write two advantages and two limitations of sulphur dyes.
2. Enlist the dyes used for dyeing various colour effects on polyester cotton blends? Enlist the machineries used for dyeing?

Q.8
1. Explain the distinct steps involved in the dyeing of sulphur dyes. Explain the bronziness and sulphur tendering defects encountered due to dyeing with sulphur dyes.
2. Write a detailed note on the precautions to be taken for effective dyeing of garments.