

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE – SEMESTER V • EXAMINATION – WINTER - 2012****Subject code: 152801****Date: 11-01-2013****Subject Name: Chemistry of Intermediates and dyes****Time: 02:30 pm to 05:00 pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Answer the following objectives: **07**
1. State some primaries for dye intermediates.
  2. Differentiate 'unit process' & 'unit operation'.
  3. What is oleum?
  4. Give structure of H-acid.
  5. Nitration unit process introduces which group into parent compound? What are its properties?
  6. By which important unit process, nitro benzene is converted into aniline? In the dye Indanthrene Golden yellow GK & Celedon Green BN, what does the suffix letter 'K' & 'N' indicate?
- (b) Enlist different unit processes. What is the importance of mixed acids during sulphonation? Explain sulphonation of benzene & Toluene. **07**
- Q.2** (a) Give the definition of dye. Enlist Requisites of a True dye. **07**
- (b) Write a note on Witt's theory in detail. **07**
- OR**
- (b) Write a note on Armstrong's theory in detail. **07**
- Q.3** Explain with all technical details following unit processes. **14**
- (a) Halogenation
  - (b) Oxidation
- OR**
- Q.3** Explain orientation rules in benzene series. **14**
- Q.4** Discuss in detail about classification of dyes according to application. **14**
- OR**
- Q.4** Describe in detail about Modern Theories of Colour and Constitution. **14**
- Q.5** Attempt any TWO: **14**
- (1) Non-Textile uses of dyes.
  - (2) Fractional Distillation of coal-tar.
  - (3) Bathochromic and Hypsochromic effects
  - (4) Colour and chemical constitution.

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