

Register Number:.....



**KUMARAGURU**  
college of technology  
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**GENERAL INSTRUCTIONS TO THE CANDIDATES**

1. Candidates are instructed to answer the questions as per Bloom's Taxonomy knowledge level (K<sub>1</sub> to K<sub>6</sub>)
2. Candidates are strictly instructed not to write anything in the question paper other than their roll number.
3. Candidates should search their pockets, desks and benches and handover to the Hall Superintendent/ Invigilator if any paper, book or note which they may find therein as soon as they enter the examination hall.
4. Candidates are not permitted to bring electronic watches with memory, laptop computers, personal systems, walkie-talkie sets, paging devices, mobile phones, cameras, recording systems or any other gadget / device /object that would be of unfair assistance to him / her.
5. Corrective measures as per KCT examination policies will be imposed for malpractice in the hall like copying from any papers, books or notes and attempting to elicit the answer from neighbours.

**B.TECH DEGREE EXAMINATIONS: JUNE 2015**

(Regulation 2014)

Second Semester

**U14CHT204: CHEMISTRY FOR TEXTILES**

(Common to FT & TXT)

**Time: Three Hours**

**Maximum Marks: 100**

**Answer all the Questions:-**

**PART A (10 x 1 = 10 Marks)**

1. Tannin and agar-agar are used for
  - a) Phosphate conditioning
  - c) Colloidal conditioning

- b) Carbonate conditioning
- d) Calgon conditioning

[K<sub>1</sub>]



- |  |  |  |
|--|--|--|
| <p style="text-align: center;">correct explanation of A</p> <p>c) A is true but R is false</p> | <p style="text-align: center;">correct explanation of A</p> <p>d) A is false but R is true</p> |  |
|--|--|--|
8. The dye obtained from madder root (*Rubia tinctoria*) is [K<sub>1</sub>]
- |               |                |
|---------------|----------------|
| a) Indigotin  | b) Alizarin    |
| c) Acriflavin | d) Indanthrene |
9. Consider the following features of addition polymerization. [K<sub>2</sub>]
1. Double bond provides required bonding sites
  2. No elimination of byproducts
  3. Addition of monomers takes place slowly
  4. Polymerization proceeds through intermolecular condensation
- Which of these features are correct?
- |         |         |
|---------|---------|
| a) 1, 4 | b) 2, 3 |
| c) 3, 4 | d) 1, 2 |
10. Which among the following is used as dispersing and levelling agent? [K<sub>1</sub>]
- |   |                          |
|---|--------------------------|
| a) Sodium salt of naphthalene – formaldehyde condensate | b) Phenol - formaldehyde |
| c) Urea - formaldehyde                                  | d) Phenolphthalein       |

**PART B (10 x 2 = 20 Marks)**  
**(Answer not more than 40 words)**

11. List out the disadvantages of hard water in textile industries. [K<sub>2</sub>]
12. With graphical representation explain Break point Chlorination. [K<sub>2</sub>]
13. Define degree of polymerization. [K<sub>1</sub>]
14. Mention the applications of polystyrene. [K<sub>2</sub>]
15. Distinguish between covalent and coordinate bond. [K<sub>2</sub>]
16. What are London forces? [K<sub>1</sub>]
17. List out two differences between chromophore and auxochrome. [K<sub>2</sub>]
18. Write the structure of eosin. [K<sub>1</sub>]
19. Mention two functions of dispersing agent in textiles. [K<sub>2</sub>]
20. Tabulate the information obtained from a differential scanning calorimetry plot. [K<sub>3</sub>]

**Answer any FIVE Questions**  
**PART C (5 x 14 = 70 Marks)**  
**(Answer not more than 300 words)**

**Q. No. 21 is Compulsory**

21. (i) Explain the purification of salt water by reverse osmosis with neat diagram. (7) [K<sub>1</sub>]  
(ii) Distinguish between thermoplastics and thermosetting plastics with examples. (7) [K<sub>1</sub>]
22. (i) Explain in detail the ion-exchange method for the purification of hard water with neat diagram. (8) [K<sub>1</sub>]  
(ii) Compare colloidal conditioning and carbonate conditioning and calgon condition with reactions. (6) [K<sub>1</sub>]
23. (i) Explain the mechanism of free radical addition polymerization with a suitable example. (8) [K<sub>2</sub>]  
(ii) Give the preparation and applications of different types of polyethylene. (6) [K<sub>1</sub>]
24. (i) Explain the two types of hydrogen bonding with an example. List the consequences of hydrogen bonding in molecule. (10) [K<sub>2</sub>]  
(ii) Illustrate interaction between fiber and dye with an example. (4) [K<sub>3</sub>]
25. (i) Give the structure and synthesis of indigo. In the structure, encircle the chromophore portion responsible for its deep blue colour. (7) [K<sub>2</sub>]  
(ii) Name a triphenylmethane dye. Give the synthesis and uses of dye named by you. (7) [K<sub>2</sub>]
26. (i) Discuss the role of levelling agents in textiles. (7) [K<sub>2</sub>]  
(ii) What are retarding agents & discuss its role in dyeing industry. (7) [K<sub>2</sub>]

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