

Solapur University, Solapur.

Skill Development Center

Name of course: **Certificate course in Textile Chemistry**

Curriculum of Certificate Course in Textile Chemistry :

Medium of the Course : English
Duration of the Certificate Course : 6 Months
Eligibility : 12th Passed & Admitted to B.Sc. Course.

Project to be submitted at the end of Course.

Examination Pattern : Annual Examination Pattern
Theory Paper (Duration -2 hrs) : 50 Marks
Practical (Duration – 3hrs) : 30 Marks

Oral and Project : 20 Marks

Theory & Practical Examination will be held at the end of academic year and certificate will be issued by the affiliating University.

Syllabus

Theory Paper

Total hr.: 45

1. Textile Fiber

- 1.1 Classification of Fibers, Physical & Chemical properties of Cotton, Wool, Jute and silk.
- 1.2 Method of manufacturing, physical, chemical, properties and uses of man made fibers, regenerated fibers such as viscose rayon, acetate rayon
- 1.3 Method of manufacturing, Physical, Chemical properties and uses of man made fibers, Polyester, Nylon 66 Polyacrylonitrilic Polyolefins

2. Sizing

- 2.1 Object of Sizing, Sizing ingredients and their functions.
- 2.2 Chemistry of Sizing ingredients.
- 2.3 Physical and chemical properties of starch, softener, synthetic adhesives.
- 2.4 Testing of starches, softeners.
- 2.5 Sizing of synthetic warp yarn

3. Bleaching

- 3.1 Studying of outline of the process of bleaching of cotton and synthetic materials.
- 3.2 Studying of process like sizing, desizing, scouring, bleaching and souring (Batch and Continuous process)

4. Dyeing

- 4.1 Study of dyeing of cellulosic materials with dyes like direct, vat sulphur, reactive, soluble reactive, soluble vat, mineral khaki and aniline back.
- 4.2 Study of dyeing of synthetic fibers like polyester, nylon and acrylic with suitable class of dyes.
- 4.3 Brief description of machinery used for dyeing yarn and fabric machines like package dyeing jigger, winch, padding mangle and continuous dyeing tango

5. Printing

- 5.1 Study of printing cellulosic fabrics with dyes like direct, reactive vat, soluble vat, azoics and pigment colours
- 5.2 Study of direct discharge and resist style of printing
- 5.3 Brief study of flat bed screen printing machine, rotary screen printing machine and roller printing machine

6. Fining

- 6.1 Object and classification of finishing processes.
- 6.2 Finish applied on cellulosics and synthetic fabrics with reference to resin finishing, water proofing, soil release.
- 6.3 Study of water mangling starching, drying, stentering, calendaring, mercerization, shrink resisting treatment, optical brightening treatments.

Practical's:

- 1) Identification of textile fibers.
- 2) Testing of Starches
- 3) Testing of oils and softeners.
- 4) Testing of Turkey Red oil.
- 5) Viscosity testing of different starches.
- 6) Bleaching of cellulosic with different bleaching agent.
- 7) Bleaching of Polyester with different bleaching agent.
- 8) Dyeing of cellulosic fabric with different classes of dyes like direct, vat, sulphur, indigosol, Azoic reactive etc.
- 9) Dyeing of synthetic fabrics with different classes of dyes like disperse, reactive, basic, acid, etc
- 10) Testing of colour fastness (washing, light and abrasion) for dyed fabrics and garments.
- 11) Testing of shrinkage of fabrics and garments.
- 12) Preparation of screen for printing.
- 13) Preparation of printing paste of different dyes.
- 14) Fixation of print with steaming method.
- 15) Other related practical

Reference Books:

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| 1 | Textile Fibers | -Dr. V. A. Shenai |
| 2 | Sizing | -D. B. Ajgaonkar |
| 3 | Bleaching | -Dr. V. A. Shenai |
| 4 | Dyeing | -Dr. V. A. Shenai |
| 5 | Printing | -Dr. V. A. Shenai |
| 6 | An Introduction of Finishing | -J.T.Marsh |
| 7 | Finishing | -Dr. V. A. Shenai |
| 8 | Bleaching | -E. R. Trotman |
| 9 | Textile Science | -J. T. Marsh |
| 10 | Fiber Science & Technology | -S Jayprakash, R. Gopalkrishna
-V. Kashinathan |
| 11 | Evaluation & Textile Chemicals | -Dr. V. A. Shenai & R. H. Mehera |
| 12 | Practical Cotton Finishing | -J. H. Edge |
| 13 | Identification of Organic
Compound & Textile Fibers-
Semi Micro Method | -J. G. Vashi |

Question Paper Nature
Certificate course in Textile chemistry

Time: 2 hr

Total Marks: 50

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- Q. 1. Choose the **most correct** alternative for the following and rewrite the sentence. 10
- 1) -----
- a) b) c) d)
- 2)
3)
4)
5)
6)
7)
8)
9)
10)
- Q. 2. Answer **any five** of the followings. 10
- i)
ii)
iii)
iv)
v)
vi)
- Q. 3. A) Answer **any two** of the followings. 08
- i)
ii)
iii)
- Q. 4. Answer **any two** of the following. 10
- i)
ii)
iii)
- Q. 5. Write short note/problem/solve/draw and discuss neat diagram **any two** of the following. 12
- i)
ii)
iii)