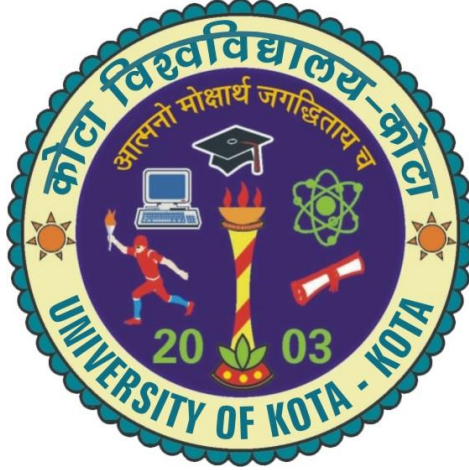


**Syllabus and Course Scheme**  
**Academic year 2022-23**



**B.A/B.Sc./B.Com.**  
**T.D.P.**  
**Exam.-2023**

**UNIVERSITY OF KOTA**  
**MBS Marg, Swami Vivekanand Nagar,**  
**Kota - 324 005, Rajasthan, India**  
**Website: uok.ac.in**

# **TEXTILE DYEING AND PRINTING**

## **B.A./B.Sc./B.Com. Part -1 -2022-23**

<b>Scheme :</b>			<b>B.Sc.</b>		<b>B.A./ B.Com.</b>		
	Nomenclature	Dur.	Max./Min.	Marks	Max./Min.	Marks	No. of Periods
Paper-I	<b>Weaving and Mkt.</b>	3 hrs	75	27	65	24	3
Paper-II	<b>Designing &amp; Dyeing</b>	3 hrs	75	27	65	24	3
Practical		4 hrs	75	27	70	26	4/ Batch

### **PAPER- 1 (Weaving and Marketing)**

Duration: 3 hrs

Max. Marks: (Sc)-75/(Arts/Comm.)-65

**Note:** The question paper will contain three sections as under-

- Section-A:** One compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. 10 (Sc.)/05 (Arts/Comm.)
- Section-B:** 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. 35 (Sc.)/35 (Arts/Comm.)
- Section-C:** 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type answer in about 500 words, 2 questions to be attempted. 30 (Sc.)/25 (Arts/Comm.)

UNIT-1 Introduction to Textile  
Classification of textile fibers  
General properties of textile fibers  
Identification of textile fibers

UNIT-2 Natural Fibers-Manufacture, Chemical composition, general properties & Flowchart-cotton, silk, wool  
Manmade Fibers- Manufacture, Chemical composition, general properties & Flowchart - Rayon, Nylon, Polyester

UNIT-3 Different methods of yarn construction

- Types of yarn
- Yarn characteristics and their measurement
- Twist, Crimp, Strength

Yarn numbering system –Tex, Denier, Count

UNIT-4 (a) Introduction to weaving

- Terms used in weaving
- Loom & it's parts
- Elementary weaves and their derivatives  
Plain weave- Rib, Basket  
Twill weave-Right hand & Left hand  
Satin weaves- Satin & sateen

(b) Weave Representation : Weaving plan, Various Drafts and Peg Plans

UNIT-5 Meaning, nature & scope of marketing

- Role & importance of marketing in modern economy.
- Meaning and importance of marketing mix
- Products, Pricing, Physical distribution, Promotion

## References

1. Textiles- Bucker-(1998)Abhishek Publication
2. .Essentials of Textiles- M.Joseph, Holf Rinechants,
3. Textile -Year 1998-By A.F. Barker -Chapter 7, Principles of weaving-Pg.154-174
4. Weaving Technology-M.M.Kulkarni, Virinda Publication, Jalgon
5. Principles and practice of Dyeing- V A Shenai, 1993 Sevak Publications.
6. Textile design & colon, Z. Grorikio
7. वस्त्र, विज्ञान एवं परिधान – प्रमिला वर्मा

## B.A/ B.Sc. / B.Com. Part -1 Paper-II (Designing & Dyeing)

Duration: 3 hrs

Max. Marks: (Sc)-75/(Arts/Comm.)-65

**Note:** The question paper will contain three sections as under-

- Section-A:** one compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. 10 (Sc.)/05 (Arts/Comm.)
- Section-B:** 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. 35 (Sc.)/35 (Arts/Comm.)
- Section-C:** 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type answer in about 500 words, 2 questions to be attempted. 30 (Sc.)/25 (Arts/Comm.)

- UNIT-1 1.Elements of design (line, form, colour, texture, tone, space)  
2. Principle of design (unity, harmony, balance, dominance, rhythm, proportion)  
3. Definition of Motifs & its characteristics with reference  
-Classification of motifs (i) Traditional (ii) Modern  
-Types of motifs (i) Geometrical (ii) Stylized (iii) figurative (iv) Abstract  
(v) Folk (vi) Tribal  
4. Concept of Repeat in Design:  
Types of Repeats: Plain, Vertical, Horizontal, Twill, Mirror, Half step, All over.

- Unit 2 Preparatory processes  
(a) Scouring  
(b) Bleaching (i) bleaching of cotton, silk, nylon (ii) Optical bleaching agents  
(c) Desizing (i) Acid desizing (ii) Rot steeping (iii) enzymatic desizing  
(d) Singing (i) gas singing (ii) Plate signing (iii) roller singing  
(e) Mercerization-Historical significance & introduction Action of Caustic Soda on Cotton fibre, Nature of Change occurring in cotton fibres

- Unit 3 Nomenclature of Dyes: Colour and Dyes, colouring and Dyeing.  
The dye molecule (chromophores and auxochromes)  
Theory of dyeing (Affinity of a dye, role of water, electrolytes, heat)  
Dye auxiliary: Carriers or swelling agents, leveling agents (anionic leveling agents and cationic leveling agents).

- Unit 4 Classification of dye-stuff and its properties  
(A) Natural - (a) Vegetable (b) Animal (c) Mineral  
(B)Synthetic dyes - Acid dyes, direct dyes, reactive dyes,Vat dyes, Sulphur dyes, Azoic dyes

- Unit 5 Dyeing of textile goods in various forms and machinery employed

- (A) Dyeing of loose fibers
- (B) Dyeing of yarn
  - i.Hank dyeing machine
  - ii.Cheese/Bobbin dyeing machine
  - iii.Beam dyeing machine
- (C) Cloth dyeing
  - i.Jigger dyeing machine
  - ii.Winch dyeing machine
  - iii.Thermosole process
  - iv.Dope dyeing

### References:

Bosom worth Dorothy (1995): The encyclopedia of patterns and motifs, Studio editions, London  
 Grociki, Z.J.; Watsons Textile Design and Colour, London, Newness Butter Worth  
 V.A.Shenai (1987), Chemistry of dyes and principles of Dyeing, Sevak Prakashan, Mumbai  
 V.A.Shenai (1987) Technology of Textile Processing, Vol.IV, Sevak Publication.  
 शर्मिला गुर्जर " वस्त्र की रंगाई एवं छपाई"  
 Technology of Textile Processing -Vo.II, Chemistry of Dyes and Principles of Dyeing, V.A. Shenai, 1993, Sevak Publications.

### **Practical**

Max. marks 75 for science Min. marks 27 for science Duration Four-Hrs.  
 Max. marks 70 for arts Min. marks 26 for arts  
 (Four pd/week)

1. Colour wheel, primary, secondary, tertiary colour, cool colours, warm colours Monochromatic, complimentary polychromatic, analogous colour
2. Tie and Dye (Different patterns on handkerchiefs) with direct dyes.
3. Assan- weaving (10"x10")
4. Identification of fibers – cotton, silk, wool, polyester, nylon.
4. Assessing ends and picks per inch of different fabrics
6. Preparation of fabrics for dyeing & printing (desizing, scouring, bleaching)
7. Dyeing with Direct, Acid and Sulpher dyes in different shades
8. Field and industrial visit
9. Development of an innovative product.
10. Entereprenurship activity
11. Community engagement activity



- Unit 4 Selvedges.
- Plain selvedge.
  - Tape selvedge.
  - Split selvedge.
  - Fused selvedge.
  - Leno selvedge.
  - Tucked selvedge.

- Unit 5 Study of woven textiles according to colour, texture, motifs & techniques
- a. Jamdani
  - b. Baluchar
  - c. Paithani Sarees
  - d. Maheshwari Saree
  - e. Chanderi Saree
  - f. Banarasi Brocade

### Reference Books

Weaving Technology-M.M.Kulkarni, Virinda Publication, Jalgon  
 Grociki, Z.J.; Watsons Textile Design and Colour, London, Newness Butter Worth

## Paper –II - Printing

Duration: 3 hrs

Max. Marks: (Sc)-75/(Arts/Comm.)-65

**Note:** The question paper will contain three sections as under-

- Section-A:** one compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. 10 (Sc.)/05 (Arts/Comm.)
- Section-B:** 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. 35 (Sc.)/35 (Arts/Comm.)
- Section-C:** 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type answer in about 500 words, 2 questions to be attempted. 30 (Sc.)/25 (Arts/Comm.)

UNIT 1 Introduction to Printing - difference between dyeing and printing.  
 Historical development of printing methods-block, stencil, screen, roller and rotary screens used at cottage and industrial level

UNIT 2 Definition of printing  
 Pretreatments required ingredients for printing (Thickening agent, Mordents, oxidizing and reducing agent etc.)  
 Preparation of printing paste recipes

UNIT 3 Styles of printing – direct style, dyed, resist style, discharge style and raised style  
 Special printing procedures- Polychromatic dyeing, Transfer printing,  
 Carpet printing, Flock printing  
 Finishing and after treatment of printed goods at cottage and industrial level.

UNIT 4 Organization of the textile industry: Centralized and Decentralized sectors, handlooms, co-operative and export trends, multinational companies.

UNIT 5 Study of Traditional Textiles

- a. Sanganeri
- b. Bagru
- c. Kalamkari
- d. Ajarakh
- e. Patola
- f. Ikat

- g. Pochampalli
- h. Bandhani

## Practical

Min. marks: 27/26

Max.marks: 75/70

Duration : 4hrs.

1. Constructing fabrics by other methods like Knitting, Crotchet, Macrame
2. Introduction to computer aided designing for weaving & printing software.
3. Paper work on: 4 (four) sketches on geometrical, stylized, figurative, abstract, traditional- (4 motifs)
4. Sketches on plain, vertical, horizontal and half step repeat.
5. Paper work and practical work for stencil size (one meter cloth) with pigment or fabric color.
6. Printing with blocks and screen on cotton, product development
7. Weaving Muffler (6"x 60") or Assan 12"x12"
8. Field and industrial visit
9. Development of an innovative product.
10. Entreprenurship activity
11. Community engagement activity

## References

1. [www.rajasthantextiles.com](http://www.rajasthantextiles.com)
2. शर्मिला गुर्जर "वस्त्र की रंगाई एवं छपाई"
3. Block Printing and Dyeing of Bagru, Rajasthan/Bijoy Chandra Mohanty and Jagadish Prasad Mohanty. Ahmedabad, Calico Museum of Textiles, 1983, 108 p., plates, map, (Study of Contemporary Textile Crafts of India).
4. R.S Prayag, Textile Printing
5. V.A.Shenai , Technology of Printing

# TEXTILE DYEING AND PRINTING

## B.A/ B.Sc. /B.Com. Part –III -2022-23

Scheme	<b>Min pass Marks</b>	<b>Max Marks</b>
	Theory 54/47	Theory: 150/130
Paper- 1 (3pd/week)	3 hrs. Duration	75-Sc./65-(Arts/Commerce)
Paper- 2 (3pd/week)	3 hrs duration	75-Sc./65-(Arts/Commerce)
	Practical: 27/26	Practical: 75/70

### Paper -I Finishing Auxiliaries Entrepreneurship Development

Duration: 3 Hrs. Max. Marks 75-Sc./65-(Arts/Commerce)

**Note:** The question paper will contain three sections as under-

- Section-A:** one compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. 10 (Sc.)/05 (Arts/Comm.)
- Section-B:** 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. 35 (Sc.)/35 (Arts/Comm.)
- Section-C:** 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type answer in about 500 words, 2 questions to be attempted. 30 (Sc.)/25 (Arts/Comm.)

Unit -1 a. Ingredients used in finishing – filling materials, adhesives, antiseptics, Optical brightening agents, oils, fat and waxes, softeners.  
b. Properties and chemistry of soaps and detergents

Unit - 2 a. Starches wheat starch, rice starch, Guar gum, Tapioca starch, Soluble starches – Properties and use  
b. Use and importance of resins (natural and synthetic)

Unit – 3 (a) water and water pollution  
(b) Effluent treatment in Cotton Industry (Primary, secondary and tertiary level)

Unit – 4 1) Entrepreneurship Concept/Meaning, Need ,qualities of an entrepreneur  
Entrepreneurial Support System  
District Industry Centres (DICs)  
Commercial Banks  
State Financial Corporations

Unit - 5 Small scale industry: Definition; Characteristics; Need and rationale: Objectives: Scope; role of SSI in Economic Development.  
Advantages of SSI. Steps to start in SSI . Impact of Liberalization, Privatization, Globalization on S.S.I.

- How to start a small scale industry
- Procedures for registration of small scale industry
- List of items reserved for exclusive manufacture in small scale industry
- Assessment of demand and supply in potential areas of growth
- Understanding business opportunity
- Considerations in product selection
- Data collection for setting up small ventures

#### REFERENCE BOOKS:

1. Textile Auxiliaries and Finishing Chemicals- ATIRA Publications.
2. Modern techniques of textile Bleaching- Dyeing, and Finishing, SITRA Pub.



3. Chemical Processing of Cotton, Polyester Cotton Blends-J.R.Modi and A.R.Grade- 1980, TAI Publications.
4. Dyeing of Polyester Blends- M L Gulrajani, 1980, TAI Publications.
5. Technology of Textile Processing -Vo.II, Chemistry of Dyes and Principles of Dyeing, V.A. Shenai, 1993, Sevak Publications.
6. Philip Kotler – Marketing Management
7. J. C. Gandhi – Marketing Management
8. Ramaswamy and control-Marketing Management : Planning, Implementation.
9. एस० सी० जैन – विपणन प्रबन्ध
10. आर० पी० माहेश्वरी – व्यावसायिक सन्नियम
11. Development of an innovative product.
12. 10. Entereprenurship activity
13. 11. Community engagement activity

## **PAPER- II (Finishes and new developments)**

Duration: 3 Hrs.

Max. Marks 75-Sc./65-(Arts/Commerce)

**Note:** The question paper will contain three sections as under-

- Section-A:** one compulsory question with 10 parts, having 2 parts from each unit, short answer in 20 words for each part. 10 (Sc.)/05 (Arts/Comm.)
- Section-B:** 10 questions, 2 questions from each unit, 5 questions to be attempted, taking one from each unit, answer approximately in 250 words. 35 (Sc.)/35 (Arts/Comm.)
- Section-C:** 04 questions (question may have sub division) covering all units but not more than one question from each unit, descriptive type answer in about 500 words, 2 questions to be attempted. 30 (Sc.)/25 (Arts/Comm.)

- Unit -1 a. Objectives and functions of finishing and Classification of finishes – Physical and chemical, Temporary and permanent  
b. Preparation of finishing mixture, detailed study of Waterproofing, water repellency, Fire proofing and moth proofing, stiffening, Crease resistance and crease proofing.

- Unit -2 a. Finishing machineries -  
a. Padding Magles – 2 bowl mangle – 3 bowl mangle, Washing Mangle.  
b. Calendaring – Objects, 5 bowl calendar , 7 bowl calendar, embossing calendar Schriener calendar , Swizzing calendar, Chasing calendar.  
c. Sanforization - principle, objectives and process.  
d. Texturization

- Unit -3 1) Sustainability in textile processing  
2) Indian and International textile Eco Labels, standards, quality control, strategy, information systems.  
3) Eco or green design, issues for consumers, retailers & fashion

- Unit- 4 New developments in textile  
a) Geo textile  
b) Medical textiles  
c) Protective Clothing

d) Automotive Textile

Unit- 5 a) Fundamentals of Computer and application of CATD (computer aided textile designing)

- Overview of the computer System (Basic components & their functions)
- Overview of Windows
- Overview of Word Processors (MS-Word)
- Overview of Spreadsheet (MS-Excel)
- Overview of Presentation (MS-Power Point)
- Network Basic & Internet
- Scope & importance of CATD.

Reference Books :

1. Dyeing and Chemical Technology- of textile Fibres, E.R.Trotman,
2. Technology of Textile Processing- Vo. III, V A Shenai, 1975,Sevak Publications.
3. Technology of Bleaching and Dyeing of textile fibres-Chakrawarthy, 1972, Coxtown publications.
4. Textile Chemistry- Vo.I&II, R H Peters, Elsewhere Publishing Co.,New York
5. S.V.S Rana, Environmental studies, Rastogi pub., Meerut, 1<sup>st</sup> ed., 2004.
6. Fundamentals of Computers Graphics & Multimedia, Mukherjee, PHI

### Practical

Max. marks : 75 (science)/ 70 (arts/commerce)

Min.marks:27(science) /26 (arts/ commerce)

Duration: Four-Hrs. (Two Hrs.Per day)

1. Power point Presentation
2. Photo editing & capturing
3. CATD presentation
4. Evaluation of textile finishes and auxillaries (blues,dyes,stiffening and wetting agent)
5. Water analysis
6. Quality control analysis(shrinkage test, colour fastness, dimensional stability)
7. Field and industrial visit
8. Development of an innovative product.
9. Entereprenurship activity
10. Community engagement activity