



Students Handbook + Practical Manual Class XII







CENTRAL BOARD OF SECONDARY EDUCATION

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110301





Students Handbook + Practical Manual

for

Class - XII



CENTRAL BOARD OF SECONDARY EDUCATION

in collaboration with



NATIONAL INSTITUTE OF FASHION TECHNOLOGY



Fabric Study Students Handbook + Practical Manual for Class XII

PRICE: ₹

First Edition: June 2014, CBSE, India

Copies: 1000

Paper Used: 80 gsm White Maplitho

"This book or part thereof may not be reproduced by any person or agency in any manner."

Published By: The Secretary, Central Board of Secondary Education,

Shiksha Kendra, 2, Community Centre, Preet Vihar, Delhi-110301

Design & Layout: Multi Graphics, 8A/101, WEA Karol Bagh, New Delhi-110005

Phone: 011-25783846

Printed By : Akashdeep Printers, 20 Ansari Road, Daryganj, New Delhi - 110002

भारत का संविधान

उद्देशिका

हम, भारत के लोग, भारत को एक सम्पूर्ण 'प्रभुत्व-संपन्न समाजवादी पंथनिरपेक्ष लोकतंत्रात्मक गणराज्य बनाने के लिए, तथा उसके समस्त नागरिकों को:

> सामाजिक, आर्थिक और राजनैतिक न्याय, विचार, अभिव्यक्ति, विश्वास, धर्म और उपासना की स्वतंत्रता.

प्राप्त कराने के लिए तथा उन सब में व्यक्ति की गरिमा

> ²और राष्ट्र की एकता और अखंडता सुनिश्चित करने वाली बंधुता बढ़ाने के लिए

प्रतिष्ठा और अवसर की समता

दृढ़संकल्प होकर अपनी इस संविधान सभा में आज तारीख 26 नवम्बर, 1949 ई॰ को एतद्द्वारा इस संविधान को अंगीकृत, अधिनियमित और आत्मार्पित करते हैं।

- 1. संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977) से "प्रभुत्व-संपन्न लोकतंत्रात्मक गणराज्य" के स्थान पर प्रतिस्थापित।
- 2. संविधान (बयालीसवां संशोधन) अधिनियम, 1976 की धारा 2 द्वारा (3.1.1977) से "राष्ट्र की एकता" के स्थान पर प्रतिस्थापित।

भाग 4 क

मूल कर्त्तव्य

51 क. मूल कर्त्तव्य - भारत के प्रत्येक नागरिक का यह कर्त्तव्य होगा कि वह -

- (क) संविधान का पालन करे और उसके आदर्शों, संस्थाओं, राष्ट्रध्वज और राष्ट्रगान का आदर करे;
- (ख) स्वतंत्रता के लिए हमारे राष्ट्रीय आंदोलन को प्रेरित करने वाले उच्च आदर्शों को हृदय में संजोए रखे और उनका पालन करे;
- (ग) भारत की प्रभुता, एकता और अखंडता की रक्षा करे और उसे अक्षुण्ण रखे;
- (घ) देश की रक्षा करे और आहवान किए जाने पर राष्ट्र की सेवा करे;
- (ङ) भारत के सभी लोगों में समरसता और समान भ्रातृत्व की भावना का निर्माण करे जो धर्म, भाषा और प्रदेश या वर्ग पर आधारित सभी भेदभाव से परे हों, ऐसी प्रथाओं का त्याग करे जो स्त्रियों के सम्मान के विरुद्ध हैं;
- (च) हमारी सामासिक संस्कृति की गौरवशाली परंपरा का महत्त्व समझे और उसका परिरक्षण करे;
- (छ) प्राकृतिक पर्यावरण की जिसके अंतर्गत वन, झील, नदी, और वन्य जीव हैं, रक्षा करे और उसका संवर्धन करे तथा प्राणी मात्र के प्रति दयाभाव रखे:
- (ज) वैज्ञानिक दृष्टिकोण, मानववाद और ज्ञानार्जन तथा सुधार की भावना का विकास करे;
- (झ) सार्वजनिक संपत्ति को सुरक्षित रखे और हिंसा से दूर रहे;
- (ञ) व्यक्तिगत और सामूहिक गतिविधियों के सभी क्षेत्रों में उत्कर्ष की ओर बढ़ने का सतत प्रयास करे जिससे राष्ट्र निरंतर बढ़ते हुए प्रयत्न और उपलब्धि की नई उंचाइयों को छू ले;
- '(ट) यदि माता-पिता या संरक्षक है, छह वर्ष से चौदह वर्ष तक की आयु वाले अपने, यथास्थिति, बालक या प्रतिपाल्य के लिये शिक्षा के अवसर प्रदान करे।
- 1. संविधान (छयासीवां संशोधन) अधिनियम, 2002 की धारा 4 द्वारा प्रतिस्थापित।

THE CONSTITUTION OF INDIA

PREAMBLE

WE, THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a ¹SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens:

JUSTICE, social, economic and political;

LIBERTY of thought, expression, belief, faith and worship;

EQUALITY of status and of opportunity; and to promote among them all

FRATERNITY assuring the dignity of the individual and the unity and integrity of the Nation;

IN OUR CONSTITUENT ASSEMBLY this twenty-sixth day of November, 1949, do HEREBY ADOPT, ENACT AND GIVE TO OURSELVES THIS CONSTITUTION.

- 1. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "Sovereign Democratic Republic" (w.e.f. 3.1.1977)
- 2. Subs, by the Constitution (Forty-Second Amendment) Act. 1976, sec. 2, for "unity of the Nation" (w.e.f. 3.1.1977)

THE CONSTITUTION OF INDIA

Chapter IV A

FUNDAMENTAL DUTIES

ARTICLE 51A

Fundamental Duties - It shall be the duty of every citizen of India-

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers, wild life and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- ¹(k) to provide opportunities for education to his/her child or, as the case may be, ward between age of 6 and 14 years.
- 1. Subs. by the Constitution (Eighty Sixth Amendment) Act, 2002



The Indian textile and fashion industry contributes substantially to its exports earnings. It is also the second largest domestic employer after agriculture. The garment industry is classified into organized and unorganized sectors catering to a diverse consumer segment. The unorganized segment comprises small-scale readymade apparel stores, independent fabric and tailoring shops etc. The organized sector comprises single-brand or multi-brand retail outlets, designer boutiques etc. to cater to different strata of consumers. The domestic apparel market is expected to grow @ 11% CAGR primarily driven by high value growth due to organized and branded segment. The Indian textile and apparel trade is estimated at USD 662 billion in 2011 and is expected to grow at 5% CAGR by 2021. Employment in the Indian textile and apparel sector stands at 45 million with an additional employment of 60 million in allied sectors.

The Central Board of Secondary Education (CBSE) has taken the initiative of developing a range of vocational courses in areas of emerging interest for those students who may not pursue higher education due to financial constraints or for any other reason. In keeping with this objective, the vocational course on Fashion Design Garment Technology (FDGT) for students of Std XI and XII offers an option to those who would like to enter the fashion industry right after completion of secondary level of education. While academic courses have more theory-based curricular content and do not develop extensive hands-on skill competency, it is envisaged that vocational courses will inculcate not only knowledge but also the related skills which are required by specific industry segments. The FDGT course combines a gamut of theoretical with practical inputs in order to enable students to gain professional competency education in the area of fashion design and garment technology.

The content of the subject is the outcome of consultative discussions among CBSE officials and teachers, senior NIFT faculty members and alumni, industry members representing the export and domestic garment sector including fashion designers.

The Board would like to place on record the support received from Shri P K Gera, IAS, Director General NIFT and Sr. Prof Banhi Jha, Dean - Academic. We also acknowledge the contribution of Sr. Prof. Banhi Jha, Prof. Vandana Narang - Project Anchor, Prof. Malini D, Dr. Rajitha & Mr. K.D. Sharma faculty of NIFT for their time and effort in developing the FDGT textbooks for Std XII. The contribution of Dr. Biswajit Saha, Additional Director and Ms. Swati Gupta, Deputy Director Vocational Education Cell, CBSE is also deeply appreciated.

Any suggestions and feedback from the readers for improvement in the future editions of the subject is welcome.

Shri Vineet Joshi Chairman, CBSE



Preamble

Textile products play a vital role in meeting man's basic needs. Often interpreted only as clothing the usage of textiles goes beyond the scope of just clothing. The use of textiles has been traced back over 8500 years and fabric forms the base of fashion. Fashion and textiles sector is very dynamic, and is constantly changing in response to the demands of the global marketplace. The common theme running throughout these areas is an understanding of the properties of fibers, yarn and fabric composition and its value addition.

Fashion Design and Technology as a profession includes the entire process of designing and producing fashion apparel for which an understanding of the fibre, yarn and fabric and their properties is essential. The subjects of this course provide an insight on usage of fabrics and the basic techniques of value addition through embroidery, dyeing and printing. The main objective of the course is to develop professional competency in the field of textiles - its appreciation, understanding of various techniques of surface ornamentation, and exploration of traditional techniques of embroidery.

Fabric study as a course introduces the students to fundamental aspects of textiles, appreciation, ornamentation and value addition. The students develop the skill of handling and using fabric in various aspects of design and also provide a direction to choose their career for further studies.

Acknowledgement

CBSE

- Sh. Vineet Joshi, IAS, Chairman
- Sh. M.V.V. Prasada Rao, Director (Vocational and Edusat)
- Dr. Biswajit Saha, Additional Director (Vocational Education)
- Ms. Swati Gupta, Deputy Director (Vocational Education), CBSE Anchor

NIFT Team

- Mr. Prem Kumar Gera, IAS
- Sr. Prof Banhi Jha, Dean (A)

Contributors

- Prof. Malini Divakala, NIFT
- Dr. I. Rajitha, Associate Professor, NIFT

Anchor

Dr. Vandana Narang, Professor, NIFT

Cover Page Designed by

Ms. Priyadarshini Venkat, NIFT

Table of Contents

UNIT 1:	INT	RODUC	1 -7				
	1.1	Terminology, Properties, End uses					
	1.2	Classi	1				
		1.2.1	Veg	2			
		1.2.2	Anin	nal or Protein Fibers	2		
		1.2.3	Man	Made Fibers	3		
	1.3	Yarn			6		
		1.3.1	Yarr	n Making	6		
		1.3.2	Туре	es of Yarns	6		
UNIT 2:	UNE	DERSTA	9 - 17				
	2.1	Woven Fabrics			g		
		2.1.1	Mak	ing Woven Fabrics	10		
		2.1.2	Moti	ons of the Loom	10		
		2.1.3	Basi	ic Weaves	11		
	2.2	Knitted Fabrics			13		
		2.2.1	Туре	es of Knits	13		
		2.2.2	Con	nmon Knit Fabrics	14		
	2.3	Non W	Voven	Fabrics and Felting	14		
	2.4	Decor	rative I	14			
UNIT 3:	FAE	RIC TE	ERMIN	18 - 21			
UNIT 4:	SUF	RFACE	22 - 35				
	4.1	Embroidery			22		
		4.1.1	Con	nmon Embroidery Stitches	22		
	4.2	Dyeing and Printing			26		
		4.2.1	Style	es of Printing	27		
		4.2.2	Metl	nods of Printing	28		
			i.	Stencil Printing	28		
			ii.	Screen Printing	28		
			iii.	Block Printing	28		
			iv.	Roller Printing	29		
			V.	Transfer Printing	29		

		100	į
		7777	
166	And the second		

	4.3	Resist Dyeing Techniques			29
		4.3.1	Diff	30	
		4.3.2	Techniques		31
			i.	Tie and Die	31
			ii.	Batik	32
			iii.	Block Printing	32
			iv.	Stencil Printing	33
UNIT 5:	OVE				
	ANI	DYEIN	NG TE	ECHNIQUES	36 - 54
	5.1	Indian Traditional Embroideries			36
		5.1.1	Em	broideries of Different States	36
			i.	Kashida of Kashmir	36
			ii.	Chikankari of Uttar Pradesh	37
			iii.	Chamba Rumal of Himachal Pradesh	38
			iv.	Kanthas of Bengal	39
			V.	Kasuti of Karnataka	41
			vi.	Phulkari of Punjab	42
			vii.	Kutch Embroidery	43
			viii.	Gold and Silver Embroidery	44
	5.2	Traditional Dyeing Techniques			45
		5.2.1	Tie Dyed and Ikat Textiles		45
			i.	Bandhani	45
			ii.	Leheria	46
			iii.	Patola	47
			iv.	Bandhas of Orissa and Andhra Pradesh	48
			V.	Bandhas of Andhra Pradesh	48
		5.2.2	Res	sist Printed and Painted Textiles of India	49
			i.	Ajarakh Prints of Gujarat and Rajasthan	49
			ii.	Kalamkari of Andhra Pradesh	50
			iii.	Bagh Prints of Madhya Pradesh	51
			iv.	Bagru Printing	51
			V	Dahu Resist Dveing	52