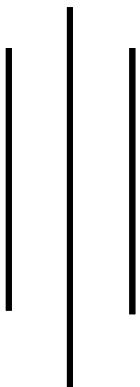
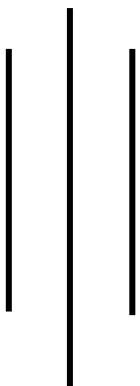


नेपाली सेना
श्री भर्ना छनौट निर्देशनालय,
जंगी अड्डा



प्राविधिक उपसेनानी (टेक्सटायल) आन्तरिक पदको लिखित
परीक्षाको पाठ्यक्रम

(सैनिक प्राविधिक सेवा/सैनिक इन्जिनियरिङ/उत्पादन उपसमूहसंग सम्बन्धित)



२०८२

प्रा.उ.से. टेक्सटायल इंजिनियर (आन्तरिक) पदको लिखित परीक्षाको पाठ्यक्रम

समय: ४ घण्टा

पूर्णाङ्क: १५०

उत्तीर्णाङ्क: ६०

यो पाठ्यक्रम सैनिक प्राविधिक सेवा, इंजिनियरिङ समूह अन्तर्गत उत्पादन उपसमूहसंग सम्बन्धित नेपाली सेनाको प्राविधिक उपसेनानी प्रा.उ.से. टेक्सटायल इंजिनियर (आन्तरिक) पदको उम्मेदवार छानौट परीक्षाको लागी निर्धारण गरिएको हो । लिखित परीक्षामा सहभागी हुने उम्मेदवारको पेशा सम्बन्धी विषयहरूलाई आधार मानी प्रश्नहरू सोधिने छन् ।

(क) लिखित परीक्षाको माध्यम नेपाली/अंग्रेजी वा दुवै भाषा हुनेछ ।

(ख) लिखित परीक्षाबाट छानौट भएका उम्मेदवारलाई मात्र अर्को चरणको परीक्षामा सम्मिलित गराईनेछ ।

(ग) प्रश्नपत्र निर्माण गर्दा पाठ्यक्रममा समावेश भएका सबै विषयलाई यथासंभव समेटिनेछ ।

(घ) बस्तुगत र विषयगत संयुक्त रूपमा पूर्णाङ्क र उत्तीर्णाङ्क कायम गरिनेछ ।

(ङ) बस्तुगत र विषयगत परीक्षाको पाठ्यक्रम एउटै हुनेछ ।

(च) बस्तुगत र विषयगत विषयको लिखित परीक्षा एकैपटक वा छुट्टाछुट्टै गरी लिन सकिनेछ ।

(छ) यो पाठ्यक्रम मिति २०८२/०७/२८ गतेबाट लागु हुनेछ ।

विषय	पूर्णाङ्क	उत्तीर्णाङ्क	परीक्षा प्रणाली	प्रश्न संख्या अङ्क	समय
पेशा सम्बन्धी	७५	६०	बस्तुगत (Objective)	बहु वैकल्पिक प्रश्न (MCQs)	७५ प्रश्न \times १ अङ्क = ७५ १ घण्टा
	७५		विषयगत (Subjective)	छोटो उत्तर लामो उत्तर	९ प्रश्न \times ५ अङ्क = ४५ ३ प्रश्न \times १० अङ्क = ३०
					३ घण्टा

प्रा.उ.से. टेक्सटायल ईन्जिनियर (आन्तरिक) पदको लिखित परीक्षाको पाठ्यक्रम

1. BASICS OF ENGINEERING (15)

1.1 Bearings and Lubrication

- 1.1.1 Brief study
- 1.1.2 Need and importance of bearing
- 1.1.3 Different types of bearings and their use in Textile Machines
- 1.1.4 Factors for selection of bearings
- 1.1.5 Purpose of lubrication and types of lubrication systems
- 1.1.6 Desirable qualities of a good lubricant
- 1.1.7 Study of Continuous lubrication methods: Gravity feed lubrication, Pressure feed Lubrication and oil bath Lubrication

1.2 Transmission of motion and power

- 1.2.1 Brief study
- 1.2.2 Different types of drives flat, V belt and gear belt drives – merits and demerits
- 1.2.3 Advantages and disadvantages spur, helical, worm gear drives
- 1.2.4 Advantages and disadvantages Cams, different types of cams and followers
- 1.2.5 Applications of the above drives in textile machines

1.3 Basics of Electrical

- 1.3.1 Definition of electrical quantities: Voltage, current, power and resistance
- 1.3.2 Units of these quantities, Formula for calculation of electrical power and energy in a DC circuit
- 1.3.3 Alternating current, Direct current, frequency
- 1.3.4 Instruments used to measure voltage, current, Power and energy

2. FIBRE SCIENCE AND TECHNOLOGY (10)

2.1 Vegetable Fiber

- 2.1.1 Cotton producing countries. Cultivation and harvesting Varieties of commercial cottons in Nepal
- 2.1.2 Physical and chemical structures of cotton fiber
- 2.1.3 Physical and chemical properties and Uses.

2.2 Animal Fiber

- 2.2.1 Wool producing countries, Classification of wool with respect to fleece and breeds.
- 2.2.2 Physical and chemical structure.
- 2.2.3 Physical and chemical properties
- 2.2.4 Comparison of Virgin and remanufactured wool and Uses.
- 2.2.5 Silk producing countries. Types of silk - Wild and cultivated.
- 2.2.6 Life cycle of silk worm
- 2.2.7 Physical and chemical properties and Uses.

2.3 Regenerated Fiber

- 2.3.1 Types of spinning of manmade fibers - Wet, dry and melt.
- 2.3.2 Drawing and its importance

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3. YARN MANUFACTURES (15)

- 3.1 Types of yarn and their classification
- 3.2 Mixing, Blending yarn processing operations
- 3.3 Properties of yarn
- 3.4 spinning process and their functions
- 3.5 Spinning machineries

4. TEXTILE MACHINERY (15)

- 4.1 Engraving machine and its function, working mechanism
- 4.2 Raising Machine and its working procedure
- 4.3 Garments machines and their function

5. MAINTENANCE OF TEXTILE MACHINERY (20)

5.1 Basics of Maintenance, Assessment of maintenance

- 5.1.1 Preventive and Break Down Maintenance of machinery
- 5.1.2 Records and Norms for maintenance
- 5.1.3 Importance of co-ordination between maintenance, quality and production Departments
- 5.1.4 Application of Computers for maintenance

5.2 Gauges and Erection

- 5.2.1 Study of tools and gauges used in Spinning and Weaving Mills
- 5.2.2 Study of Erection procedures, tools and gauges used in erection of Spinning and Weaving Machines

5.3 Maintenance of Weaving, Wet Processing, Knitting and Garments Machineries

- 5.3.1 Routine and Preventive maintenance programs and Lubrication charts of warp and weft winding machines, warping machines, Sizing machines, Auto weaving machines, Sewing and embroidery machines.

6. TEXTILE TESTING (15)

6.1 Moisture Relations in Textiles

- 6.1.1 Humidity Relations and its importance in Textiles - Definitions of Absolute Humidity, Relative Humidity
- 6.1.2 Measurement of Humidity by Wet and dry bulb Hygrometer
- 6.1.3 Moisture content, Moisture regain and standard regain, Values of standard regain for common textile fibers
- 6.1.4 Effect of moisture regain on Fiber properties

6.2 Fiber Testing

- 6.2.1 Length - Importance of fiber length - Methods of measuring fiber length,
- 6.2.2 Fiber fineness - Importance of fiber fineness - Methods of measuring fiber fineness
- 6.2.3 Fiber maturity – Importance, Measurement of fiber maturity
- 6.2.4 Fiber strength - Importance of fiber strength and method of measuring fiber strength

6.3 Yarn Testing

- 6.3.1 Importance of Twist, Estimation of single yarn twist by Twist contraction method
- 6.3.2 Importance of yarn strength - Principle of working of yarn strength testers
Working of single yarn strength tester

6.4 Fabric Testing

- 6.4.1 Importance of Tensile Strength -, Study of fabric tensile strength, tearing and bursting strength
- 6.4.2 Definition of Fabric Air Permeability and Fabric Air Resistance

7. TEXTILE WET PROCESSING (20)

7.1 Preparatory and Bleaching Process

- 7.1.1 Impurities present in grey cotton and cotton fabric, sequence of wet processing treatments,
- 7.1.2 Bleaching - Object, Types of bleaching agents, Merits and demerits of Hypo chlorite and peroxide bleaching

7.2 Dyeing Process

- 7.2.1 Dyeing Methods and machineries
- 7.2.2 Chemical used in dyeing, printing and finishing

7.3 Printing Process

- 7.3.1 Printing methods and machineries
- 7.3.2 Comparison between dyeing and printing
- 7.3.3 Styles and methods of printing Flat Screen and Rotary Screen design preparation - Brief study only

7.4 Finishing Process

- 7.4.1 Finishing method and machineries
- 7.4.2 Advantages of finishing - Finishing of cotton fabric with stiffeners (Starch, PVA, Polyvinyl Acetate) and softeners (Anionic, Cationic and non-ionic)
- 7.4.3 Chemicals used in dyeing, printing and finishing

8. FABRIC MANUFACTURE (15)

- 8.1 Types of fabric, classification and definition
- 8.2 Warp Winding, Weft Winding, Warping & Sizing
- 8.3 Automatic Weaving and knitting machine
- 8.4 Properties of fabric, Fabric structure and design
- 8.5 Fabric production machineries
- 8.6 Defects in fabric

9. INDUSTRIAL ENVIRONMENTS AND QUALITY CONTROL (10)

- 9.1 Quality control activities in textile industries
- 9.2 Major Pollution in textile industries
- 9.3 Treatment of different types of waste generated from textile industries

10. TEXTILE INDUSTRIES IN NEPAL (15)

- 10.1 Past and current status of textile industries in Nepal
- 10.2 Contribution of Nepalese textile industries (Carpet, Pashmina, Woolen garments, readymade garments etc.) in national economy
- 10.3 Nepalese Industry associations related to manufacturing and trading of textile products
- 10.4 Importance of Textile Industries in Nepal Army

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यस पेशा सम्बन्धी विषयको पाठ्यक्रममा ईकाईहरुबाट सोधिने प्रश्नहरुको संख्या निम्नानुसार होनेछ।

विषय	Weightage	परीक्षा प्रणाली			कै.	
		विषयगत (Subjective)				
		वस्तुगत (Objective) बहुवैकल्पिक प्रश्न (MCQs) (प्रश्न x अङ्क)	छोटो उत्तर (प्रश्न x अङ्क)	लामो उत्तर (प्रश्न x अङ्क)		
1.	55	10x1	3x5	1x10		
2.		10x1				
3.		5x1				
4.		5x1				
5.	55	10x1	3x5	1x10		
6.		10x1				
7.		10x1				
8.	40	5x1	3x5	1x10		
9.		5x1				
10.		5x1				
Total	150	75x1=75	9x5=45	3x10=30		

प्राविधिक उपसेनानी टेक्सटायल इन्जिनियर (आन्तरिक) को प्रयोगात्मक परीक्षाको
पाठ्यक्रम

समय: ९० मिनेट

पूर्णाङ्क: ५०

उत्तीर्णाङ्क : २५

S.N.	Topic	Marks	Time (Minutes)
1.	Identification of machine and tools for Production process of blanket, knitted product and garments	10	15
2.	Production process of fabric/blanket manufacturing	5	15
3.	Production process of knitted fabric manufacturing	5	10
4.	Production process of garments manufacturing	5	10
5.	Fabric structure and design	5	5
6.	Finishing (dyeing, printing, washing)/Raising and engraving process	5	5
7.	Textile testing and quality control	5	15
8.	Viva	10	15
	Total	50	90

[Handwritten signatures and marks]