

Syllabus for the subject

of

# **WORKSHOP CALCULATION & SCIENCE**

(For 3rd & 4th semester)

Under

**CRAFTSMEN TRAINING SCHEME (CTS)**

For: -

- 1) Spinning Technician
- 2) Textile Wet Processing
- 3) Weaving Technician.

Re-Designed

in

2015

By

**Government of India**

**Ministry of Skill Development & Entrepreneurship**

**Directorate General of Training**

**CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE**

**Block – EN – 81 SECTOR – V, SALT LAKE CITY, KOLKATA – 700 091**

3<sup>rd</sup> semester

Workshop calculation & Science for the Trades of

**1) Spinning Technician 2) Textile Wet Processing 3) Weaving Technician**

Calculation		Science			
Sl. No	Description	Hrs.	Sl. No	Description	Hrs.
1	Fraction, Decimal, LCM, HCF, Multiplication and division of fraction. Conversion of decimal into fraction and vice-versa.	21	1	Definition of specific gravity. Density and relative density. Calculation of density of a body.	21
3.	Motion:- Problems on Laws of motion and velocity.		3	Heat treatment of steels hardening, annealing, tempering, normalizing, case hardening, standards and Measurement.	
4.	Units of volume. Calculations related to volume, unit conversions. Calculations on relation between volume, mass and density.		4	Horse Power- Meaning of HP, IHP BHP and applied problems	

4<sup>th</sup> semester

Workshop calculation & Science for the Trades of

**1) Spinning Technician 2) Textile Wet Processing 3) Weaving Technician**

Calculation			Science		
Sl. No.	Description	Hrs.	Sl. No.	Description	Hrs.
1	Simple problems on profit and loss. Simple and compound interest.	21	1	Power transmission by shaft, belts & pulley. Belt drive—Transmission loss due to slip, belt length calculation.	21
2	Form of energy – Description of terms potential & Kinetic, energy, examples		2	Friction –definitions, its effect & types. Laws of friction. Advantage and disadvantage of friction.	
3.	Heat and temperature, their units, different between heat & temperature. Different scales of temperature. Different mode of transmission of heat, conduction, convection, radiation.		3	Moment and lever – Moments, unit, arm of couple, Principal of Moment, moment of couple, lever, tongue. Centre of Gravity.	
4.	Indices: Laws of indices related problems.  Quadratic Equation: Introduction, solution of simple Quadratic equation and related problems.		4	Magnetism: Magnetic material, magnetic field, flux density, magnetic moment, m.m.f. Reluctance, permeability, susceptibility, electromagnet, solenoid and its practical applications.	