

Syllabus for the subject
of
**WORKSHOP
CALCULATION & SCIENCE**
(For 3rd & 4th semester)

Under
CRAFTSMEN TRAINING SCHEME (CTS)

(For Wireman)

Re-Designed

in

- 2015 –

By

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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

3rd semester
Workshop Calculation and Science

For the Trade of 'Wireman'

Calculation			Science		
Sl. No.	Description	Hrs.	Sl. No.	Description	Hrs.
1	Indices: Laws of indices related problems.	22	1	Elasticity: Stress, strain, Modulus of elasticity, elastic limit, Hooks law, young's modulus.	22
2	Square Root: Square and square root, method of finding out square roots. Simple problem using calculation.		2	Material: Introduction, types and properties. Uses of Conducting, Semi-conducting and insulating materials.	
3	A.C Waveform Calculation: Calculation of r.m.s, average, instantaneous value, peak value. Peak to peak value, Frequency and wavelength calculation and their relationship		3	Magnetism: Magnetic material, magnetic field, flux density, magnetic moment, m.m.f. Reluctance, permeability, susceptibility, electromagnet, solenoid and its practical applications.	
4	Series And Parallel Connection of Electrical and Electronic components: Calculation Series and parallel connection of Resistors.		4	Pressure:- Pneumatic pressure, PSI, bar, atmospheric pressure, pressure gauge and absolute pressure.	

4th semester Workshop Calculation and Science

For the trade of 'Wireman'

Sl. No.	Description	Hrs.	Sl No.	Description	Hrs.
1	Fraction: Fraction, Decimal fraction, LCM, HCF, multiplication and division of fraction. Conversion of decimals into fraction and vice versa.		1	Friction: - Laws of friction, co- efficient of friction, angle of friction, simple problems related to friction. Lubrication Concept on terms like pressure, atmospheric pressure, gauge pressure. Heat treatment necessity difference methods.	
2	Estimation & costing:- Simple estimation of the requirement of materials and labour for domestic wiring.		2	Forces: - Resolution and composition of forces. Representation of force by vectors, simple problems on lifting tackles like jib wall, crane-Solution of problems with the aid of vectors. General condition of equilibriums for series of forces on a body. Law of parallelogram, Triangle Law, Lami's theorem.	
3	Simple Problems on Profit & Loss. Simple and compound interest.		3	Heat and temperature: Definition, difference between heat and temperature. Units of temperature. Conversion of temperature units.	