

**Syllabus  
For The Trade of**

**FIRE TECHNOLOGY AND INDUSTRIAL  
SAFETY MANAGEMENT**

**Under**

**Craftsmen Training Scheme (CTS)**

**Designed in – 2011**

**Government of India  
Ministry of Labour & Employment (DGE&T)  
CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE  
EN Block, sector – V, Salt Lake,  
Kolkata – 700 091**

**List of Members present in the Trade Committee Meeting for designing the syllabus of FIRE TECHNOLOGY AND INDUSTRIAL SAFETY MANAGEMENT under Craftsmen Training Scheme(CTS) at DELHI INSTITUTE OF FIRE ENGINEERING, NEW DELHI on 10.02.2011**

**Shri Anil Kumar, Director In Charge**

SL NO	NAME & DESIGNATION S/SHRI	REPRESENTING ORGANIZATION	REMARKS
1	V K Garg, Chairman	Delhi Institute of Fire Engineering, New Delhi	Chairman
2	Capt Krishan Kumar, Vice Chairman	Delhi Institute of Fire Engineering, New Delhi	Member
3	Anil Kumar, Director	CSTARI, Kolkata	Member
4	Mrs Anita Srivastava, Deputy Director	DGE&T Hqrs, New Delhi	Member
5	L K Mukherjee, Deputy Director	CSTARI, Kolkata	Member
6	Dr. HS Kaparwan, Ex-Scientist F	DRDO, New Delhi	Member
7	Dr. Adarsh Kumar, Sr. Scientist	PUSA, New Delhi	Member
8	Alok Sharma, General Manager(Safety)	Indraprastha Gas Ltd., New Delhi	Member
9	Sunil Chaudhary, Asst. Director	Delhi Fire Services, New Delhi	Member
10	K S Dabas, DGM (Fire & Safety)	Indira Gandhi International Airport, New Delhi	Member
11	Jitendra Singh, Ex- Asstt. Comdt. Sr Fire Expert	Central Industrial Security Force	Member
12	Mrs. Pushpa Jindal, Principal	Govt. Sr Sec School, N Delhi	Member
13	M N Sharma, Principal	ITI, PUSA, New Delhi	Member
14	B P Minocha, Instructor	ITI, PUSA, New Delhi	Member
15	V P Jayarajan, Principal	Delhi Institute of Fire Engineering, New Delhi	Member
16	Col J N Pandey, Director Training	Delhi Institute of Fire Engineering, New Delhi	Member
17	Lt P S Bhadana, Addl Director Training	Delhi Institute of Fire Engineering, New Delhi	Member
18	Narender Krahana, Sr Instructor	Delhi Institute of Fire Engineering, New Delhi	Member
19	B L Chauhan, Sr. Instructor	Delhi Institute of Fire Engineering, New Delhi	Member
20	Sub Vijay Singh, Sr Instructor	Delhi Institute of Fire Engineering, New Delhi	Member

## GENERAL INFORMATION

1. Name of the Trade : FIRE TECHNOLOGY AND INDUSTRIAL SAFETY MANAGEMENT

2. N. C. O. code No :

3. Entry Qualification :

a. Passed class 12<sup>th</sup> Exam. Under 10+2 system of education or its equivalent.

b. The minimum physical requirements are

i. Height - 165 cm

ii. Weight - 52 kg

iii. Chest - Normal 81 cm - Expanded 85 cm

iv. A registered MBBS doctor must certify that the candidate is medically fit to undertake the course

4. Duration of Craftsman Training : One Year

5. Space Norm : Class Rooms 1 Sq meter/trainee  
10000 Sq Yard (Practical Training Area)

6. Power Norms : 2 KW

7. Trainees per unit : 20

8. Qualification of the Instructor :

Degree in Fire & Safety Engineering/Degree in Fire Science with one year experience in the relevant field.

OR

Post Graduate Diploma in Industrial Safety Engineering/ Fire and Industrial Safety Engineering with two year experience in the relevant field.

OR

Defence Officers/ JCOs/ NCOs with 10 Yrs of experience in the relevant field

**Note:\* Common 10000 Sq Yard Practical Training area is required / used for three courses viz Health Safety and Environment, Fireman, Fire Technology and Industrial Safety Management, if an institute is running all the above mentioned trades.**

**SYLLABUS FOR THE TRADE OF FIRE TECHNOLOGY AND INDUSTRIAL SAFETY MANAGEMENT**

**UNDER CRAFTSMAN TRAINING SCHEME (CTS)**

Wk. No.	Theory	Practical
1	<p>Importance of safety and general precautions observed in the Institute and in the section. Importance of the trade in the development of Industrial economy of the country. What are the related instructions, subjects to be taught, achievement to be made, recreational facility, medical facilities and other extra curricular activities of the Institute. (All necessary guidance to be provided to the new comers to become</p>	<p>Familiarisation with the Institute, Documentation of Student, Issuance of Dress, Books, Hostel Accommodation (if required) and Store. Importance of trade training, Equipments used in the trade, types of work done by the trainees in the trade. Introduction to safety equipments and their uses. Introduction of first aid, Road safety, operation of Electrical mains.</p>
	<p>familiar with the working of Industrial Training Institute system including stores procedures, Safe and proper usage of electric and water resources. Introduction of First aid. Road safety. Operation of electrical mains. Introduction of safety kits.</p>	
2	<p><b>Basic Physics and Chemistry related to Fire</b> : Definition of Matter and energy, Physical properties of matter like Density, specific gravity, Relative density, Vapour density, Melting &amp; Boiling point, flammable limits, latent heat, Effects of density on behaviour of gases, , Basics of oxidizing and reducing agents, Acids. Flammable liquids-classification and types of tanks, Dust and Explosion, Liquid and Gas Fires, LPG.</p>	<p>Demonstration of:-</p> <ul style="list-style-type: none"> <li>• Various acids.</li> <li>• Alkalis &amp; Gases</li> <li>• Organic flammable liquids and commonly used industrial chemical-Fire-fighting technique.</li> </ul>
3	<p><b>Anatomy of Fire</b> : Definition of Combustion, Elements of Combustion, Products of Combustion, Heat of reaction and calorific value, Flash point, Fire point, Ignition temperature and spontaneous combustion.</p> <p><b>Classification of Fire &amp; Extinguishers</b> - Classification of Fire and types of extinguishers, maintenance, method of operation. Techniques of fire extinction-Smothering cooling and starvation. Halon and its detrimental effect on environment. Alternatives of Halon.</p>	<p>Drill I : Water CO2 Extinguisher Drill 9L                      Drill II : Chemical Foam Extinguishing 9 L                      Drill III : Mechanical Foam Extinguisher 9L                      Drill IV : Stored Pressure Water Extinguisher 9 L                      Drill V : Dry Chemical Powder 5 Kg                      Drill VI : Dry Chemical Powder 10 Kg                      Drill VII : ABC Extinguisher 5 Kg/ 10 Kg                      Drill VIII : CO2 Extinguisher 4.5 Kg</p>
4	<p><b>Hydraulics</b> : Pressure and Head, pressure</p>	<p>Demonstration of effect of pressure on</p>

4	<p><b>Hydraulics</b> : Pressure and Head, pressure and Flow, mensuration, Nozzle's discharge, calculation of water capacity of tank, requirement for specific fire size.</p> <p><b>Electricity</b> : Fundamentals of electricity, Generation and Distribution, Common causes of electrical fire and its remedial measures, electrical hazards including static electricity and protective measures and fire-fighting procedure, Elementary knowledge of Fire Protection and fire-fighting in different premises, electrocution.</p>	<p>Demonstration of effect of pressure on pump discharge rate and on ground use of pressure pumps.</p> <p>Calculation of discharge capacity of pump, Techniques to Handle various branches. Familiarise with various type of electrical devices used for safety, Demonstration recognition of electrical hazards Control measures adopted.</p>
5	<p><b>Foam &amp; Foam Making Equipment</b> : Water as an extinguishant - its merits, demerits and modification. Introduction to all types of foam concentrate, properties of foams and techniques of extinguishment by foam, types of foams, Characteristics of good foam, foam making Equipment-Mechanical. High Expansion and Low Expansion Foam. Storage of foam Compound. Dry Chemical Powder- Types and application. Carbon dioxide as extinguishant.</p>	<p>Familiarization of foam making branch</p> <ul style="list-style-type: none"> <li>• Use of FB2X, FB5X and FB10X,</li> <li>• Care and maintenance of foam equipments,</li> </ul> <p>Fire fighting Technique</p>
6	<p><b>Hose and Hose Fittings</b> : Types of Suction and Delivery Hoses, Hose-reel, causes of decay, Care and Maintenance, Marking of Hose, Repair of hose, Standard tests of Delivery Hoses, Definition and different groups of Hose Fittings. Types and Construction of Suction; Monitors, Water-cum-foam Monitor, Nozzles &amp; branch holders, collecting head and suction hose, Fittings; frost valve, Deep lift suction fittings, Breechings, Adaptors and Blank cap suction reduction piece, Hose Ramps, Care &amp; Maintenance of Hose Fittings.</p>	<p>Familiarization and demonstration of Hose and Hose fittings</p> <p>Drill – I : Hose pick up Drill</p> <p>Drill – II : Hose Running Drill with one hose</p> <p>Drill – III : Hose Running with two hose</p> <p>Drill – IV : Hose Running with Three hose</p> <p><b>Industrial/ Fire Service Station Visit</b></p>
7	<p><b>Automatic Fire Detection cum Alarm</b></p>	<p>Familiarization and Demonstration of working detector</p>

	<p>Detectors- Smoke, Heat, Flame/Gas Detectors, Operating principles, Control Panel.</p> <p><b>Small &amp; Special gears</b> : Function &amp; Construction-G.R. Tools; Function &amp; Construction-Breaking in and Cutting tools, Pulley blocks; Function &amp; Construction-Lighting Function &amp; Construction-Lifting &amp; Rescue tools; Operation of hydraulically operated, diesel operated and electrically operated tools, . Care &amp; maintenance of equipment.</p>	<ul style="list-style-type: none"> <li>• Heat</li> <li>• Flame detectors</li> </ul> <p>Demonstration of Control Panel, MCP.</p> <p>Familiarization with various types of Fire Fighting Small and Special rescue gear at Fire Service Station.</p> <ul style="list-style-type: none"> <li>• Practical Use of equipments like cutting tools</li> <li>• Lifting tools</li> </ul> <p>Maintenance of tools.</p>
8	<p><b>Ladders</b> : Introduction, Types of Ladders, Construction features of conventional Ladders, Operational use, Elementary Knowledge of T.T.L. &amp; Snorkel (As per Bureau of I.S.).</p>	<p>Demonstration and familiarization of</p> <p>Extension Ladder</p> <ul style="list-style-type: none"> <li>• Introduction of parts of extension ladder</li> <li>• Rescue Operation from buildings.</li> </ul> <p>Drill I : Pitching of ladder  Drill II : Climbing the ladder  Drill III : Use leg Lock  Drill IV : Ladder Drill with Fireman Lift  Drill V : L2 Drill</p>
9	<p><b>Pump &amp; Pump Operation</b> : Classification of common types in use, Methods of Priming, Testing and Fault-finding, care and Maintenance and standard Test, Introduction of centrifugal pump, care and maintenance.</p>	<p>Familiarization and demonstration of Centrifugal pump.</p> <p>Drill I : Pen water pump drill (Dry Drill)  Drill II : Lose water pump drill with hard/soft suction.</p>
10	<p><b>Water Tender and Special Appliance</b>  Introduction to Rescue/ Emergency Tender, CO2 tender, DCP Tender, Hose laying lorry, Water Bouser and High pressure pumps, special appliances.</p>	<p>Familiarization and demonstration of Water tender</p> <p>Water tender drill with close water.</p> <p>Drill I : L-2 Drill with ladder and water tender</p>

		<p>tender</p> <p>Drill II : Foam Drill with FBIOX single delivery</p> <p>Drill III : Foam Drill with FB5X single delivery</p> <p>Drill IV : Wet Drill with double delivery</p> <p>Drill V : Dry Drill with double delivery</p> <p><b>Industrial/ Fire Service Station Visit</b></p>
11	<b>Breathing Apparatus</b> : Introduction of Types of B.A. Sets in use, Working principles and Care and maintenance.	<p>Familiarization and Demonstration of Parts of BA Set.</p> <p>Drill I : Donning, running and Rescue of casualty through tunnel.</p>
12	<p><b>Internal Assessment Test (2 Days)</b></p> <p><b>Hydrant &amp; Fittings:</b> Introduction of Hydrant and Water supplies, Hydrant Gears and Equipment, Marking, Testing, care maintenance Operation.</p>	<p>Familiarization and demonstration of Hydrant and its associated equipments.</p> <p>Hydrant Drill I : Opening of single line of three hoses.</p> <p>Hydrant Drill II : Change of burst hose</p> <p>Hydrant Drill III : Increase one length hose</p> <p>Hydrant Drill IV : Decrease one length hose</p> <p>Hydrant Drill V : Use of Collecting, breaching</p> <p>Hydrant Drill VI : Disconnect collecting breaching</p> <p>Hydrant Drill VII : Use of Dividing Breaching</p> <p>Hydrant Drill VIII : Disconnect of Dividing Breaching</p>
13	<b>First Aid, Resuscitation</b> : Definition of First-Aid, Qualities of first aider, Shock-Signs and Symptoms, Asphyxia-Signs and Symptoms, Wounds and Hemorrhage -Classification of injuries, Signs, Symptoms and management, Burns, Scalds and frost Bits signs and symptoms and management. Causes and types of fractures Sprain & Dislocation-Signs and symptoms, Snake	<ul style="list-style-type: none"> <li>• Familiarization and study First Aid Box</li> <li>• Stretcher Drill</li> <li>• Fireman Lift Drill</li> <li>• Use Bandage</li> <li>• Standard drills on Ambulance</li> </ul> <p>Techniques of CPR</p>

		II) Two Sitter III) Three Sitter IV) Four Sitter V) Fireman lift VI) CPR drill VII) Choking VIII) Shaffer's Method IX) Rescue drill X) Sylvester's Method XI) Holgar Nielsen Method XII) Eve Rocking Stretcher Method XIII) Emerson Method XIV) Mouth to Mouth Respiration.
14	<b>Watch Room Procedure &amp; Mobilizing :</b> Identification of communication requirement of Fire Service, Watch Room, Control Room, Equipment Station Ground, Turn-out area, Area of Topography , and Telephone Call area, Mobilizing boards and maps. The log & occurrence book, introduction to Various lines, communication Equipment in Fire Service, Introduction to Radio Communication and Use of VHF Sets.	Demonstration of Switch Board.  Fire Alarm Operations.
15	<b>Salvage</b> - Introduction, Equipment for Salvage and working at Fires.  <b>Water Relay :</b> Types of relay-systems, water distribution System. Advantages and disadvantages-Calculation of hose.	Familiarization and demonstration of equipments involved in salvage Operation  Drill – I : Hose pick up Drill Drill – II : Hose Running Drill with one hose Drill – III : Hose Running with two hose Drill – IV : Hose Running with Three hose
16	<b>Fire Service Administration :</b> Fire Service Organization, Executive duties of Officer-in-Charge of a Fire Station, Administrative duties of Officer-in-Charge of a station (a) Writing of a report (b) Occurrence Book, (c) Hose Card/Register, (d) Fire reports, (e)	<b>Visit to Fire Service Station.</b>  Familiarisation to Fire Station Writing practices of

	Hose Card/Register, (d) Fire reports, (e) Workshop Orders, (f) Log books (g) Stock Registers (h) Orderly Room Registers, (i) Defaulter Register, (j) Leave Register, Station Discipline.	practices of 1) Occurrence Book 2) Duty Card/ Register 3) Log Book 4) Hose Book 5) Stock Register
17	<b>Disaster Management:</b> Natural and Man-made Disaster, Preparedness for disaster, use of various agencies, first responders, control of situation, Incident Command System (ICS).	On ground demonstration and practice of ICS, Simulated Practices to control life and properties damages from natural disaster.
18	<b>Discipline:</b> Introduction, Importance of Discipline, General Principles of discipline, essentials for discipline and outward Signs. <b>Practical Firemanship :</b> Qualities of Fireman and his important duties at a Fire Station and Fire ground.	Squad Drills in training ground.  Methods of entry into building, Searching for higher location of a trapped causality. Methods of rescue. Precautions to be observed when working in smoke laden buildings.
19	<b>Building Construction :</b> Introduction, highlighting importance of the subject, Classification of building in the country, Building materials and their behavior under fire conditions, signs of collapse of building, various types of occupancies and fire fighting techniques, Importance's of fire escapes with respect to there positioning, Reference to NBC part II fire construction and provisioning of fire fighting measures.	<b>Construction Site Visit</b>  Familiarization at construction site. Introduction and identification of building material. Planning of escape routine.
20	<b>Fixed Fire Fighting Installations :</b> Introduction of Sprinkler System and their care and maintenance and operational Procedure, Elementary requirements of Drenchers, Rising Mains, Hose Reels And Down-comer, - Automatic Fire Alarms system.	Familiarization and demonstration of fixed installation at visit to high rise building. Practical training about Care and maintenance of sprinklers. Use of Automatic fire alarm system.  <b>Industrial Visit</b>
21	<b>Means of Escape:</b> Classification of escape routes with reference to N.B.C.  <b>Ropes and Lines :</b> Construction & Fibers used	<b>Visit to Construction Site</b> for familiarization about escape routes as Ladder Stair case etc.

	Deterioration Inspection and tests, methods of testing, care and maintenance, standard knots and their uses.	Drill II : Figure of 8 knots Drill III : Reef Knot Drill IV : Chair Knot Drill V : Half Hitch - Clove Hitch - Rolling Hitch - Tender Hitch Drill VI : Bowline
22	<b>Various Rescue techniques</b> Rescue technique from lift, Sewer, Collapsed building, motor vehicle accident, Well & river, Special equipment and training requirements for rescue operations.	Familiarization and demonstration of various equipments used in rescue of a causality.  • Ladder Drill with Fireman Lift  • Sewer Rescue drill,  • Stretcher drill
23	<b>Aircraft Fire and Rescue</b> : Some common terminology including 'Ejection Seats' etc, Preliminary about fire hazards in Air-Craft and action required for Rescue and fire-fighting, Resource of Fighting Fire in Air Ports	<b>Visit to Air Port</b>  Familiarize with various parts of aircraft CFT Ejection Seat Fire fighting equipments used in case of accident.
24	<b>Internal Assessment Test (2 Days)</b>  <b>Ship Fires</b> : Elementary knowledge of ship fire protection. <b>Rural Fire</b> : Fire Hazards in rural areas and cause of fire, Hay stacks, Special appliance & equipment, Method of Fire-fighting in rural areas.	Drill I : Fighting Hay Stack fire Fire Extinguisher Drills Drill I : Water CO2 Extinguisher Drill 9L Drill II : Chemical Foam Extinguishing 9 L Drill III : Mechanical Foam Extinguisher 9L Drill IV : Stored Pressure Water Extinguisher 9 L Drill V : Dry Chemical Powder 5 Kg Drill VI : Dry Chemical Powder 10 Kg Drill VII : ABC Extinguisher 5 Kg/ 10 Kg Drill VIII : CO2 Extinguisher 4.5 Kg
25	<b>Hazard and Risk</b> : Causes, Identification, Evaluation & Control. HAZOP, Sources for Information on Hazard Evaluation. Risk and Risk Analysis.	Hazard Evaluation and Risk Analysis exercise.
26	<b>Accident</b> : Industrial Accidents, Classification of Accidents, Need for the Analysis of Accidents, Accidents Reports, Methods Adopted for	Practical usages of Safety belt, helmets, gloves, and goggles.

	Accidents Reports, Methods Adopted for Reducing Accidents, Investigation of Accidents, Safety Slogans, Safety Precautions adopted in the Plant.	
27	<b>Safety Concept</b> : Introduction to Safety Management, Safety Policy, Safety Committee, , Responsibility of Management, Safety Officers Duties & Responsibilities, Safety Targets, Objectives, Standards, Practices and Performances.	Visit to industrial unit and adoption of safety Practice.
28	<b>FACTORIES ACT 1948 (Amended) :-</b> <b>Health</b> – Cleanness, Disposal of Waste , Ventilation and Temperatures, Dust & Fumes, Drinking Water, Lighting, Latrines & urinals. <b>Safety</b> - Fencing of machineries, Work on or near machinery in motion, Hoists and lifts, Pressure plants, Floors, Stairs and means of escape, Protection against fumes & gases, Safety offers. <b>Welfare</b> - Washing facilities in Dry clothing, Storing, Sitting, First Aid Appliances, Canteen, Shelters for rest & lunch, Crèches, Welfare officers, Right & Obligation of workers.	Visit to industrial unit to observe prevailing welfare measures and their condition.
29	<b>Lighting, Ventilation &amp; Work related stress:</b> Introduction to Lighting, Ventilation, Heat Stress, Cold Stress and Noise.  <b>Construction Industry</b> : General Safety Provisions related to construction industry, Safety in the use of Construction Machinery, Safe Access / Egress Importance of Good House Keeping.	Measurement of Heat & Noise  <b>Construction Site Visit</b> Practices of good House Keeping Study of egress and safe access.
30	<b>Safety in Engineering Industries</b> : Machine Operations & Guarding, Safety in the use of Machines, Safety precaution while using Hand Tools & Power Tools, Need for selection & Care of tools. <b>Material Handling</b> : Safety related to Mechanical and Manual Material Handling, Lifting Appliances, Transport / Earthmoving & Material Handling Equipments – Cranes, Forklift Truck, Hoists, Conveyors.	Hands on experience with Hand and power tools.  <b>Construction Site Visit</b> and identifying of causes of accident during material handling
31	<b>Working at Height, Confined Space</b> : Safety precautions related to Scaffolds, Ladders, Work at height including Roof Work, fall arrestors, Confined Space, Work Permit System, Excavation.	Demonstration with fall arrestor, Sewer Rescue, Excavation Site Visit.
32	<b>Personal Protective Equipment</b> : Need for Personal Protection Equipment, Selection, Use,	Demonstration and use of • Helmet

	<p>respiratory Personal Protective Equipment, Head Protection, Ear Protection, Face and Eye Protection, Hand Protection, Foot Protection, Body Protection.</p> <p><b>House Keeping and Waste Disposal:</b> Introduction of Good House Keeping &amp; Maintenance, Introduction of Disposal of Waste Material.</p>	<ul style="list-style-type: none"> <li>• BA Set</li> <li>• Body Harness</li> <li>• Gloves</li> <li>• Safety Goggles</li> <li>• Ear Protective Equipment (Ear muffs, Ear Plug)</li> <li>• Safety Shoes</li> </ul> <p>BA set, donning, running.</p>
33	<p><b>Occupational Hazards &amp; Dangerous Chemicals.</b> Introduction to Occupational Health Hazards &amp; Dangerous Properties of Chemicals, Dust, Gases, Fumes, Mist, Vapours, Smoke and Aerosols, Concepts of Threshold Limit Values, Classification of Hazards.</p>	<p>Analysis of MSDS and Identification of Chemicals.</p> <p>Practical hand in Laboratory about fumes and vapors.</p> <p>Preparation of symbols for hazardous chemicals and Physical carriage of chemicals, methods of storage.</p>
	<p><b>Hazardous Chemicals :</b> Dangerous Chemicals and substances, Introduction to Transportation and handling of dangerous chemicals and explosives, Storage of hazardous chemicals, Fire Safety and fire fighting.</p>	
34 to 49	<p><b>Industrial Training (Attached with Industries for On the Job Training)</b></p>	<p><b>Industrial Training (Attached with Industries for On the Job Training)</b></p>
50 & 51	<p><b>Revision</b></p>	<p><b>Revision</b></p>
52	<p><b>Examination</b></p>	<p><b>Examination</b></p>

**LIST OF TOOLS & EQUIPMENTS FOR ONE BATCH (20 TRAINEES)**  
**TRADE : FIRE TECHNOLOGY AND INDUSTRIAL SAFETY MANAGEMENT**

S.No	NAME OF THE TOOLS & EQUIPMENTS	QUANTITY
1.	Water CO2 Type Fire Extinguisher (9 Ltrs)	06
2.	Stored pressure Type Fire Extinguisher (9 Ltrs)	06
3.	Chemical Foam type Fire Extinguisher (9Ltrs)	06
4.	Mechanical Foam type Fire Extinguisher 9Ltrs	06
5.	CO2 Type Fire Extinguisher (4.5 Kg)	06
6.	BC Type Fire Extinguisher 5/10 Kg	04
7.	ABC Type Fire Extinguisher 5/10 Kg	04
8.	Extension Ladder (Size)45/35 ft *	02
9.	All types of Branches or Nozzles *	04
10.	Fire Hose *	
	a) 15m	10
	b) 30m	04
11.	First Aid Box *	02
12.	All Types of small gears *	1 Set
13.	BA Set (Negative & Positive Pressure) *	02
	a) Gas Cylinders	02
	b) Steel Back Plates	02
	c) Face Masks	02
14.	Portable Fire Pump / TFP *	02
15.	All types of couplings *	1 Set
16.	Hydrant-Stand Pipe Type *	02
17.	Fire Trays *	02
18.	Manual call point *	01
19.	Entry Suit/ Proximity Suit *	02
20.	Hose reel system *	01
21.	Nitorgen Cylinder *	01

22.	Hose Box	01
23.	Fire Fighting Point complete Set	01
24.	Section Hose 10 ft	02
25.	Section Wrench	02
26.	Metal Strainer	02
27.	Basket Strainer	01
28.	Sprinkler	02
29.	Ropes 100 ft Long	01
30.	Lines 100 ft Long	01
31.	Control Panel – Model -	01
32.	Personal Protective Equipment	
33.	a) Helmet (Type A,B,C)	20
34.	b) Laser Welding Safety Goggles	10
35.	c) Face Shield	10
36.	d) Welding Shield	10
37.	e) Ear Muff	10
38.	f) Ear Plug	10
39.	g) Canal Caps	10
40.	h) Safety Shoes	20
41.	i) Asbestos Gloves	10
42.	j) Electrical Hand Gloves	10
43.	k) Hand Gloves (Rubber)	10
44.	l) Dust Mask	10
45.	Personal Protective Clothing for men	
	a) Safety Shirt	10
	b) Safety Trouser	10
	c) Safety Jacket	10
	d) Cooling Vest	10
	e) Gum Boots	10
46.	Personal Fall Arrest System (PFAS)	02

47.	Tripod	*	02
48.	Pulley	*	02
49.	Suspended Scaffold	*	02
50.	Gas Detector	*	02
51.	Plastic Tunnel (Sewer Rescue Drill)	*	04
52.	Body Harness		01
53.	Collecting Breeching	*	02
54.	Dividing Breeching	*	02
55.	Hydrant Flange	*	02
56.	Hydrant Key & Bar (With hydrant Spindle)	*	01
57.	Adopter for Air-Store Pressure	*	02
58.	Hydraulic Pressure Testing Machine	*	01
59.	Sprinklers Head (Bulb Type, Fusible Type)	*	02
60.	Safety Belt		01
61.	Computer System	*	06
62.	Computer Table	*	06
63.	Computers Chairs	*	06
64.	White Board		01
65.	L.C.D. Projectors		02
66.	UPS 650 VA offline	*	06
67.	All types of Detectors 1 Pcs. of each	*	04
68.	Flux meter	*	06
69.	Dosi meter	*	01
70.	Cut model of Fire Extinguisher		02
71.	Fire Suit ( Common for all classes)		02
72.	Fire Tender ( one for the Institute)	*	01
73.	Rescue Van ( one for the Institute)	*	01

LIST OF UNIROM FOR ONE BATCH

1.	Uniform	
	1. Uniform set	2 NO EACH
	2. Combat Dress	2 NO EACH
	3. PT Kit	2 NO EACH
	4. Track Suit	2 NO EACH