2.7 30507 FUNDAMENTAL OF FIRE ENGINEERING SCIENCE

UNIT I

1.1 History of fire service, Basic physics, Units, Guidelines for writing the units, Force, resultant force, Laws of force, Laws of motion, Mass and weight, work, power, energy, Law of conservation of energy,

1.2 Mechanics rest and motion, Distance and displacement, Speed and velocity, Acceleration, retardation, Acceleration due to gravity,

1.3 Newton laws of motion, Machines and engines, Efficiency, Friction

UNIT II

2.1 Basic Chemistry and physics of fire, Atomic structure, Elements, compounds, Pure substance and mixture, Physical and chemical changes, Condition for the changes, Energy changes,

2.2 Effects of heat on matter, Combustion, Temperature, Specific heat capacity, Catalyst, Neutralization, Sublimation,

2.3 Heat of decomposing, Chemical reaction, Exothermic reaction and endothermic reaction, Transmission of heat,

2.4 Flash and fire point, Ignition temperature, Flammables and combustible chemicals, Spontaneous combustion, Triangle of combustion, Tetrahedron fire, Spread of fire

UNIT III

3.1 Classification of fire, General Causes of fire, Detection of fire, Extinguishing methods, First aid firefighting equipment's,

3.2 Fire bucket, Fire beater, hose real hose, Portable extinguisher, depends on weight, depends on operating method, depends on content,

3.3 Depends on position of nozzle, Construction, Operation, Maintenance, Refilling

UNIT IV

4.1 Fixed firefighting installations using water, Hydrant or fire water system,

4.2 Classification of hydrant system, sprinkling system, Major foam pourer system,

4.3 Steam drenching system, Emulsification, Special fires and firefighting, Air craft fire, Ships fire

Reference Books:

1. Principles of Fire Safety Engineering: Understanding Fire and Fire Protection Paperback by Das a K (Author)
2. Electrical Safety Fire Safety Engineering And Safety Management" by Rao S