

2.10 30510 OCCUPATIONAL HEALTH AND FIRST AID

UNIT-1

- 1.1 Concept and spectrum of health, functional units and activities of occupational health services, occupational and work related disease,
- 1.2 Levels of prevention of diseases, notifiable occupational diseases such as silicosis, asbestosis, pneumoconiosis, siderosis, anthracosis, aluminizes and anthrax.
- 1.3 Lead-Nickel, chromium and manganese toxicity, gas poisoning (such as CO, ammonia, coal and dust), their effects and prevention, Industrial toxicology, local and systemic and chronic effects.
- 1.4 Temporary and cumulative effects, threshold limit values, calculation of TLVs, carcinogens, mutagens, teratogens.
- 1.5 Instruments for Radiation detection and measurement. Early recognition of radiation hazard, personal monitoring devices, Medical support.
- 1.6 Hazards associated with the following radiations and preventive measures, Laser, infra-red, ultra violet and ELF.

UNIT-2

- 2.1 Recognition, evaluation and control of physical hazards. Vibration, description and measurement of vibration. Vibration control methods.
- 2.2 Effects of whole body vibration on human body and control measures.
- 2.3 Noise, noise measurement, evaluation, noise control methods, hearing loss, causes, Biological effects of noise exposure.
- 2.4 Thermal stress, heat disorders and health effects such as heat exhaustion, heat cramp etc. WBGT index, acclimatization.
- 2.5 Ventilation systems, purpose of ventilation, general principles ventilation requirements. Physiological and comfort level.
- 2.6 Natural ventilation, Dilution ventilation, Mechanical ventilation, Local exhaust ventilation, Ventilation measuring instruments.
- 2.7 Fundamentals of hood and duct designs. Standards on ventilation.
- 2.8 Purpose of lighting. Advantages of good illumination. Lighting and the work. Sources and kinds of artificial lighting principles of good illumination.
- 2.9 Design of lighting installation. Maintenance. Lighting and colour. Standards on lighting and illuminations.

UNIT-3

- 3.1 Aims and Objectives. First Aid principles, Role of the first aider-sequence of action on arrival at scene. Vital signs, breathing, pulse.
- 3.2 Introduction to the body, basic anatomical terms, body cavities, head, cranium, thorax, abdomen and pelvis.
- 3.3 Biomechanics, Structure and functions of musculoskeletal systems, tendons, ligaments, fascia, bone, muscles, joints and basic mechanisms.

- 3.4 The respiratory system-respiratory failure, asphyxia, abdominal thrust in Heimlich manoeuvre. Chest injuries, types, fractured ribs, pneumothorax, haemothorax.
- 3.5 The nervous system, functions, components, brain, cerebrum, cerebellum, medulla oblongata, cerebro, spinal fluid, spinal cord, autonomic nervous system.
- 3.6 Unconsciousness causes, level of consciousness, management of unconscious casualty, problems of unconsciousness.
- 3.7 Fainting, recognition, management, aftercare. Diabetic, hypoglycaemia, hyperglycaemia, management. Seizures (epileptic fits, convulsions) features management, stroke. Head injuries, fractures of the base, vault and sides of skull.

UNIT-4

- 4.1 The circulatory system, heat attack, chest compression, CPR. Shock, causes, signs and symptoms management of shock. Eye, eye injuries, foreign body in eye-eye trauma-corrosive chemical in eye-arc eye.
- 4.2 Wounds bleeding, classification, types of wounds, care of wounds, bleeding from specialists. Fractures, classification of fractures-principles of immobilization- sprains and dislocation.
- 4.3 Broad and narrow fold bandages, hand bandages, slings. The skin. Burns rule of nines, pure thermal burns.
- 4.4 Electric burns. Chemical burns. Radiation burns. Cold burns. Poisoning. Physical fitness. Lifting, casualty handling. Use of stretchers.

Reference Book:

1. Encyclopedia of Occupational Health and Safety: Vol I & II -ILO
2. Industrial Environment and its evaluation and control:
3. Clayton & Clayton, Patty's Industrial Hygiene and Toxicology:
4. Manual of first aid to the injured: St. John Ambulance Association.
5. First aid textbook: American National Red Cross
6. V.V. Yudenich, Accident First Aid, Mir Publishers, Moscow