

# **AMSF-06 OCCUPATIONAL HEALTH AND FIRST AID**

## **UNIT-1 CONCEPT AND SPECTRUM OF HEALTH**

- 1.1 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, aluminosis and anthrax- Lead-Nickel, chromium and manganese toxicity
- 1.3 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. Hazards associated with the following radiations and preventive measures- Laser, infra-red, ultra violet and ELF.

## **UNIT-2 RECOGNITION, EVALUATION AND CONTROL OF PHYSICAL HAZARDS**

- 2.1 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. Natural ventilation- Dilution ventilation- Mechanical ventilation- Local exhaust ventilation-Ventilation measuring instruments.
- 2.6 Fundamentals of hood and duct designs. Standards on ventilation.
- 2.7 Purpose of lighting. Advantages of good illumination. Lighting and the work.
- 2.8 Sources and kinds of artificial lighting principles of good illumination.
- 2.9 Design of lighting installation. Maintenance.
- 2.10 Lighting and color. Standards on lighting and illuminations.

## **UNIT-3 AIMS AND OBJECTIVES**

- 3.1 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. Biomechanics- Structure and functions of musculoskeletal systems, tendons, ligaments, facial, bone, muscles, joints and basic mechanisms.
- 3.3 The respiratory system-respiratory failure- asphyxia- abdominal thrust in Heimlich man oeuvre. Chest injuries- types-fractured ribs- pneumothorax- haemothorax.
- 3.4 The nervous system-functions-components- brain- cerebrum- cerebellum- medulla oblongata- cerebro- spinal fluid- spinal cord-autonomic nervous system.

- 3.5 Unconsciousness-causes- level of consciousness- management of unconscious casualty- problems of unconsciousness.
- 3.6 Fainting recognition-management- aftercare. Diabetes- hypoglycemia- hyperglycemia- management. Seizures (epileptic fits, convulsions) features- management, stroke. Head injuries fractures of the base- vault and sides of skull.

#### **UNIT-4 THE CIRCULATORY SYSTEM**

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

#### **References Books:**

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 text book : American National Red Cross

