PARAMEDICAL COUNCIL OF INDIA

ACCIDENT & EMERGENCY TECHNICIAN

SYLLABUS

Ch. No.157/1, Near Laxmi Nagar,Metro Station Gate No 1,Vikas Marg,Delhi-92

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COURSE DURATION:-

- It is 2 years + 6 months internship full time Diploma Course

ELIGIBITY:-

- Candidate must have passed 12th with Physics, Chemistry, Biology or Physics, Chemistry, Math's with 35% marks in Intermediate exams. (FromUP board or any other recognized board).
- Candidate must have completed age of 17 years of age as on 31st December of admission year. There is no maximum age limit for theadmission.

FIRST YEAR

1) ANATOMY,PHYSIOLOGY,BIOCHEMISTRY
2) ENGLISH,HOSPITAL & PATIENTS ORIENTATION,COMPUTERS
3) INTRODUCATION TO EM EMERGENCY MEDICAL SERVICE (EMS)

SECOND YEAR

1) LIFE SUPPORT & RASUSCITATION,TRAUMA CARE
2) PATHOLOGY,MICROBIOLOGY
3) PHARMACOLOGY,CILINCAL MEDICINE
4) TRIAGE AND GENERAL & EMERGENCIES

FIRST PAPER: SYLLABUS COVERS

1. ANATOMY, PHYSIOLOGY, BIOCHEMISTRY

1. Introduction to Anatomy.

2.Anatomical terms, planes.

3.Organization of Human body cell, tissue, organ system.

4. Muscular Skeletal System.

5.Bones – Types, structure, division of skeletal system, names of bones, parts, joints & classifications.

6.Muscles – structure and types.

7.Anatomy of Nervous System.

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8.Anatomy of Circulatory system, General system of circulation, Heart, General plane circulation (Systemic, pulmonary, portal), Name of arteries/veins.

9.Lymphatic System.

10. Anatomy of Respiratory System.

11. Anatomy of Digestive System.

12. Accessory glands of Digestion (Liver, Gall Bladder, Pancreas)

13. Excretory System – Kidney, Gross Structure, Excretory ducts, Ureter, Urinary Bladder, Urethra.

14. Endocrine glands, Position, Hormones and function, pituitary, Thyroid, Parathyroid, Adrenal glands.

2. ENGLISH, HOSPITAL & PATIENTS ORIENTATION, COMPUTERS

1. Hospital & patients Orientation.

2. Hospital orientation for patients is a process that helps patients feels comfortable and safe during their hospital stay.

3. Helps patients feel comfortable and safe, and understand the hospital.

4. Includes information about the hospital's facilities and services.

5. Traditionally, patients receive orientation in person from a nurse. Digital video orientation may also be used.

6. Hospital initiatives, such as the REACH rule.

7. Medication administration.

8. Handover.

9. Hand hygiene.

10.Use of anti-slip.

11. Mealtimes and processes.

12.Visiting hours.

13. Computers can perform a wide range of tasks by running programs, which are generic sets of operations.

14. System utilities are software that keep the computer running smoothly and safely. Examples of system utilities include antivirus software and file management tools.

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3. INTRODUCATION TO EM EMERGENCY MEDICAL SERVICE (EMS)

1. Environmental Management System and Emergency Medical Services.
2. An EMS helps an organization manage its environmental impact and reduce risk. It can help organizations.
3. Understand how their activities affect the environment and nearby people.
4. Identify how environmental issues may affect their business.
5. Manage resources.
6. Improve environmental performance and sustainability.
7. Reduce non-compliance risk.
8. Improve health and safety practices.
9. Minimize business overheads.
10. Emergency Medical Service (EMS) is a system that provides immediate medical care and transportation to patients who are experiencing a medical emergency.
11. EMS is also known as an ambulance service or paramedic service.
12. EMS provides urgent medical care and transportation to patients who are experiencing a medical emergency. The goal is to treat the patient or arrange for their timely transport to a hospital or other facility where they can receive definitive care.
13. EMS is activated when an incident causes serious illness or injury.
14. EMS provides pre-hospital treatment and stabilization for serious injuries and illnesses.

    They also respond to accidents and other traumatic events, providing care for injuries such as broken bones, burns, and lacerations.
15. Swift intervention by trained paramedics can significantly impact patient outcomes and increase the chances of survival.

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SECOND PAPER: SYLLABUS COVERS

1. LIFE SUPPORT & RASUSCITATION, TRAUMA CARE

1. Cardiopulmonary resuscitation (CPR): A procedure that can double or triple a patient's chance of survival.
2. Automated external defibrillators (AEDs): A device that can be used to help sustain someone's life.
3. Airway management: Maintaining a patent airway during CPR.
4. Choking relief: Using the Heimlich maneuver to relieve choking.
5. Bleeding control: Using direct compression and elevation above the heart to staunch bleeding.
6. Ome other topics related to life support include: Advanced cardiac life support (ACLS), Carbon dioxide monitoring (capnography), and sudden cardiac arrest and death in pregnancy.
7. Trauma resuscitation is a high-risk, fast-paced process that involves a series of steps to evaluate and treat a patient who has been traumatically injured.
8. Airway: Ensuring the airway is adequate and restricting movement of the cervical spine.
9. Breathing: Evaluating breathing function.
10. Circulation: Assessing blood circulation and controlling hemorrhage.
11. Disability: Assessing neurological status.
12. Exposure: Controlling the patient's environment.
13. Trauma resuscitation usually takes place in a trauma bay in the emergency department and lasts around 20–30 minutes.

2. PATHOLOGY, MICROBIOLOGY

1. The study of disease, which is an abnormality that causes changes in the structure or function of the body. Pathology examines the causes, mechanisms, and extent of disease.
2. The study of microscopic organisms, such as bacteria, viruses, fungi, and protozoa. Microbiology research includes the study of the biochemistry, physiology, and ecology of these organisms.
3. The detection, characterization, and quantification of pathogens from patient samples to diagnose, treat, and manage infections.

4. The isolation and identification of microbial agents that cause infectious disease.
5. The study of disease and its cause, damage to the body, changes in organs and blood, and clinical symptoms.
6. The study of the immune system that protects against infection.
7. The study of the monitoring, control, and spread of diseases in communities.
8. The scientific manipulation of living organisms, especially at the molecular and genetic level.
9. Bacteriology: The study of bacteria.
10. Mycology: The study of fungi.
11. Phycology: The study of photosynthetic eukaryotes.
12. Protozoology: The study of protozoa, which are single-celled eukaryotes.
13. Virology: The study of viruses, which are non-cellular particles that parasitize cells.

3. PHARMACOLOGY, CILINCAL MEDICINE

1. Pharmacology is the study of drugs and medications, including their composition, origin, therapeutic use, and toxicology. Some topics in pharmacology include.
2. Pharmacodynamics: Studies the effects of a drug on biological systems.
3. Pharmacokinetics: Studies the effects of biological systems on a drug.
4. Clinical pharmacology: Studies the mechanistic basis of drug action through an understanding of human pharmacology and therapeutics.
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5. Drug discovery: The process of identifying potential new medicines.
6. Neuropharmacology: Studies the effects of drugs on the nervous system.
7. Anti-ulcer agents: Involves inhibiting acid secretion by blocking histamine receptors on the parietal cell of the gastrointestinal tract.
8. Molecular pharmacology: Uses tools to discover new drug candidates in a more specific and target-oriented manner.

9. Receptor pharmacology: Studies the interactions of receptors with drugs, endogenous ligands, and other xenobiotics.

10. Clinical medicine is the branch of medicine that deals with the diagnosis and treatment of diseases in human beings.

11. It is also concerned with the prevention of disease and the promotion of health. Clinical medicine includes both primary care and specialty care.

4. TRIAGE AND GENERAL & EMERGENCIES

1. Triage is the process of prioritizing patient care based on a number of factors, including the severity of the patient's condition, the availability of resources, and the patient's prognosis.

2. The goal of triage is to identify patients who need immediate care, and to assign them to the appropriate care area.

3. ED triage.

4. Inpatient (ICU) triage.

5. Incident (multicasualty).

6. Military (battlefield) triage.

7. Disaster (mass casualty) triage.

8. Emergencies can include a variety of unexpected events that pose a risk of injury or death and require immediate response.

9. Natural disasters: Severe weather, such as tornadoes, thunderstorms, and hail, as well as landslides and winter storms.

10. Accidents: Fires, aircraft crashes, and hazardous materials accidents.

11. Medical events: Heart attacks, which can cause severe chest pain or discomfort similar to indigestion.

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PRACTICAL

1. Identify Bones, joints.
2. Identify Structures of circulatory system.
3. Identify structures of respiratory system.
4. Identify parts of gastrointestinal system.
5. Identify parts of excretory system.
6. CPR Training.
7. BLS (Basic Life Support) Training.
8. First Aid.
9. Assessing the injury.
10. Obtaining medical treatment if necessary.
11. Interviewing injured employees and witnesses.
12. Observing the accidents scene and analyzing the facts.
13. Filing a worker's compensation claim.
14. Following up.
15. Taking corrective action.

BOOK

1. **LAB TECH ANATOMY AND PHYSIOLOGY –** BY DR. N. MURGESH
2. **LAB TECH COMMUNITY HEALTH –** BY DR. N. MURGESH
3. **LAB TECH GENERAL BIOCHEMISTRY –** BY DR. DINESH KUMAR SHUKLA, DR. N. MURGESH
4. **LAB TECH CLINICAL BIOCHEMISTRY -** BY DR. DINESH KUMAR SHUKLA, DR. N. MURGESH
5. **LAB TECH CLINICAL PATHOLOGY -** BY DR. N. MURGESH
6. **LAB TECH HISTOPATHOLOGY & CYTOPATHOLOGY –** BY DR. DINESH KUMAR SHUKLA, DR. N. MURGESH
7. **LAB TECH HAEMATOLOGY -** BY DR. DINESH KUMAR SHUKLA, DR. N. MURGESH
8. **LAB TECH BLOOD BANKING -** BY DR. N. MURGESH
9. **LAB TECH MICROBIOLOGY I -** BY DR. DINESH KUMAR SHUKLA, DR. N. MURGESH
10. **LAB TECH MICROBIOLOGY II -** BY DR. DINESH KUMAR SHUKLA, DR. N. MURGESH