PARAMEDICAL COUNCIL OF INDIA

DIPLOMA IN X-RAY & ECG 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
2) DARK ROOM TECHNIQUE
3) RADIO PHYSICS

SECOND YEAR

1) ELECTRICAL PHYSICS (INCLUDING GEN. PHYSICS)
2) RADIOGRAPHY

1. ANATOMY & PHYSIOLOGY

1. Introduction.

2.The cell.

3.The tissues.

4.Organs and system.

5.Skeletal system.

6.Joints of the skeleton.

7.Blood.

8.Lymphatic system.

9. Cardiovascular system.

10. Surface anatomy.

11. Endocrine System.

12. Components of food.

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2. DARK ROOM TECHNIQUE

1. Dodging and burning are two essential darkroom techniques that help us manipulate the exposure of specific portions of an image.
2. Dodging involves reducing the exposure to an area, thus lightening it, while burning entails increasing the exposure, resulting in darker regions.
3. A traditional technique for lightening and darkening specific areas of a photo. Dodging involves shielding areas of the paper from light to make them lighter, while burning exposes certain areas longer to make them darker.
4. Manipulating exposure times and aperture settings to achieve the desired tonal range and detail in a photograph.
5. Used to test and perfect the coating and exposure before making a print on a full sheet of paper.
6. A piece of darkroom equipment that turns negatives into full-sized prints. An enlarger timer helps to expose the print for the correct amount of time.
7. A tool used for handling photographic paper while processing. Print tongs reduce or eliminate contact between skin and processing chemicals.
8. A type of lighting fixture that provides working light in photographic darkrooms. The light emitted by a safelight is in an area of the spectrum that does not affect light sensitive materials.
9. Basic structure of dark room.
10. Various accessories in dark room (Safe light, X-Ray films, Intensifying careens) various stage if film processing.
10. Developer and Fixer Film faults.

3. RADIO PHYSICS

1. X-Ray discovery, properties, production X-Ray Tube, Radiation hazards and protection devices Films badges. Fluoroscopic intensifying screens. Grides Ultrasonography.
2. Radio physics is a branch of physics that studies radiation, including its emission, propagation, and interaction with matter.
3. Radio waves are a type of electromagnetic radiation with the longest wavelengths in the electromagnetic spectrum.
4. They are generated by charged particles accelerating, and can be naturally created by lightning or astronomical objects.

5. Radio waves are used in radio communication, radar, broadcasting, and more.

6. This topic covers the use of radio methods to study the upper atmosphere, including the generation, absorption, and scattering of radio waves in the atmosphere.

7. It also covers the magneto-ionic theory, solar-terrestrial relations, and radio astronomy.

8. Radioactivity is the release of energy from the decay of the nuclei of certain kinds of atoms and isotopes.

SECOND PAPER: SYLLABUS COVERS

1. ELECTRICAL PHYSICS (INCLUDING GEN. PHYSICS)

1. Idea of units, Works power energy, Static Electricity, Current Electricity. Ohm's Law. Electrical circuits heating affect, Resistance.

2. Magnetism Transformer Rectification in X-Ray tube. H.L. Cables, Earthing Electrical azards.

3. Atomic Structure, Radio activity.

2. Glaucoma: A group of diseases that can damage the optic nerve and result in vision loss and blindness.

3. Motion: One-dimensional, two-dimensional, and three-dimensional motion, including uniform circular motion and relative motion.

4. Heat and temperature: Thermal expansion, calorimetry, and the properties of solids, liquids, and gases.

5. Electricity: Electric charges, electric current, electric circuits, resistance, and Ohm's Law.

6. Waves: Wave motion and oscillatory motion.

7. Vectors: Vectors and rotational motion.

8. Forces and energy: Forces and energy transfer in linear and rotary systems, and the law of conservation of energy.

9. Measurement skills: Basic measurement skills and problem solving.

10. Electricity is the set of physical phenomena associated with the presence and motion of matter possessing an electric charge.

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2. RADIOGRAPHY

1. General Principles of Radiography.
2. X-Ray Machines operation.
3. Records of patients.
4. Medici-Legal aspects stock taking and stock keeping, aspect of patient first aid.
5. Radiography is a technique that uses ionizing or non-ionizing radiation to create images of an object's internal structure.
6. In medicine, radiography is used to create images of the inside of the body to help diagnose diseases and plan treatments. It's used in a variety of procedures, including.
7. Dental exams, Mammography, Orthopedic evaluations, Chiropractic exams, and Verifying surgical markers before invasive procedures.
8. Radiography works by passing X-rays through the body onto film or a computer. Different tissues allow different amounts of X-rays to pass through, so they appear in different shades of black and white on the image.
9. Radiography can also be used in other applications, such as: Industrial radiography, Airport security, and determining ancestry from skeletal remains.
10. Description. It is used to diagnose or treat patients by recording images of the internal structure of the body to assess the presence or absence of disease, foreign objects, and structural damage or anomaly.

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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