

**School Name: School of Health Sciences**  
**Course Title: Conventional Radiography Equipment**  
**Course Code: BHRI-303**  
**Semester: III**

**Program Name: BRIT**

- Define an X-ray tube and mention its basic construction.
- What is a high tension generator for X-ray machines?
- What is the principle of a synchronous motor timer?
- Describe the function of a light beam collimator.
- What is the anode heel effect?
  
- Explain the construction and working principle of a gas-filled X-ray tube.
- Discuss the role of capacitance filter control and stabilizing equipment in X-ray machines.
- Explain the differences between clockwork timers, electronic timers, and photometric timers.
- Explain the role and working principle of relays in diagnostic X-ray machines.
- Discuss the construction, working, and rating chart of a rotating anode X-ray tube.
  - Explain the construction, working, and limitations of a gas-filled X-ray tube. Discuss its applications and any improvements made over time.
- Describe the filament circuit and the control of tube current in X-ray machines. Discuss the concept of space charge compensation and its significance in the operation of X-ray tubes.
- Discuss the construction and working principles of ion chamber-based timers and integrated timers. Explain how these timers contribute to accurate exposure control in X-ray machines.
- Explain the construction, working, and limitations of a gas-filled X-ray tube. Discuss its applications and any improvements made over time.
- What are the limitations of a gas-filled X-ray tube?
  
- Describe the function of a three-phase rectifier circuit.
- Explain the working of an ion chamber-based timer.
- Explain the design and control of scattered radiation using grids.
- What is the significance of over load protection in X-ray machines?
- Explain the construction and working principle of a gas-filled X-ray tube.
- What are the function and work of a mains voltage compensator?
- Explain the purpose and working of a kV compensator in X-ray machines.
- Describe the construction and working of an ion chamber-based timer.
- Discuss the importance and working of beam limiting devices in controlling scattered radiation.
- Explain the construction, working, and limitations of a gas-filled X-ray tube. Discuss its applications and any improvements made over time.
- Explain the effect of variation in anode voltage and filament temperature on the production of X-rays. Discuss the continuous and characteristic spectra of X-rays, and the role of inherent and added filters in influencing the quality of the X-ray spectrum.
- Discuss the methods for compensation of frequency variation and control of tube voltage in X-ray machines. Explain the function of a kV compensator and the importance of the high tension selector switch.