

1843 – RADIOGRAPHY EQUIPMENTS, MAINTENANCE AND QUALITY CONTROL RELATED TO X-RAY ONLY

UNIT 1

SUB TOPIC – 1 X-RAY MACHINES

I. Elaborate on

10 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference	Bloom's Taxonomy
1	Describe with neat diagram, the construction and working of rotating anode x-ray tube.	February 2020	Analyze
2	Describe with neat diagram, the construction and working of a modern X-ray unit with suitable diagram.	November 2022	Analyze
3	Explain modern X-ray (rotating anode) tube with neat diagram.	April 2024	Analyze
4	Write in detail about X-ray machines – X-Ray tube: historical aspects - early X-Ray tubes (Coolidge tubes) - construction of X-Ray tubes, requirements for X-Ray production (electron source, target and anode material), anode angulation and rotating tubes- tube voltage, current - space charge - tube envelop and housing - cathode assembly, X-Ray production efficiency, advances in X-Ray tubes, Common factors affecting thermionic emission -specialized types- grid controlled and high speed tubes. Inherent filtration, radiation leakage and scattered radiation. Heat dissipation methods- Interlocking and X-Ray tube overload protection -tube rating, heat units - operating conditions, maintenance and Q.A procedures.	-	Analyze

II. Write notes on

5 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference	Bloom's Taxonomy
1	Construction of stationary anode X-ray tube.	August 2019	Understand
2	Construction of rotating anode X-ray tube.	April 2023	Understand
3	Methods of cooling used in X-ray units.	April 2022	Understand
4	Discuss about tube rating.	November 2022	Understand
5	Heat dissipation methods in X-ray machine.	April 2024	Understand

III. WRITE SHORT NOTES ON

3 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference	Bloom's Taxonomy
1	Inherent filtration.	August 2019	Remember
2	Heat dissipation methods in X-ray tube.	November 2022	Remember
3	Filtration.	November 2022	Remember
4	Inherent filtration.	April 2024	Remember
5	Space charge effect.	April 2024	Remember

SUB TOPIC – 2 PORTABLE/MOBILE X-RAY UNITS

I. Elaborate on

10 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference	Bloom's Taxonomy
1	Discuss in detail about the construction and working of a mobile X-ray unit and add a note on its limitations.	November 2023	Analyze
2	Write in detail about Portable/Mobile X-ray units- Equipment for mobile radiography-principle- uses- mobile image intensifiers– Capacitor discharge unit- advantages and limitations -positioning differences-skill in using mobile units - - radiation protection.- mobile units types-differences-Cordless mobiles-selection of equipment.	-	Analyze

II. Write notes on

5 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference	Bloom's Taxonomy
1	Battery operated X-ray unit.	August 2019	Understand
2	Portable X-ray unit.	April 2023	Understand
3	Mobile X-ray unit.	November 2022	Understand

III. WRITE SHORT NOTES ON

3 MARKS

REFERENCE – THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY QUESTION PAPER

S.No	Question	Reference	Bloom's Taxonomy
1	Portable X-ray machine.	August 2019	Remember
2	Battery operated x-ray unit.	March 2021	Remember
3	Two limitations of mobile x-ray unit.	April 2022	Remember
4	Write about the limitations of dental X-ray unit.	November 2022	Remember