

APRIL 1997

DIPLOMA IN MEDICAL RADIOLOGY - THERAPY

(New Regulations)

Paper I - MEDICAL RADIATION PHYSICS AS APPLIED
TO RADIOTHERAPY

Time: Three hours

Max.marks:100

Answer All Questions

1. Write an essay on radium and its substitutes, their physical characteristics and suitability for brachytherapy. (25)
2. How is Co^{60} source produced? Describe the design and function of a modern rotational telecobalt unit. (25)
3. Write briefly on:
 - (a) Treatment Planning System (5x10=50)
 - (b) Wedge filter
 - (c) Strontium 90
 - (d) Mantle technique
 - (e) Maximum permissible dose.

OCTOBER 1997

MS 315

DIPLOMA IN MEDICAL RADIOLOGY-THERAPY

(New Regulations)

Paper I - MEDICAL RADIATION PHYSICS AS
APPLIED TO RADIOTHERAPY

Time: Three hours Max.marks:100

Answer All Questions

1. Describe the interaction of radiation with matter. (25)
2. Draw the diagram of a modern tele-Cobalt machine. Name its various parts and describe their functions. (25)
3. Write briefly on: (5x10=50)
 - (a) Iridium 192 isotope
 - (b) Isodose charts
 - (c) Film badges
 - (d) Beam modification devices
 - (e) Implant techniques.

APRIL 1998

SV 336

DIPLOMA IN MEDICAL RADIOLOGY - THERAPY
(New Regulations)

Paper I - MEDICAL RADIATION PHYSICS AS
APPLIED TO RADIO THERAPY

Time: Three hours

Max.marks:100

Answer All Questions

1. Discuss the effects of interaction of radiation with matter. (25)
 2. What is brachytherapy? Describe its types. Discuss the functions and working of the remote afterloading machines. (25)
 3. Write briefly on: (5x10=50)
 - (a) Caesium 137
 - (b) Isodose curves
 - (c) Rotation therapy
 - (d) T.L.D.
 - (e) Genetic effects of radiation.
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APRIL 1999

[SG 1517]

Sub. Code : 3025

DIPLOMA IN MEDICAL RADIOLOGY-THERAPY
EXAMINATION.

(New Regulations)

Paper I — MEDICAL RADIATION PHYSICS AS
APPLIED TO RADIOTHERAPY

Time : Three hours

Maximum : 100 marks

Answer ALL the questions.

1. Write an essay on modern tele-Cobalt unit and briefly mention the standard accessories used along with the machine. (25)
 2. Describe various intracavity methods used in brachytherapy. (25)
 3. Write briefly on : (5 × 10 = 50)
 - (a) Maximum permissible Dose.
 - (b) Biological effects of Radiation.
 - (c) Use of mould Room techniques in Radiotherapy.
 - (d) Define LET, HVL, Radioactive Isotopes, Gray and Sievert.
 - (e) Simulator.
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APRIL 2000

[KB 1517]

Sub. Code : 3025

DIPLOMA IN MEDICAL RADIOLOGY-THERAPY
EXAMINATION.

(New Regulations)

Paper I — MEDICAL RADIATION PHYSICS AS
APPLIED TO RADIOTHERAPY

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

1. Discuss the various attenuation process that take place when X-rays interact with matter. How do these vary at various photon energies? (25)
 2. Enumerate the various beam modifying devices and beam direction devices used in megavoltage teletherapy. Discuss the various beam modifying devices which are used in clinical situations. (25)
 3. Write briefly on : (5 × 10 = 50)
 - (a) Electromagnetic radiations
 - (b) Bremsstrahlung radiation
 - (c) TLD
 - (d) Differences between diagnostic and therapeutic X-ray tube
 - (e) Technitium 99 m.
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KC 1517

OCTOBER 2000

Sub Code: 3025

DIPLOMA IN MEDICAL RADIOLOGY-THERAPY EXAMINATION

(New Regulation)

Paper I – MEDICAL RADIATION PHYSICS AS APPLIED TO RADIOTHERAPY

Time: Three hours

Maximum: 100 Marks

Answer All Questions

1. Enumerate the major components of a Standing Wave Linear Accelerator with the help of block diagram. (25)
2. Compare and Discuss about manual afterloading and Remote afterloading Systems. (25)
3. Write Briefly on: (5 x 10 = 50)
 - a) Geometric Penumbra
 - b) Different factors affecting percent depth dose
 - c) Inverse Square Law
 - d) Attenuation of X-rays and Gamma rays
 - e) Quality Assurance in radiotherapy.

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