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SECOND YEAR B.SC. (RADIOGRAPHY) DEGREE EXAMINATION, OCT-1998

CODE NO.SK-0300

RADIATION PHYSICS AND MEDICAL PHYSICS

Time : Three Hours. **Max.Marks : 80**

Note :
1. Answers Should be specific to the Questions asked.
2. Draw a neat and labelled diagram wherever necessary.

I 1. (1) Write a neat diagram of a Modern X-ray tube and label the parts
(2) Ennumerate any five properties of X-rays 1 X 10 = 10

II Write Short notes on **Any Ten** 10 X 5 = 50
1. Principles of ultrasound
2. Principles of Computerised axial tomography
3. Principles of nuclear magnetic resonance imaging
4. Linear accelator
5. Principles of tracer technique
6. Beam collimation
7. What is pair production
8. What are G-Values
9. What is linear energy transfer
10. What is 'B' Scan in Ultrasonography
11. What do you mean by Half-Life of an isotope
12. What is relaxation time in N.M.R.

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III Answer **Any Ten** in short answers 10 X 2 = 20
1. Stereoscopy
2. Gun moniter
3. Mammography
4. Angiocardiography
5. Positron emmission tomography
6. Mention any two Genetic Effects of Radiation
7. Write any two differences between Internal Dosimetry and External Dosimetry
8. Write any two differences between Filters used in Radiotherapy and those used in Radiography
9. Write any two differences between Superficial and Deep X-rays
10. Write any two differences between Brachytherapy and Teletherapy

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SECOND YEAR B.SC. (RADIOGRAPHY) DEGREE EXAMINATION, NOV/DEC –1998

CODE – SK 0311

RADIATION PHYSICS AND MEDICAL PHYSICS

Time : Three Hours. **Max. Marks : 80**

Note :
1. Answer to the point.
2. Draw diagrams of necessary.

I. Describe the construction and working of an Image intensifrer. (10 X 01 = 10)

II. Write short notes on any TEN : 5 Marks Each (05 X 10 = 50)

1. Proportional counter
2. Television Camera Tube.
3. Spring activated exposure times
4. Personnel Monitoring.
5. Space charge compensation
6. Dark adoptation in Fluoroscopy.
7. Dental X – ray unit.
8. Earthing
9. TOMOGRAPHY – Principles.
10. Use to setp wedge in Quality control of X-ray units.
11. Advantages of Modern Fluoroscopy using closed circuit Television compared to convertional fluoroscopy.
12. Stochastic and Non Stochastic effects.

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III. Answer in two or three sentences : 2 Marks Each. (02 X 10 = 20)

1. How do you decide the current rating of FUSE in a domestic connection ?
2. Name the Instruments used in the quality control of X – ray machines ?
3. If the Voltage supply to the ROTOR in a rotating anode X – Ray tube is CUT. What happens to the X – ray tube. ?
4. What is the purpose of Interlocks used with X –ray machines ?
5. What is the principle behind the working of an Electro Magnetic relay ?
6. What are the disadvantages of a self rectified X – ray tube ?
7. What is the position of MA Meter in the high tension circuit ? Give reasons for your answer ?
8. What exactly the KILOVOLTAGE reading meter on the control panel of your X –ray machine reads ?
9. What are the factors considered in radiation shielding design ?
10. What are the voltages you can get from a three phase supply ?

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SECOND YEAR B.Sc (Radiography) DEGREE EXAMINATION, 1998

CODE NO.SK- 0301

RADIOGRAPHIC PHOTOGRAPHY & DARK ROOM TECHNIQUES - I

Time: Three Hours Maximum Marks: 80

Note: (1) Your answers shall be specific to the questions asked
(2) Draw neat labelled diagrams wherever necessary.

(Marks 1 X 10 = 10)

I Explain in detail the Chemistry of image formation.

(Marks 1 X 10 = 10)

II Describe the factors influencing radiography.

(Marks 5 X10 =50)

III Write short Essays on Any Ten

1 Binders
2 Hangers
3 Focal Spot
4 Safe Light
5 Latent image
6 Base of a Film
7 Name the constituents of a Developer.
8 What are Non Screen films. Where are they used.
9 Name any four Flourosent Salts.
10 Name any four Film artefacts.
11 What are the different parts of a casette
12 What is penumbra.

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(Marks 5 X 2 = 10)

V Short Answer.

1. Expiry date for a film
2. Immersion heater
3. What do you mean by rapid processing
4. Manification of an Image.
5. Base of a film

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BR(3.3)

MANGALORE UNIVERSITY

THIRD YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATIONS, APRIL 1998

RADIOGRAPHIC PHOTOGRAPHY & DARK ROOM TECHNIQUE - II

Time: 3 Hours. Max. Marks: 75.

NOTE: Answer question No.VI and any THREE from the remaining.

I. Describe the types of safe lights in dark room. (20)

II. Describe the methods in miniaturization. (20)

III. Describe cassette rack and cassette Hatches. Describe its uses. (20)

IV. What is cone view? What are the types of cones used in Xray room? Explain in detail. (20)

V. Describe odelca camera and discuss various features associated with it. (20)

VI. Write short notes on any THREE of the following: (3x5=15)

1. Developer
2. Film Crumple
3. Testing for efficiency of switches
4. Light proof entrances for dark room
5. Dichrotic Fog.

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BR(3.1)

MANGALORE UNIVERSITY

THIRD YEAR B.Sc. (RADIOGRAPHY) DEGREE EXAMINATIONS, APRIL 1998

HOSPITAL PRACTICE AND CARE OF PATIENTS

Time: 3 Hours. Max. Marks: 75.

NOTE: Question No.V is compulsory;
Answer any THREE from the remaining.

I. What are the professional attitudes of radiographer to Patients and other members of the staff? (20)

II. What are the different types of records relating to patient maintained in the department? Explain in detail. (20)

III. Define 'Enema' and classify them and explain the procedure of simple evacuant enema, using enema can and tubing. (20)

IV. Define 'Shock' and mention the types and sings and symptoms of shock. Explain the first aid treatment for shock. (20)

V. Write short notes on any THREE of the following: (15)

1. Rules for bandaging
2. First contat with the patients in the department
3. Medico-legal aspects
4. Lifting of ill and injured patients.

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BR 3.2

MANGALORE UNIVERSITY

THIRD YEAR B.Sc (RADIOGRAPHY) DEGREE EXAMINATIONS APRIL 1998

RADIOGRAPHIC TECHNIQUE II & ULTRASOUND

Time: 3 Hours) (Max. Marks: 75

NOTE:- Question No. 6 is compulsory.
Answer any THREE of the remaining.

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1. Describe in brief anatomy of hepatobiliary system. Define various radiological investigations and routine radiographic views. (20)

2. What is intravenous urogram. Describe the various radiological positions and views. (20)

3. Describe in detail the preparation for micturating cystourethrogram, Procedure and radiographic positioning. (20)

4. Describe in detail the radiographic positioning of KUB and plain X-ray abdomen. (20)

5. Describe the procedure and radiographic positioning of hysterosalphingography. (20)

6. Write short notes on any THREE of the following: (5x3=15)
   a) Phlebography
   b) Bronchography
   c) Intravenous contrast media
   d) Sialography
   e) Ventriculography.

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SECOND YEAR B.Sc (Radiography) DEGREE EXAMINATION, 1998

CODE NO.SK- 0299

RADIOGRAPHY TECHNIQUE

Time: Three Hours

Maximum Marks: 80

Note: (1) Your answers shall be specific to the questions asked
(2) Draw neat labelled diagrams wherever necessary

I. Give an account of Barium swallow through examination. (Marks = 10)

II. Answer any Ten of the following. (Marks 5 X 10=50)

1 Skyline view of patella.
2 X-ray of Mastoids
3 X-ray of Temparomandi bular joint.
4 Infero-superior view of shoulder joint.
5 X ray of sternum.
6 Town's View of skull
7 Optic formen.
8 Ankle joint – Lateral view
9 Shoulder Joint – A.P View.
10 Skull – P.A View
11 Hand – A P View.
12 Mandible – Right lateral oblique.

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III. Short Answers (Marks 2 X10 = 20)

1 Inter-condylar projection.
2 Forced position while taking X rays.
3 Supplimentary Views.
4 Tele-roentgenogram (Teleradiography)
5 Errect Abdominal X-ray.
6 Fluoroscopy.
7 Intra oral and extra oral projections.
8 AP and PA view of Chest X ray.
9 X-ray projection of HIP joint and Neck of Femur.
10 Right oblique and left Oblique views of Foot.

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III. Short Answers :

16 Define Half-life and Mean-life and write the relationship between them.

17 There are two materials A and B which can be used as core material in the transformers. The measured hysteresis loop area of A is greater than that of B. Which one of the materials is preferred for the core material and why ?

18 Calculate the time required for a 100 mci of ^{137}Cs to decay to the level of 25 mci, given the half-life of ^{137}Cs = 30 years.

19 Can you convert an ammeter into an voltmeter ? If your answer is yes, how do you achieve it ?

20 If the radiation exposure is 200 R/min. at a distance of 80 cms. from the X-ray tube focus, calculate the exposure rate at a distance of 40 cms.

(5 × 2 = 10 marks)