

BLDE (DEEMED TO BE UNIVERSITY)

B.Sc. in Medical Imaging Technology

[Time: 3 Hours]

[Max. Marks: 80]

VI SEMESTER

PAPER I - (Quality Assurance in Medical Imaging)

QP CODE: 8625

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

Long Questions

10X1 = 10 Marks

1. Explain in details about Manual film processing?

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. What is Film/screen contact test tool?
3. How the Grid and Collimator plays and important role in Quality Assurance?
4. Draw the labelled diagram of mammography room layout?
5. What is Tomography test tools?
6. How kVp and mA plays an important role in quality assurance?
7. Draw the labelled diagram of x-ray room layout?
8. How intensifying screen will play a role in QA?
9. What basic criteria you will apply for mobile x-ray unit?
10. What are the measuring calipers in radiology department?

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. What is Film and chemical storage and QA?
12. What care you are going to take from the purchase of x ray machine till its installation and QA?
13. What are artifacts?
14. What are the aims of QA in medical imaging?
15. Write the different types of beam limiting devices and QA?
16. What is measuring calipers?
17. Generator (transformer / rectifier / high frequency generator) and QA?
18. What should be the configuration of new recent Portable or mobile x-ray unit?
19. What should be the dimensions of different x-ray rooms?
20. How the column and table top affects the quality of radiography?
21. What is the role of cassettes in QA?

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VI SEMESTER
PAPER II - (Modern Technologies in Imaging)
QP CODE: 8626

Your answer should be specific to the questions asked.
Write Question No. in left side of margin.

10X1 = 10 Marks

Long Questions

1. Explain in brief about the Basic Terminologies of Computed Tomography?

5 X 8 = 40 Marks

Short Essays: (Any – 8)

2. Write the Hounsfield Units (HU) of Human body?
3. What is T1 relaxation?
4. Write about Gantry of Computed Tomography?
5. What is magnet and explain types of magnets?
6. What is windowing and write about window length and window width?
7. Explain about Mammography equipment's?
8. Write about Quality Control in CT scan?
9. What are the types of acquisition in MRI?
10. What is alignment in MRI?

3 X 10 = 30 Marks

Short Answers: (Any – 10)

11. What is the basic principle of Tomography?
12. What is Relaxation in MRI?
13. Explain about patient table in Computed Tomography?
14. Write components of the MRI system with diagram?
15. What is Back projection in CT scan?
16. What is Cryostat?
17. Write the advantages and disadvantages of EBCT?
18. Write the indications and contraindications of MRI scan?
19. What is Metal Artifact in CT scan?
20. What is Inversion recovery?
21. What is Beam Hardening Artifact in CT scan?

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VI SEMESTER

PAPER III - (Radiation Physics & Radiation Protection)

QP CODE: 8627

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

Long Questions

10X1 = 10 Marks

1. Write in detail about source of radiation?

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Write about Acute radiation syndrome?
3. Explain radiation quantities and units?
4. Define radiation and explain its types?
5. What are Regulatory bodies involved in radiation protection?
6. How to calculate the requirement barriers for shielding?
7. What are structural changes in biological tissue?
8. Difference between stochastic and non-stochastic effect
9. Explain Cardinal principle?
10. Define radioactive material? And what are the steps includes during packaging?

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Draw a model layout of x ray unit?
12. What are primary and secondary barriers of radiation?
13. What are the causes of genetic mutation?
14. Write about gonadal shielding?
15. What are the Components of pocket dosimeter?
16. What is TRE FOIL, write its dimension?
17. Define radiation protection along with its principle?
18. Write the Properties of x rays?
19. What are the symptoms of prodromal stages?
20. What are Ideal personal monitoring devices?
21. What are the Dose limits for occupational workers and public according to ICRP?

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VI SEMESTER

PAPER IV - (BMIT Directed Clinical Education-IV)

QP CODE: 8628

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

Long Questions

10X1 = 10 Marks

1. Mention the Radiation Protection methods used in CT scan?

Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Explain about MRI Artifacts?
3. Explain interaction of X-rays with matter in brief?
4. Draw a neat labelled diagram of Hepato-biliary system and explain about it?
5. What is grid and mention the types of grids with their functions?
6. What are the factors used to increase the efficiency of screens?
7. What is HSG procedure and Name the instruments used in HSG procedure?
8. Write in brief about patient preparation before barium enema?
9. Mention the role of USG in 1st Trimester of Pregnancy?
10. Draw a neat labelled diagram of breast and write about its location?

Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. What are the four components of PACS?
12. Write the indications and contraindications for cervical spine AP view?
13. Write patient preparation and position for Knee joint AP view?
14. Draw a neat labelled diagram of ultrasound transducer and write its frequencies?
15. What is the positioning and films taken in HSG procedure?
16. What is control panel or console?
17. What is intensifying screen and draw a neat labelled diagram of intensifying screen?
18. What is Auto-transformer, Step-Up and Step-down transformer?
19. Write the important points about the Medico legal x-rays?
20. Draw a neat labelled diagram of lungs?
21. Enumerate the lobes of the brain and write the separation or fissures between them?