

BS  
MET - 21

Jan-2023

# BLDE (DEEMED TO BE UNIVERSITY)

## B.Sc. in Medical Imaging Technology

[Time: 3 Hours]

[Max. Marks: 80]

### IV SEMESTER

### PAPER I - (Physics & Medical Imaging II)

QP CODE: 8425

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

#### Long Questions

10X1 = 10 Marks

1. Different types of magnets used in MRI scanner. Their names and specific applications.

#### Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Write about the first generation CT scanner
3. What is Acoustic impedance, how it is useful in the image formation of U/S image
4. What is Doppler Effect?
5. How the u/s beam is stirred with the help of electronic probe
6. What is EBCT ct Scanner and how it is working
7. Explain in detail about the functioning of ceramic detector
8. What is Excitation in MRI
9. What is MRI safety? How will you take care in the MRI department
10. What is Slice thickness, Phase encoding, TI, Mxy, Mz,

#### Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Classify the sound waves
12. What is tissue Harmonics?
13. What is Doppler frequency shift? What is equation of Doppler shift?
14. What is pitch? What pitch ratio is good for good image reconstruction?
15. What are the advantages of CT over Conventional Radiography?
16. What is the difference between Axial CT and Spiral or Helical CT?
17. What is Larmor frequency? Formula? What happens when same frequency is transmitted to patient's body by RF coil?
18. Write few lines on MRI safety.
19. What is Voxel and what is Pixel? What is Matrix? How they are related to Resolution?
20. What is the difference between 0.2 T and 1.5 T MRI scanners?
21. What types of nature of energy is used in X-Ray, USG, CT and MRI?

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**B.Sc. in Medical Imaging Technology**

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**IV SEMESTER**  
**PAPER II - (Radiographics Techniques II)**  
**QP CODE: 8426**

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

**Long Questions**

**10X1 = 10 Marks**

1. Describe the X ray projections under following headings:

- a) FFD                                      b) Centring point    c) size of cassette                      d) Bucky/non-Bucky  
e) Position of patient                      f) Extent of image

1. a Sacroiliac joint-prone    1. b Sacroiliac joint -oblique    1. c Pelvimetry  
1. d Cervical spine -oblique    1. e Skull- cross table

**Short Essays: (Any – 8)**

**5 X 8 = 40 Marks**

Describe the X ray projections under following headings:

- a) FFD    b) Centring point    c) size of cassette    d) Bucky/non-Bucky    e) Position of patient  
f) Extent of image

2. Sacroiliac joint-prone
3. Sacroiliac joint -oblique
4. Patella -skyline view
5. Knee-intercondylar notch view
6. Knee weight bearing.
7. Write a short note on lateral view of skull.
8. Draw a neat labelled diagram of the mandible.
9. Describe skeletal survey - Preparation , views, positions.
10. Draw a neat labelled diagram of coronal section of Maxillary sinus

**Short Answers: (Any – 10)**

**3 X 10 = 30 Marks**

11. Draw a neat labelled diagram of orbit (eye).
12. Draw a neat labelled diagram of hip joint.
13. Name the various views of skull.
14. Briefly describe Dunn view.
15. Draw a neat labelled diagram of axial section of the frontal sinus
16. Name various PNS views.
17. Name various special views in pelvis
18. Write short note on dorsal spine
19. Name views used in mastoid
20. Describe normal curvature of spine
21. Types of views in pelvis

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#### PAPER III - (Digital Imaging)

QP CODE: 8427

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

#### Long Questions

10X1 = 10 Marks

1. Write a long note on binary code ,image file ,digital imaging and dose

#### Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Describe data components -DICOM ,HI7
3. PACS
4. Right for access patients' rights.
5. Write note on work station parameters
6. Describe reporting workstation functions
7. Write a note on electronic patient record.
8. Note on post processing of images
9. Short notes on rights of access for patients.
10. Post processing of images

#### Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. LAN
12. What is interfacing?
13. Binary code
14. Order communication
15. MAN
16. What is image representation?
17. What is magnetic domain theory?
18. Data transfer
19. Name radiology information systems
20. Tele radiology
21. What is RIS and HIS?

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### IV SEMESTER

#### PAPER IV - (MIUT Directed Clinical Education II)

QP CODE: 8428

Your answer should be specific to the questions asked.

Write Question No. in left side of margin.

#### Long Questions

10X1 = 10 Marks

1. Write about preparation of patients and care of patients in ultrasonic scan

#### Short Essays: (Any – 8)

5 X 8 = 40 Marks

2. Preparation of hands for aseptic procedures
3. Care for epilepsy
4. Handling of geriatric patients
5. Procedure in the event of an accident in radiology department
6. Importance of records maintenance
7. Radiography of pregnant patients
8. Radiography of children
9. Uses of pressure injector in ct scan?
10. What is MRI safety?

#### Short Answers: (Any – 10)

3 X 10 = 30 Marks

11. Correct method of putting sterile gloves
12. Importance of measuring weight of patients before radiography scan
13. Thyroid scan
14. Handling of infections of patients
15. Shifting of patients
16. Methods of measuring temperatures
17. Define blood pressure and normal value
18. Angiography
19. Handling of RTA patients
20. Application of asepsis
21. Patients vital signs