



SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH

(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Third Year Semester-V

March / April 2026 Examination

B.Sc. Imaging Technology

Time: 2.30 Hrs.

[Max. Marks: 80]

Sub: Physics of Ultrasound with PCPNDT act

Q.P Code: K5390

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

I. LONG ESSAY

2 X 10 = 20 Marks

1. Explain in detail about ultrasound elastography.
2. Explain Principle, Working, Types and Uses of Ultrasound Transducer

II. SHORT ESSAY

6 X 5 = 30 Marks

3. Write a note on different types of Doppler techniques
4. Write about the piezoelectric effect and Doppler spectrum.
5. Write a note on 3d and 4d ultrasound.
6. Write a Note on USG abdomen and its application
7. Write any five ultrasound Artifacts and explain it.
8. Write a Note on tissue harmonic imaging.

III. SHORT ANSWERS

10 X 3 = 30 Marks

9. Write down the properties of Ultrasound Waves.
10. What is Transducer and explain its uses.
11. What is attenuation in ultrasound.
12. What is ray casting technique.
13. What is gating mechanism in ultrasound.
14. What is acoustic impedance.
15. What is M-Mode Imaging and its uses.
16. What is Grey Scale Image.
17. What is Refraction in Ultrasound.
18. Write the uses of Power Doppler.

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B.Sc. Imaging Technology

Time: 2.30 Hrs.

[Max. Marks: 80]

Sub: Physics of CT & Imaging Technique

Q.P Code: K5400

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

I. LONG ESSAY

2 X 10 = 20 Marks

1. Write a Note on Generations of Computed Tomography.
2. Explain in about post processing techniques in CT.

II. SHORT ESSAY

6 X 5 = 30 Marks

3. Explain imaging of CT brain.
4. What are Artifacts and Explain any 5 Artifacts in detail.
5. Explain Image Reconstruction Process in CT.
6. Explain CT Number. What is Pixel, Voxel and image matrix?
7. Explain about recent advances in CT
8. Explain in detail about types of CT scanner?

III. SHORT ANSWERS

10 X 3 = 30 Marks

9. What is Window Width?
10. What is Window Level?
11. What is Contrast Media? Write contrast which is used in CT.
12. What are the components of Gantry?
13. What is Noise?
14. What is the basic Principle and history of CT?
15. What is CT Pitch?
16. What is the patient preparation for contrast procedure in CT?
17. What are the indications of CT temporal bone?
18. What is pressure injector and explain in detail?

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March / April 2026 Examination

B.Sc. Imaging Technology

Time: 2.30 Hrs.

[Max. Marks: 80]

Sub: Mammography and Nuclear Medicine

Q.P Code: K5410

Your answers should be specific to the questions asked.

Draw neat labeled diagrams wherever necessary.

I. LONG ESSAY

2 X 10 = 20 Marks

1. Write a note on PACS.
2. Write a note on PET.

II. SHORT ESSAY

6 X 5 = 30 Marks

3. Explain in detail about construction and working principle of Gamma Camera.
4. Explain in detail about mammogram.
5. Explain in detail about myocardial perfusion imaging.
6. Explain in detail about DR.
7. Explain in detail about CR.
8. Explain in detail about applications of isotopes.

III. SHORT ANSWERS

10 X 3 = 30 Marks

9. What is Converging Collimators?
10. What is radioactive decay?
11. What is Electron capture method?
12. What is DICOM?
13. What is the indication for thyroid imaging?
14. What is the thickness of Lead apron and its uses?
15. What is Atomic Mass Number?
16. List difference between PET and SPECT?
17. Explain in detail about cyclotron.
18. What are Isotope, Isobars, and Isotones?

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