[LJ 136] **OCTOBER 2016** **Sub. Code:**

M.D. DEGREE EXAMINATION

BRANCH VIII – RADIO DIAGNOSIS

PAPER I – MEDICAL RADIATION PHYSICS AS APPLIED TO RADIO DIAGNOSIS

Q.P. Code :202031

Time : Three Hours **Maximum : 100 Marks**

I. Elaborate on: **(2 x 15 = 30)**

1. Mention the types of interaction of X-rays with matter. Describe stochastic and deterministic effects. Write a note on personal dosimeter devices in use.

2. Describe the principle and design of a PET-CT system. What are the precautions to be taken while handling radio-nuclides?

II. Write notes on: **(10 7 = 70)**

1. Linear attenuation co-efficient.
2. Conventional X-ray film.
3. X-ray mammography Equipment.
4. X-ray tube focal spot.
5. Doppler principle.
6. Larmor frequency.
7. Artifacts in Computed tomography.
8. Inversion recovery pulse sequence.
9. Image Intensifier Tube.
10. MR spectroscopy principles.

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M.D. DEGREE EXAMINATION

BRANCH VIII – RADIO DIAGNOSIS

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PAPER II – RADIO DIAGNOSIS INCLUDING NUCLEAR MEDICINE

Time : Three Hours **Maximum : 100 Marks**

I. Elaborate on:

1. Describe the CT and MRI, evaluation of an adrenal mass detected during ultrasonography. Write a note on the nuclear medicine techniques used in the evaluation of adrenal mass.

2. Define the secondary pulmonary lobule. Describe the basic imaging patterns of interstitial lung disease in high resolution computed tomography. Write a note on the imaging features in Hypersensitivity pneumonitis.

II. Write notes on: **(10 x 7 = 70)**

1. Imaging of reno-vascular hypertension.
2. Comparative radiographic features of benign and malignant gastric ulcer.
3. Salient imaging features of renal tuberculosis.
4. Imaging features of Ewing's sarcoma.
5. Neuro-imaging applications of SPECT, PET.
6. Normal variants in CT- Paranasal sinuses imaging.
7. Indications for breast MRI.
8. Imaging features of Endometriosis.
9. Pneumocystis carinii pneumonia – Clinical and imaging features.
10. Technique of thyroid scintigraphy.

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M.D. DEGREE EXAMINATION

BRANCH VIII RADIO DIAGNOSIS

OCTOBER 2016

PAPER III – RADIO DIAGNOSIS INCLUDING INSTRUMENTATION AND CONTRAST STUDIES

I. Elaborate on:

1.What are the various MRI sequences used in imaging the female pelvis including Perineal floor? Describe the multimodality approach towards characterizing a complex adnexal mass and uterine artery embolisation.

2. Describe the mediastinal compartments and the imaging approach towards diagnosis and characterisation of a mediastinal mass. Write a note on CT-guided biopsy of anterior mediastinal mass.

II. Write notes on: **(10 7 = 70)**

1. Technique of percutaneous nephrostomy.
2. Radiological differences between cardiac and non-cardiac pulmonary edema.
3. Imaging features of epiploic appendicitis.
4. Imaging of intraventricular brain tumors.
5. Bronchial artery embolisation.
6. Imaging evaluation and differential diagnosis of presacral mass in a child.
7. Magnetic Resonance cholangio-pancreatography (MRCP).
8. Architecture of PACS (Picture archiving and communication system).
9. Patello femoral mal-alignment – Imaging assessment.
10. CT guided neurolysis in pain management.

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