[LN 0818] AUGUST 2018 **Sub Code: 1802**

B.Sc. RADIOLOGY IMAGING TECHNOLOGY

FIRST YEAR

PAPER II – GENERAL PHYSICS, RADIATION PHYSICS AND PHYSICS OF DIAGNOSTIC RADIOLOGY

Q.P. Code: 801802

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

Answer All questions.

I. Elaborate on: **(3 x 10 = 30)**

1. Explain the working principle of modern X ray tube with neat diagram.
2. Explain the principle of nuclear reactor with neat diagram.
3. What is grid? Explain the different types of grid.

II. Write notes on: **(8 x 5 = 40)**

1. Explain the beta decay with examples.
2. How the filters affect the X ray emission?
3. Describe the function of p-n junction diode.
4. Describe full wave rectification circuit.
5. Explain photo electric effect and its significance in diagnostic radiology?
6. Explain the significance of intensifying screens.
7. Describe the theory of transformer with diagram.
8. A Circuit has a potential of 200 V and resistance of 5 Ω. Calculate the current passing through the circuit.

III. Short answers on: **(10 x 3 = 30)**

1. Define space charge effect.
2. What is the target material used in X ray tube and why?
3. Define atomic number and mass number.
4. Define internal conversion.
5. Define tenth value layer (TVT).
6. Define linear attenuation coefficient.
7. Explain the importance of collimation.
8. Define fluorescence and phosphorescence.
9. Define specific activity.
10. What is half life?

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