

21U513

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Name:

Reg.No:

FIFTH SEMESTER UG DEGREE EXAMINATION, NOVEMBER 2023

(CBCSS - UG)

(Regular/Supplementary/Improvement)

CC20U PHY5 D03 - ELEMENTARY MEDICAL PHYSICS

(Physics - Open Course)

(2020 Admission onwards)

Time : 2.00 Hours

Maximum : 60 Marks

Credit : 3

Part A (Short answer questions)

Answer *all* questions. Each question carries 2 marks.

1. Explain the properties of α – particles.
2. Give an example for nuclear fission.
3. What is the relation between angle of scattering and wavelength in Compton scattering?
4. Define Photoelectric effect.
5. What is the unit of radioactive dosage?
6. What are the symptoms of Arrhythmias?
7. What all parameters are being diagnosed using EMG?
8. What do you mean by Muscular Servomechanism?
9. Explain X-Ray imaging.
10. What are the properties of Ultrasonic waves?
11. What is the role of transducer used in ultrasound imaging?
12. Discuss the hazards and safety of Ultrasound Imaging.

(Ceiling: 20 Marks)

Part B (Short essay questions - Paragraph)

Answer *all* questions. Each question carries 5 marks.

13. Explain c-14 dating.
14. What is Rayleigh scattering? Explain the colour of sky and cream on the basis of Rayleigh scattering
15. What are Radiopharmaceuticals? Briefly explain their uses.
16. Briefly explain some methods for respiration rate measurement.

17. What is ECG? Explain types of circulation.
18. What are X-Rays and how do they work?
19. What is Ultrasound Imaging and what are its uses? List out the different properties of ultrasound waves.

(Ceiling: 30 Marks)

Part C (Essay questions)

Answer any *one* question. The question carries 10 marks.

20. What is an Electroencephalography?
 - a) Explain the function of the brain and the bioelectric potentials produced inside the brain.
 - b) How does an electrical wave travel down a neuron?
21. What are Ultrasonic waves?
 - a) Explain the generation and detection of Ultrasonic waves.
 - b) Explain ultrasonic instrumentation and imaging.

(1 × 10 = 10 Marks)
