THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0922] SEPTEMBER 2022 Sub. Code: 1434
(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

DIPLOMA IN RADIOGRAPHY AND IMAGING TECHNOLOGY
SECOND YEAR – (Regulation from 2018-2019)
PAPER IV – QUALITY CONTROL IN RADIOLOGY AND RADIATION SAFETY
Q.P. Code: 841434

Time: Three Hours **Answer ALL Questions** **Maximum: 100 Marks**

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

1. Explain in detail about Thermoluminescent dosimeter – Construction, working and dose measurement.
2. Describe in detail about the radiation safety instruments.
3. Explain the planning of X-ray room with suitable diagram and evaluate work load.

II. Write notes on: **(10 x 5 = 50)**

1. Explain the construction of dark room with neat sketch.
2. Define Equivalent dose, Effective dose and Committed dose with its units.
3. Write a note on permissible dose limits for public and radiation worker according to ICRP.
4. Explain about tube housing leakage test and central beam alignment test for radiography unit.
5. Write a note on basic methods of radiation safety.
6. Discuss the principle, construction and working of pocket dosimeter.
7. Write note on construction and guidelines to use film badge.
8. Discuss about shielding materials used in radiation control.
9. Write about radiation effect on embryo.
10. Differentiate between Somatic and Genetic effect.

III. Short answers on: **(10 x 2 = 20)**

1. What is exposure and its units?
2. Define kVp and its importance.
3. What is use factor?
4. Draw the X-ray warning symbol and label it.
5. Define half life.
6. Define KERMA with its unit.
7. Give a note on ten day rule.
8. What is the aim of radiation protection?
9. Define ALARA principle.
10. What is gantry tilt assessment in CT?

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