

# **RSO WORKSHOP-2022**

## **TAKE HOME TEST**

# SHORT ANSWER QUESTIONS

Q1. What is the prescribed DAC that a radiation worker must work in when handling  $^{99m}\text{Tc}$  ?

Q2. Calculate the effective dose to bone marrow for a radiation worker handling  $^{225}\text{Ac}$  with an absorbed dose of  $0.40\text{mGy/MBq}$  ?

Q3. Write short notes on two of the following:

- a) Specific gamma ray constant
- b) Equivalent dose
- c) Absorbed fraction

Q4. What is personnel monitoring ? Compare TLD and Film badge monitoring.

- Q5. Write down the safety precautions to be taken in  $^{131}\text{I}$ -ablation therapy?
- Q6. What are different types of misadministration , its causes and how it can be controlled?
- Q7. A male patient was administered with 20mCi  $^{99\text{m}}\text{Tc}$ -MDP. Activity content of bladder was found to be 40 % with biological half-life of 3 hrs. What is the dose received by thyroid from the bladder?  
(S-value<sub>(thyroid←bladder)</sub> = 9.65E-11)
- Q8. Basic framework of ICRP.

Q9. What are the different types of misadministration that can occur during Radiopharmaceutical administration in diagnostic NM lab?

Q10. What is the role of an RSO III in a medical cyclotron?

Q11. Difference between shielded and unshielded cyclotron.

Q12. Short note on

1. Hematopoietic syndrome
2. Gastro intestinal syndrome
3. CNS syndrome

Q13. What is the selection criteria for a radiation monitoring instrument?

Q14. What are the limits for minor spill for the following radionuclides:

1. Tl-201 and Tc-99m
2. I-131
3. I-123 and In-111

Q15. What are the Breast-Feeding Guidelines suggested for the following radionuclides:

1. I-131 and Ga-67
2. I-123
3. Tl-201
4. Tc-99m

Q16. Decontamination of glass surfaces can be performed by using\_\_\_\_\_

Q17. Decontamination of metal surfaces can be performed using\_\_\_\_\_

Q18. What is the limit for over-exposure in a single monitoring period for a radiation worker? When is the chromosomal aberration test recommended?

Q19. What is the maximum range in tissue for  $^{90}\text{Y}$ ?

Q20. What are the positron energies of  $^{15}\text{O}$ ,  $^{13}\text{N}$ ,  $^{11}\text{C}$ , &  $^{82}\text{Rb}$ ?

Q21. Describe the procedure for test of sensitivity for gamma camera.

Q22. Describe the bull's eye artifact.

Q23. Principle of personnel monitoring devices with examples.

Q24. The dose calibrator in your department is under repair, what other devices can be used to measure radioactivity and how?

Q25. Decontamination procedure for  $^{131}\text{I}$  spillage.

Q26. Plan a nuclear medicine high dose therapy ward with 5 bed.

Q27. Draw the trefoil structure.

Q28. Difference between transport index and UN no.

Q29. List the different types of packaging and describe the tests for type A packages prescribed by IAEA.

Q30. What is the limit of waste disposal for  $^3\text{H}$  and  $^{14}\text{C}$ ?

***THANK YOU***  
***&***  
***All the Best***