



Total Mark: 10

Answer the following questions

I. Discuss beta particles absorption curve

II. What is the energy of isotope completely stopped by plaxiglass material of density

($\rho=1.18\text{g/cm}^3$) and thickness of 0.9 cm . ($R= 0.54\text{E}-0.133$)

III. Choose the correct answer

1- If the dose limit for an occupational worker is $10\ \mu\text{Sv}/\text{hour}$ and working for 5 days per week, 8 hours /day and 50 weeks/year then the total dose is

- a. $200\ \mu\text{Sv}/\text{y}$
- b. $20\ \text{mSv}/\text{y}$
- c. $2000\ \mu\text{Sv}/\text{y}$
- d. $5\ \text{mSv}/\text{y}$

2- Source has half life 8 days and its initial activity at certain moment is 100 MBq then the final activity after 16 days is

- a. 25 MBq
- b. 12.5 MBq
- c. 50 MBq
- d. 6 25 MBq

IV- A Cs-137 source gives dose rate of $5000 \mu\text{sv/h}$ and μ for Cs-137, $E= 662 \text{ keV}$ is $1,24 \text{ cm}^{-1}$. then calculate the thickness required from AL to decrease a dose for $25 \mu\text{Sv/h}$.

V- Write notes about:

- a. Absorbed dose
- b. Equivalent dose
- c. Effective dose
- d. Radioactivity
- e. Physical half life
- f. Range of alpha particle
- g. Half value layer

مع أطيب التمنيات بالتوفيق ،،،
