Saudi Arabia Kingdom Ministry of Education Umm Al- Qura University Faculty of Applied Science Physics Department Exam2



Medical Physics Program
Medical Radiation Physics1 Course
Course Code (4032485-4)
Exam Time: 90 minutes
1438-14391st Semster

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

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

## III. Choose the correct answer

- 1- If the dose limit for an occupational worker is  $10 \,\mu\text{Sv/hour}$  and working for 5 days per week, 8 hours /day and 50 weeks/year then the total dose is
- a.  $200 \mu Sv/y$
- b. 20 mSv/y
- $c.2000\ \mu Sv/y$
- d. 5 mSv/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  $\mu$ sv/h and  $\mu$  for Cs-137, E= 662 keV is 1,24 cm<sup>-1</sup> . then calculate the thickness required from AL to decrease a dose for 25  $\mu Sv/h$  .

## V- Write notes about:

- 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 التمنياتت بالتوفيق ،،،