

Time allowed: 3 Hours

13/8/2016

M.Sc. Exam, 1<sup>st</sup> Semester  
Clinical Oncology & Nuclear Medicine  
Radiation Physics

All Questions should be answer:

	Marks
1- Define and/or explain :-	
a) Inverse square law	3
b) Half value thickness	3
c) Photo electric effect	3
d) Wedges	3
e) Depth dose curve of electron beam	3
2- Radioactive sources used in brachytherapy (physical properties, energy, sites of application and compare between high dose rate and low dose rate systems).	10
3- Short account on:-	
a) Tissue Phantom ratio ( TPR )	2
b) Tissue Maximum ratio (TMR)	2
c) Phantom scatter factor	2
d) Collimator scatter factor	2
e) Background radiation	2
4- a) In how much time Cs-137 of half life 30 years decays by 2%	5
b) Gas filled detectors	5

\* *Good luck*

**Tanta University**  
**Faculty of Medicine**  
**Clinical Oncology Department**

**Time allowed: 3 Hours**

**15/8/2016**

**M.Sc. Exam, 1<sup>st</sup> Semester**  
**Clinical Oncology & Nuclear Medicine**

**Radiobiology**

**All Questions should be answer:**

	<b>Marks</b>
<b>1- Define and describe the significance of the following terms :</b>	
a) Half-life	<b>3</b>
b) Therapeutic ratio	<b>3</b>
c) Linear energy transfer (LET)	<b>3</b>
d) Alpha/Beta ratio	<b>3</b>
e) Effective dose	<b>3</b>
<b>2) Give short account on:</b>	
a) Radiation induced chromosomal damage	<b>5</b>
b) Radiation effects on the skin	<b>5</b>
<b>3- Altered fractionations</b>	<b>10</b>
<b>4-Total body radiation syndromes</b>	<b>10</b>

*Good luck*

**Tanta University**  
**Faculty of Medicine**  
**Clinical Oncology Department**

**Time allowed: one Hour**

**14/8/2016**

**M.Sc. Exam, 2<sup>nd</sup> Semester**  
**Clinical Oncology & Nuclear Medicine**  
**Optional Determinant**

**All Questions should be answer:**

	<b>Marks</b>
<b>1- The classifications and the rationale of Chemotherapy drugs.</b>	<b>20</b>
<b>2- Mention the classifications, indications and toxicity of plant derived cytotoxic agents in cancer therapy,</b>	<b>25</b>

*Good luck*