## University of Palestine Faculty of Applied Engineering and Urban Planning

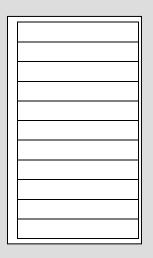
Course Name	Special topics in Biomedical			Course No.		EQUP 3319	
	Engineering						
Academic Year	2018/2019	Semester	2 <sup>st</sup>	Exam T	'ype	Final	
Exam Date	22/05/2019		Exam Time		09:00	09:00 pm- 11:00 pm	

## **Important Instructions**

- This is a closed-book exam; all related material must be placed away from your desk.
- <u>Cell phone use is prohibited for any purpose</u>: Your cell phone must be turned off and placed off of the desk. Cell phones may not be accessed during the exam. Failure to comply may be treated as a violation of the Honor Code.
- <u>Headphones of any kind are not permitted.</u>
- This exam is 120 minutes long.
- Make sure that you have 8 pages including this page.
- This exam has 8 essay questions. Read each question carefully before answering.
- Calculators can be used <u>but cannot be shared</u>.
- When you finish, you must:
  - Check that you have written your information in the spaces provided.
  - Give the exam package (all papers) to the proctor before you leave.

## For Teacher's Use OnlyFor Proctor's Remarks

QN	KPI/ILO	SO	DL	Mark	Weight
1	B1	g	4		10
2	B1	j	2		4
3	B1	С	2		5
4	B2	b	3		6
5	B2	i	3		6
6	B3	b	3		6
7	B3	i	4		7
8	B3	g	3		6
	Tota		50		



KPI: Key Performance Indicator, ILO: Intended Learning Outcomes, SO: ABET Student Objectives, DL: Difficulty Level (1. Very easy, 2. Easy, 3. Moderate, 4. Somewhat hard, 5. Hard, 6. Very Hard)

Q1Mark the right (  $\sqrt{}$  ) and the flash ( X) sentence (10 marks).

1- ( ) By Ozone sterilizer the H2O is subjected to an electrical discharge in an enclosed to produce O3.

2- ( )Kerma is acronym of Kinescopes' energy released per unit mass

**3- ( )** Hot Oven used to sterilize material in sealed container as oiland powder at temperature lower than 160 for one hour

4- ()HEPA filtration is sterilization technique for liquid, it is possible to remove bacteria from liquid by passing them through filters with pores smaller than bacteria.

5-( ) The cosmic radiations will be reached around 0,1 mSv per hour at height of 1 Kilometer

5- ( ) The spore indicators are suitable for monitoring Per acetic acid sterilization.

6- ( ) Chemical germicides are classified by their activity level.

7- ( )The CT room shielding should be provided for the front and rear reference point is 162 mm of concrete to reduce the dose to 1 mgy/year.

8- ( ) In dental clinic the infection control should be considered after installing the building service.

9- ( ) According to CDC recommendations, the total count of CFU (colony forming unit of heterotrophic bacteria /millimeter of water should be more than 900.

10-( ) by SAL, each log reduction 10 -1 will reduce a million organism very close to zero.

Q2: Describe in details the Quality requirement of Compressed air and Vacuum system in modern Dental clinic?

(4marks).

- Q3: i) Explain six advantage of using hydrogen peroxide gas plasma Sterilization ? (2 marks)
- ii) Explain 5 Disadvantages of steam sterilization. (1.5 marks)
- ii) Explain the four Method of steam sterilization. (1.5 marks)
- (Total 5 marks)

Q4: List fife factors Affecting X-ray beam and explain in details twoof this effects? (6 marks).

Q5: i) What is the factors effecting Ozone sterilization? (2marks).

ii) Calculate the following

1.379 bar topsi and atm (how any psi and how many atm) (2 marks)

iii) Draw the schematic of steam Generator in large autoclave and explain

the principle of operation? (2 marks)

(Total 6 marks).

Q6)

i) List seven factors that vary in the level of effectiveness and influence of Chemical Disinfection (3 marks)

ii) Explain in details the 3 classifications of Instruments and devices

(3 marks).

(Total 6 marks)

Q7) Describe in details all CT Dose optimization technique? (7marks).

- Q8. For Dental clinic,
  - I) List the chick list of the builders work and explain in details three of them ? (3 marks)
  - ii) Explain in details the term, sterilization room and the central

Processing area (3 marks)

(Total 6 marks).