




Mansoura University 	Faculty of Pharmacy Department of Microbiology and Immunology		Biomedical Engineering Program General Microbiology & Immunology (BME392) Level 300 Academic year: 2019/2020 Final Exam: 50 Marks 18th of January 2020 Time allowed: 2 hours	
---	--	--	--	---

تعليمات

على الطالب مراعاة الآتى:

- ١- الامتحان يتكون من 9 صفحات تشتمل على:
 - عدد 8 صفحات أسئلة مرقمة من ١ الى ٨.
 - صفحة واحدة مسودة رقم ٩.
- ٢- يجب التأكد من عدد الصفحات قبل البدء فى الإجابة.
- ٣- يجب الإجابة على كل سؤال فى الجزء المخصص له ولن يلتفت الى أى إجابات فى صفحة المسودة أو الأجزاء غير المخصصة له.
- ٤- يجب الكتابة باللون الأزرق فقط وعدم استعمال أى أقلام ملونة أو كركتور.

خالص الأمنيات بالتوفيق

د. محمد أسعد الموافق

ANSWER THE FOLLOWING QUESTIONS:

❖ **Question I: (20 Marks)**

A) Complete the missing parts (المستطيل الأبيض) in the following tables:

Mark:

➤ **Table 1: (5 Marks)**




Student Mark:

Item of comparison:	Prokaryotic cell	Eukaryotic cell
1- Nucleus:		
2- Mitochondria:		
3- DNA:		
4- Example:		

➤ **Table 2: (5 Marks)**

Student Mark:

Item of comparison:	Gram positive bacteria	Gram negative bacteria
1- Lipid content of cell wall:		
2- Outer membrane:		
3- Peptidoglycan layer:		
4- Example:		

Mansoura University 	Faculty of Pharmacy Department of Microbiology and Immunology		Biomedical Engineering Program General Microbiology & Immunology (BME392) Level 300 Academic year: 2019/2020 Final Exam: 50 Marks 18th of January 2020 Time allowed: 2 hours	
---	--	--	--	---

➤ **Table 3: (5 Marks)**

Student Mark:

Antibody:	Role:
IgA:	
IgD:	
IgM:	
IgE:	
IgG:	

B) Draw the growth curve of bacteria, and write on it different phases and their periods: (5 Marks)

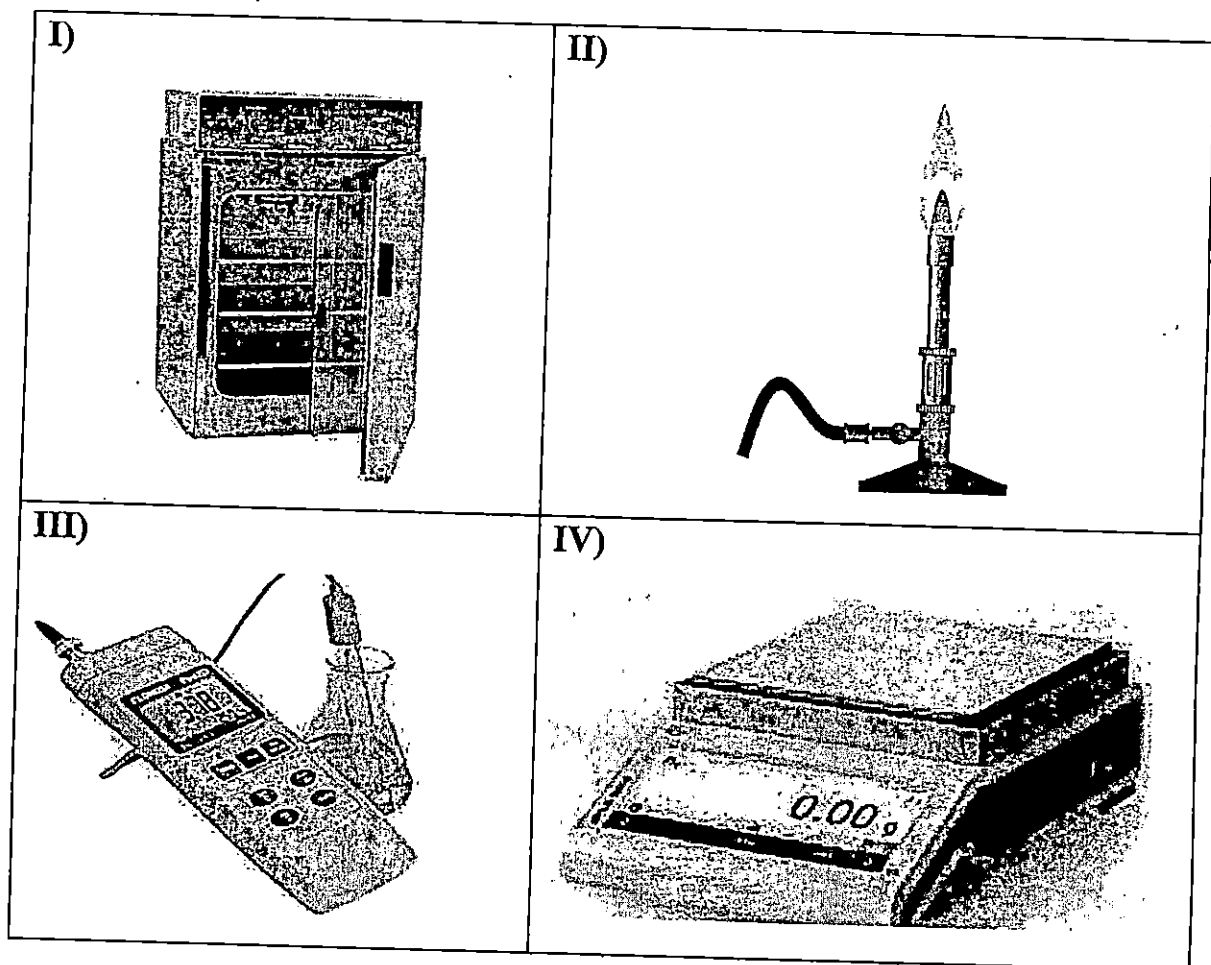
❖ **Question II: (10 Marks)**




- a) The following are tools, devices or consumables that are used in different steps for cultivation of bacteria in a Microbiology lab. Complete the following statements regarding the sequence (ترتيب) of using them in different steps (5 Marks/1 Mark each). Write only the Latin letter.

The first statement is answered as an example.

- 1- The device or consumable or tool that is used in step 1 is ...V....
- 2- The device or tool that is used in step 2 is
- 3- The device or tool that is used in step 3 is
- 4- The device or tool that is used in step 4 is
- 5- The device or tool that is used in step 5 is
- 6- The device or tool that is used in step 6 is

Mark of Question II:

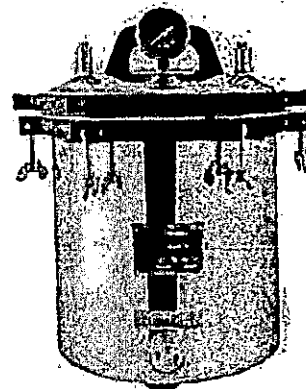


<p>Mansoura University</p> 	<p>Faculty of Pharmacy</p> <p>Department of Microbiology and Immunology</p> 	<p>Biomedical Engineering Program</p> <p>General Microbiology & Immunology (BME392)</p> <p>Level 300 Academic year: 2019/2020</p> <p>Final Exam: 50 Marks</p> <p>18th of January 2020</p> <p>Time allowed: 2 hours</p> 
--	--	---

V)



VI)

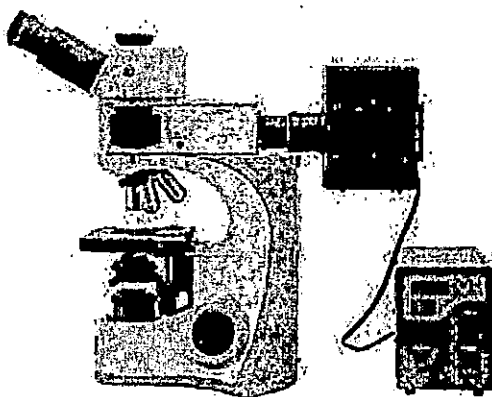


b). Answer the following statements regarding microscopes using the figures provided below. (5 Marks/ One Mark each)

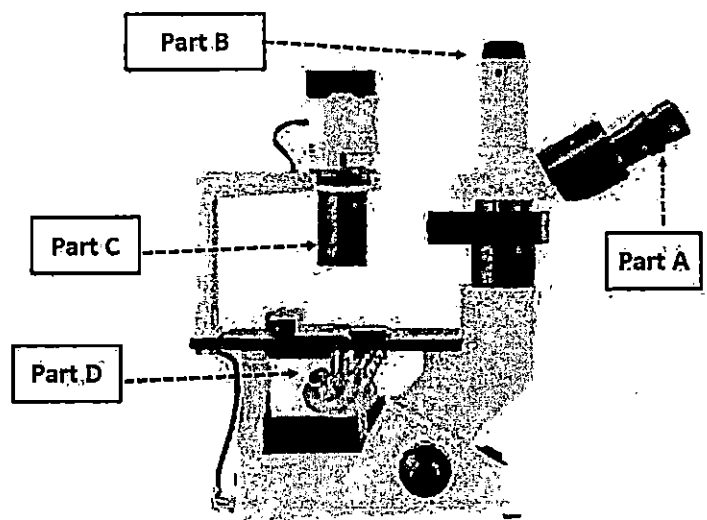
- 1- The illuminating source in microscope II is present in part
- 2- The oil immersion lens is present in microscope II:
 - a) In part A b) In part C c) In part D d) Not present in this microscope
- 3- An example of microscope that contains mercury lamp is:
 - a) Microscope I b) Microscope II c) Microscope III d) Microscope I & III
- 4- A microscope with the objective lenses in figure IV is used for:
 - a) Examination of plants & animal tissues
 - b) Examination of parasites
 - c) Examination of bacteria
 - d) All the above
 - e) Only a & b
- 5- An example of inverted microscope is:
 - a) Microscope I & II
 - b) Microscope II & III
 - c) Microscope I & III
 - d) Only microscope II



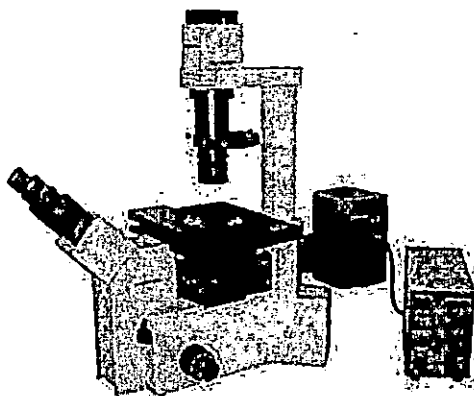
I)



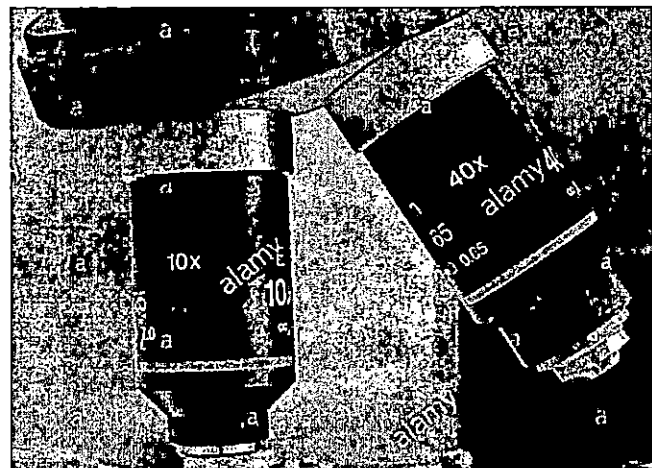
II)



III)



IV)



❖ **Question III: (20 Marks)**




Mark:


Choose the correct answer for the following statements and transfer its letter to the table below: (20 Marks/1 Mark each)




ولن يلتفت الى اى اجابات خاصة بهذا السؤال الا فقط الموجودة في المكان المخصص لها بالجدول التالي:

Question number	Answer	Question number	Answer	Question number	Answer	Question number	Answer
1		6		11		16	
2		7		12		17	
3		8		13		18	
4		9		14		19	
5		10		15		20	

1- Bacteria that are able to move must have:			
a) Flagellum	b) Capsule	c) Pilus	d) Flagellum & Capsule
2- The following protect/or protects S. aureus from mechanical damage and lysis:			
a) Cell wall		b) Cell membrane	
c) Capsule		d) All the above	
3- Examples for the use of bacteria in the biotechnology field, the production of:			
a) Plastic	b) Water	c) Paper	d) Yoghurt
4- Penicillin antibiotic targets:			
a) Cell membrane	b) Capsule	c) Ribosome	d) Cell wall
5- Bacteria A is more pathogenic than bacteria B, this means that bacteria A is:			
a) More able to cause a disease	b) Difficult to be detected in labs	c) Needs special conditions for their growth	
d) Difficult to be detected in labs and More able to cause a disease			

Mansoura University 	Faculty of Pharmacy Department of Microbiology and Immunology		Biomedical Engineering Program General Microbiology & Immunology (BME392) Level 300 Academic year: 2019/2020 Final Exam: 50 Marks 18th of January 2020 Time allowed: 2 hours	
---	--	--	--	---




6- Environmental factors affecting the growth of Mycobacterium tuberculosis include:			
a) Temperature, PH, Oxygen concentration, macronutrients.		b) Temperature, PH, Oxygen concentration	
c) Macronutrients, trace elements, and growth factors.		d) Temperature, PH, macronutrients.	
7- The following shape of fungi ”  “ is called:			
a) Yeast	b) Hypha	c) mycelium	d) Cocci
8- Saccharomyces cerevisiae is examined by:			
a) 10x or 40x objective lens		b) Electron microscope	
c) 100x oil immersion lens		d) 120x objective lens	
9- An example of an antibiotic that is produced by fungi is:			
a) Hepatitis B vaccine	b) Insulin	c) Penicillin	d) Streptomycin
10- Immune system is important in:			
a) Defense against infections		b) Defense against Cancer	
c) Clearance of dead tissues		d) All the above	
11- An example of RNA virus is:			
a) Hepatitis C	b) Influenza	c) Herpes	d) Both A & B
12- Skin, tears, stomach acidity are examples of:			
a) First line of defense		b) Second line of defense	
c) Third line of defense		d) Specific immunity	
13-The common genotype of hepatitis C (HCV) in Egypt is:			
a) 2	b) 3	c) 4	d) 6
14-The following type of transport requires energy:			
a) Facilitated diffusion	b) Osmosis	c) Active transport	d) Simple diffusion

Mansoura University 	Faculty of Pharmacy Department of Microbiology and Immunology		Biomedical Engineering Program General Microbiology & Immunology (BME392) Level 300 Academic year: 2019/2020 Final Exam: 50 Marks 18th of January 2020 Time allowed: 2 hours	
---	--	--	--	---

15-The following is true regarding inverted microscope:			
a) Used in routine examination of parasites.		b) Used in cell culture technique	
c) The magnification power of objective lens could be 5x, 10x, 40x, or 100x.		d) All the above	
16- An objective lens can be either:			
a) Low power	b) Oil immersion	c) High power	d) All the above
17-GFP is a fluorescent:			
a) Dye that gives green fluorescence		b) Protein that gives green fluorescence	
c) Dye that is excited by green light.		d) Protein that is excited by green light.	
18-Viruses can grow:			
a) In suitable cultivation medium		b) By Cell culture technique	
c) In experimental animals		d) Both B & C	
19- The following is true regarding the use of fluorescence technique in chemical analysis or diagnosis of infections:			
a) A fluorophore is bounded to GFP or antibody.			
b) Fluorescent microscope is used mainly for quantitative detection of fluorescence.			
c) Fluorometer is used for quantitative detection of fluorescence			
d) Both A & C			
20- The following is true regarding immunology, an antibody binds to:			
a) Single specific antigen on bacteria		b) More than one antigen on bacteria	
c) Both A & B		d) No answer is correct	

Good Luck

Dr. Mohammed Asaad Elmowafy

Mansoura University 	Faculty of Pharmacy Department of Microbiology and Immunology		Biomedical Engineering Program General Microbiology & Immunology (BME392) Level 300 Academic year: 2019/2020 Final Exam: 50 Marks 18th of January 2020 Time allowed: 2 hours	
---	--	--	--	---

Draft paper (مسودة)