



Mansoura UNIVERSITY
FACULTY OF PHARMACY
GENERAL MICROBIOLOGY and Immunology EXAM
DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

30th December 2017
TIME ALLOWED: 2 HOURS

تعليمات

1. الامتحان يتكون من 9 صفحات أسئلة مختلفة وصفحة تعليمات وصفحة مسودة.
2. أسئلة الامتحان مقسمة على 4 اجزاء: Question 1, 2, 3 and 4.
3. يجب التأكد من عدد الصفحات وعدد الأسئلة قبل البدء في الإجابة.
4. يجب الإجابة على كل سؤال في مكان الإجابة المخصصة له.
5. يجب الإجابة باللون الأزرق فقط ويمنع استخدام أى أقلام ملونة.

Instructions

1. The Exam consists of 9 Pages of Different Questions, Instructions Page and Draft Page.
2. The questions are divided into four parts: Question 1, 2, 3, and 4.
3. Be sure of numbers of papers and numbers of questions.
4. Answer each question in its positions.
5. Use the blue pen only for your writing and do not use any colored pens.

With my best wishes

Dr. Abdelaziz Ahmed Elgaml

Question one

Mark the following statements True or False:
Please give your answer in the following table:

10 Marks

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

No.	Statement
1	Prokaryotic cells contain 80 s ribosomes.
2	The term Tetrads is used to describe the bacterial cell shapes.
3	Bacterial pili are involved in motility.
4	The 70 S ribosomes consist of A 50S and a 20S subunit.
5	Both prokaryotes and eukaryotes have Mitochondria.
6	The bacterial cell membrane composed of phospholipids, carbohydrates and proteins.
7	Bacteria use common pili for the adhesion to the host tissues.
8	Bacteria use sex pili for the conjugation to each other and transfer of genetic material.
9	Flagella are composed of protein called flagellin.
10	Bacterial capsules can prevent desiccation of bacterial cells.

11	Psychrophiles is a term referring to organism that best grow at high temperatures.
12	An organism is capable of photosynthesis but use organic matter as carbon source. This organism is Chemoorganotrophic.
13	Osmophiles and Xerophiles are organisms that can grow in Low sugar concentration and Dehydrated environments, respectively.
14	An organism is capable of oxidizing fatty acids to obtain energy, hydrogen, electrons and carbon. This organism is Photolithotrophic.
15	The endospore layer containing calcium and dipicolinic acid is the Exosporium.
16	Starvation proteins are produced by a culture during decline phase of the growth curve.
17	A culture of bacteria produces 5 generations in 2 hours. The generation time for this bacterium under those conditions is 15 minutes.
18	<i>Bacillus cereus</i> was inoculated in a culture medium with exactly 100 bacterial cells. After 3 hours, the bacterial cells became 6400 cells. The generation time for this bacterium is 20 minutes.
19	Endospore formation is common among Gram negative bacteria.
20	Penicillin is the drug of choice for the treatment of Mycoplasma.

Choose the best correct answer for the following statements:
Please give your answer in the following table:

10 Marks

1	2	3	4	5	6	7	8	9	10
a	c	c	d	d	b	b	b	b	b
11	12	13	14	15	16	17	18	19	20
d	d	d	d	d	b	b	b	b	b

No.	Statement
1	The most basic form of fungi a) Yeast b) Mold c) Mushroom d) Mycelium
2	Asexual spores of the fungi that are formed in a sac are termed a) Arthrospores b) Conidia spores c) Sporangiospores d) Phialospores
3	Toxin produced by Aspergillus species and contributes to primary hepatic carcinoma. a) Mycotoxin b) Shiga toxin c) Aflatoxin B1 d) Enterotoxin
4	Viruses can reproduce a) Outside the host cells b) On non living surfaces c) On basic media d) Inside the host cells
5	According to metabolism, fungi are classified as a) Carbon lithotrophs b) Carbon autotrophs c) Carbon phototrophs d) Carbon heterotrophs

15	Most antifungal agents present in the market target a) Nucleic acid c) Asexual spores b) Protein synthesis d) ergosterol and glucan
16	A virus that replicates in a bacterial host cell is called a) Bacteriocin c) Prion b) Bacteriophage d) Oncogenic virus
17	The most appropriate method for cultivation of viruses a) On basic media c) On enriched media b) On tissue culture d) On selective media
18	The process by which the bacterial cell releases its waste products. a) Phagocytosis c) Pinocytosis b) Exocytosis d) Endocytosis
19	An apparatus used for the continuous cultivation of microorganisms. a) Laminar flow hood c) Autoclave b) Chemostat d) Thermocycler
20	Bacteria which are highly resistant to acids, staining and treatment a) Spheroplast c) Atypical bacteria b) Acid fast d) Gram negative

Question three

Complete the following statements:

6 Marks

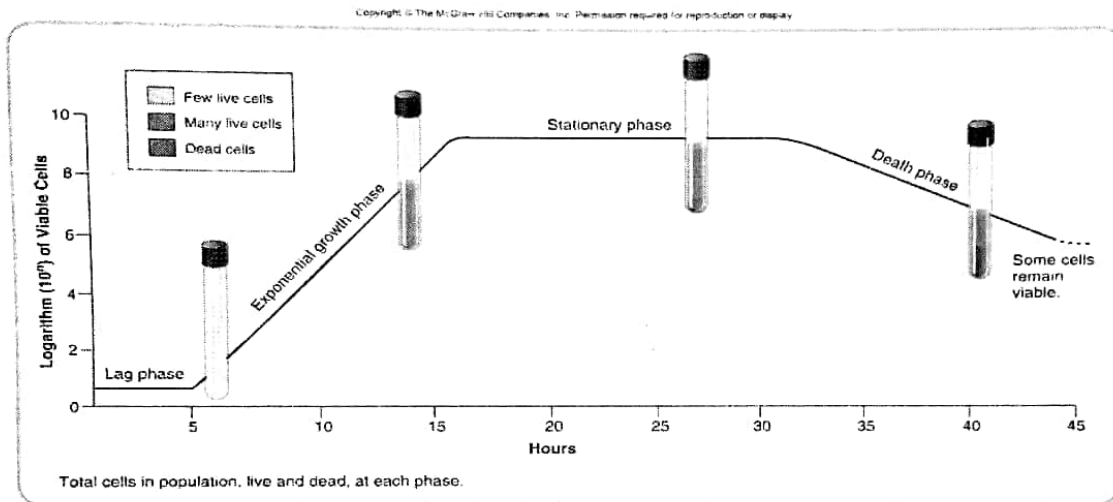
Statement	Answer
1- Helper T cells detect infection and secrete signals called that trigger the proliferation of both T cells and B cells.	Interleukins
2- T-cells tell the immune system when the battle with the infectious pathogens is over to stop fighting.	Suppressor
3- immune response involve antibodies and other proteins found in body fluid.	Humoral
4- The part of antigen that binds to the antibody is named	epitope
5- The region at which the arms of the antibody molecule form Y shape is called	Hinge region
6- antibody plays a role in parasitic helminth diseases.	E
7- antibody normally exists as monomer.	G
8- refers to the strength of binding between a single antigenic determinant and an individual antibody combining site.	Affinity
9- In the primary immune response the major class of Ab produced is	M
10- immunity includes the first and second lines of defense.	Innate
11- T-cells are maintained in the body, and when the antigen is encountered again, these cells quickly begin to respond.	Memory
12- is the major Ig in serum.	G

Question Four

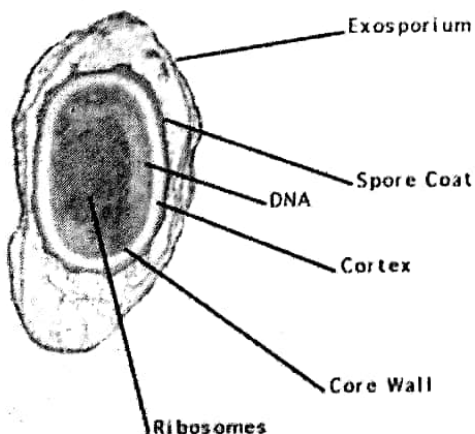
By drawing only illustrate each of the following:

24 Marks

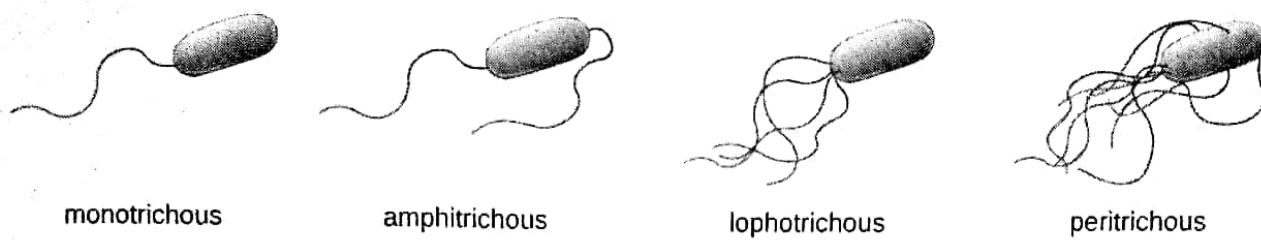
1- Bacterial growth curve indicating the growth phases.



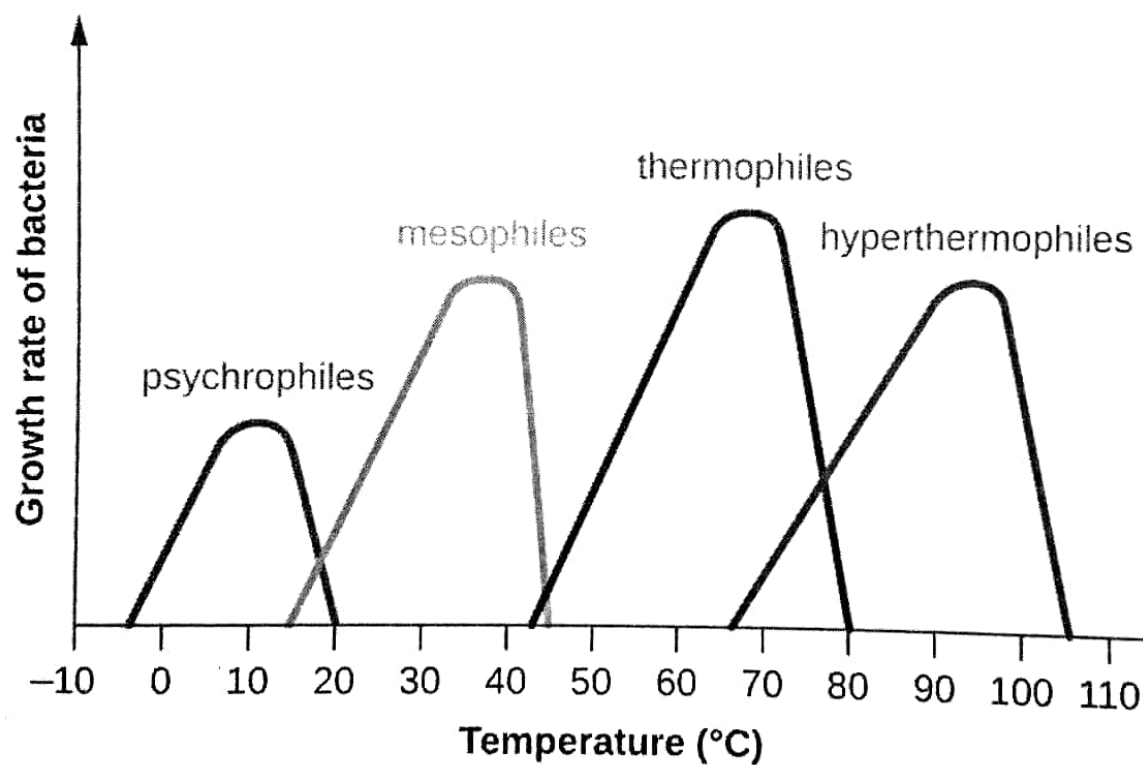
2- Coats of the bacterial endospore.



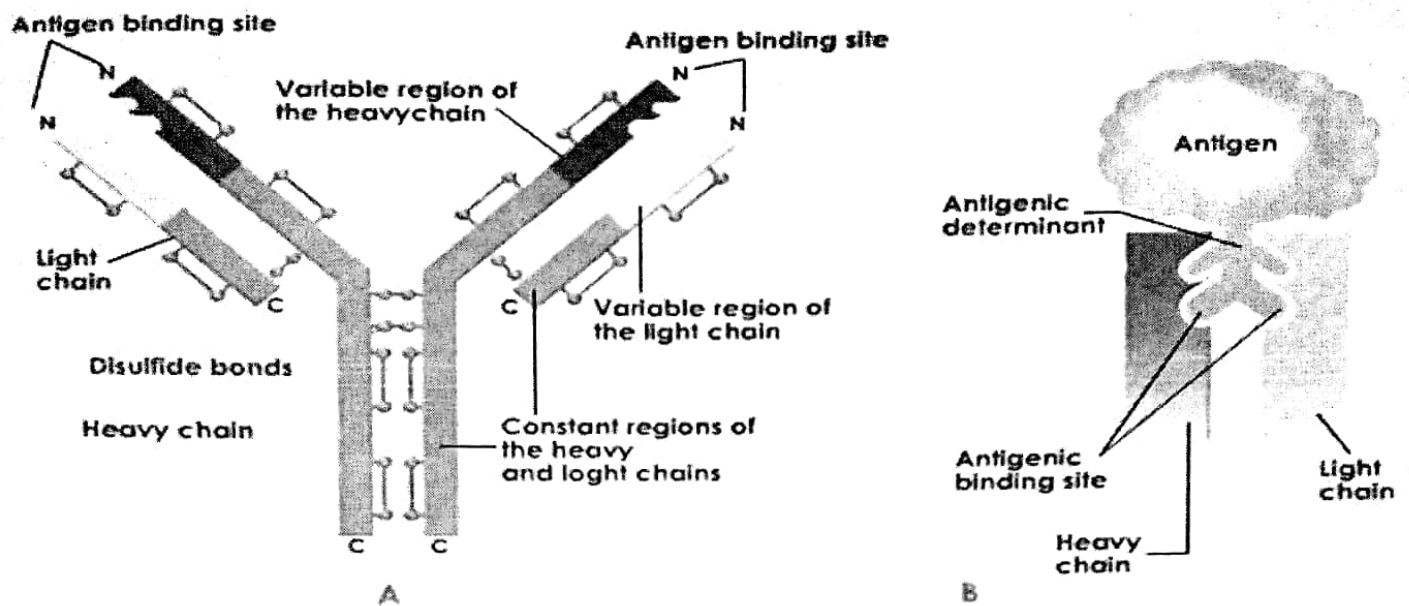
3- Types of the arrangement of flagella in bacteria.



4- Classification of the organisms according to temperature.

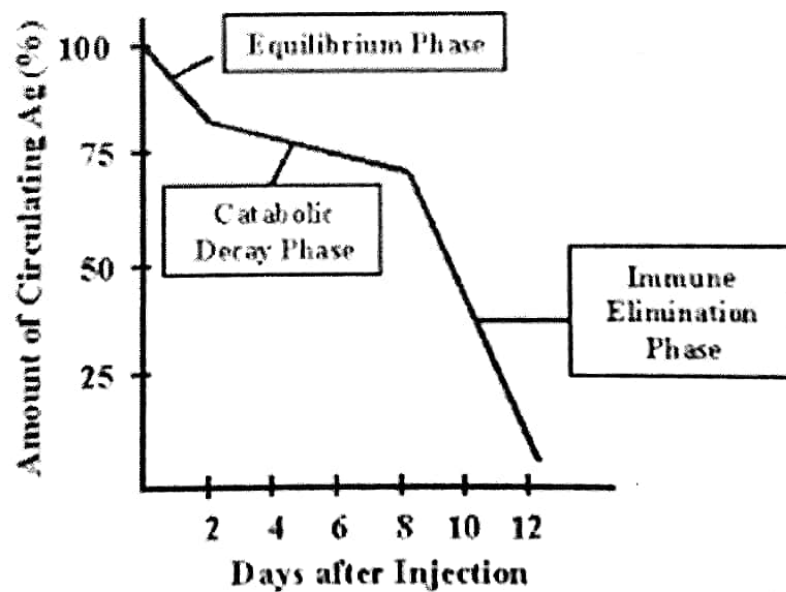


5- Structure of the immunoglobulin.



Immunoglobulins : A. Structure, B. Antigen binding site

6- Fate of the antigen after infection.



Best of Luck