امتحانات الفصل الدراسى الاول

للعام ٢٠١٦/٢٠١٧

المستوى الثالث

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	TANTA UNIVERSITY FACULTY OF SCIENCE DEPARTMENT OF BOTANY			
	EXAMINATION FOR FRESHMEN (3 RD YEAR) STUDENTS OF SPECIAL MICRO			
	COURSE TITLE:	VIROLOGY		COURSE CODE:MB 3101
DATE:	29/12/2016	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 H

Answer the following questions:

1- **Write (√) or (×) on the following and correct the wrong:** **(20 marks)**

a) ss DNA (+ sense) when translated to m RNA converted to ds RNA (± sense).
b) Influenza virus has genome segmented into two identical molecules of DNA.
c) Host range mutant involve change in temp.
d) Icosahedron is symmetrical structure roughly spherical in shape which has 40 faces.
e) Virulent virus means their genetic material can integrated into host genomes.

2- **Write short notes on the following:** **(20 marks)**

a) Recombination.
b) Overlapping of genes in phage ΦX174.
c) Persistent infection.
d) Neuraminidase enzyme.
e) Transformation.

3- **Compare between the following (with drawing):** **(20 marks)**

a) Morphological structure between T_7 & T_4 phages.
b) One step growth curve of animal and bacterial.
c) Nacked virus and enveloped virus.
d) Formation of m RND of DNA viruses and RNA viruses after cell infection.

4- **Complete the following:** **(20 marks)**

a) The DNA molecule in T_4 phage have unique base called ..... .
b) Phage T_7 is close relative to ..... .
c) In non envolped viruses, the nucleic acid percent often about ..... .
d) The culture media used for cell culture are generally contain ..... .
e) Viruses can overcome host restriction mechanisms by ..... .

5- **Chose the correct answer for the following:** **(20 marks)**

a) The genes of eucaryotes are splite with non coding region called:
   1- Exon. 2- Intron. 3- Both.
b) Most of the bacterial viruses studied on such as:
   1- E.coli. 2- Salmonella. 3- Both.
c) m RNA in prokaryote is generally:
   1- Coding for one polypeptide. 2- Coding for more polypeptide.
   3- Non coding for polypeptide.
d) The nucleic acid of T_7 is:
   1- Circular ds DNA. 2- Linear ds DNA. 3- Linear ss DNA.
e) Animal viruses enter the host cell by:
   1- Hole in cell. 2- Lysis of the cell. 3- Endocytosis.

EXAMINERS	DR. SAMIA SHABANA.	DR.WAGEH EL-SHONY

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EXAMINERS	DR. SAMIA SHABANA.	DR.WAGEH EL-SHONY

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TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY

FINAL EXAMINATION FOR THE THIRD YEAR (SPECIAL MICROBIOLOGY AND BOTANY)

DATE: 4/1/2017	COURSE TITLE: APPLIED MICROBIOLOGY		COURSE CODE: MB3113	
	JANUARY 2017	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED:2 HOURS	

The exam is comprised of 3 pages

Answer the following questions

QUESTION I. GIVE REASON (S) (30 MARKS)

1- Priority of enzymes as biological detergent.
2- Bacteria protease is more favorable than fungal protease for dehairing of goat skins in the tannery.
3- The need to produce lactose-free milk
4- The partial neutralization of the free itaconic acid during fermentation process.
5- Enzymatic desizing is the most widely used method for the removal of starch.
6- Fungal α- amylase is superior to bacterial α- amylase in bread making.
7- Production of itaconic acid requires very low pH
8- Lime is added to the culture medium during citric acid recovery
9- All new enzyme preparations developed are of microbial origin.
10- Microbial proteases are used increasingly in cheese making as a substitute for natural rennet

QUESTION 2. Check √ or X for the following sentences (20 marks)

1. Constitutive enzyme are produced in response to addition of a particular substance ( )
2. Purity of the product depend on the nature of Use ( )
3. Production of citric acid requires a low pH ( )
4. The main precursors for the production of Penicillin G is phenylacetic acid ( )
5. Active penicillin production is associated with lactose and ammonia utilization ( )
6. The use of immobilized enzymes is an alternative method for penicillin production ( )
7. Quality control of the product is determined by the cost and purity ( )
8. Griseofulvin is one of beta- lactam antibiotics ( )
9. Microbial fermentations are used to produce inorganic acids ( )
10. The native penicillin is potent enough for clinical use ( )
11. Penicillinase is an enzyme used commercially to produce semisynthetic penicillin ( )
12. Overheating of fermenter during fermentation is controlled by cool air ( )
13. A major ingredient of penicillin production media is Corn meal ( )
14. Amino acid and nucleotides are Secondary metabolites ( )
15. The composition of the fermentation medium must include Precursor ( )
16. Primary metabolites have no obvious role in the lives of the organisms ( )
17. Gluconic acid is used as a pharmaceutical to supply calcium to the body ( )
18. Industrial microbiology, mainly depends on the fermentation phenomenon ( )
19. Keeping the acquired characters over a long time called strain stability ( )

15) Glucose isomerase is used as

a) slimming food b) Analytical reagent

c) Extraction of vegetable Oils d) all of these

16) Production of cephalosporin C was induced by

a) Methionine b) Mycophenolate c) Cyclosporine d) all of these

17) The modified steroid is recovered from the medium by

a) Extraction with solvent b) precipitation

c) Centrifugation d) None of these

18) Secondary metabolites production is

a) extremely specific b)Nonspecific c) specific d) None of these

19) Batch fermentation is also called

a) Closed system b) Open system c) Fed-batch system d) none of these

20) Which one of the following organic acid is used to supply calcium to the body?

A) gluconic acid b)Citric acid c) itaconic d) None of these

QUESTION 4. ENUMERATE THE FOLLOWING (20 MARKS)

1. Quality control of the production process should include check on
   1, 2, 3, 4, 5,
2. Modern method of semisynthetic penicillin production involve
   1, 2, 3,
3. The following biotransformation are obtained by microorganisms
   1, 2, 3, 4, 5,
4. Application uses of Microbial steroid
   1, 2, 3, 4,
5. The main factors to be considered during selection of microbial strain to produce enzymes
   1, b, c,
6. Stages involved in the production of a desired products from microorganisms
   1, 2, 3, 4, 5,
7. Different types of fermentation processes
   1, 2, 3, 4, 5, 6,

QUESTION 5. COMPARE BETWEEN THE FOLLOWING (10 MARKS)

1. Crude and refined media
2. Primary and secondary metabolites

With my best wishes

EXAMINER	MOHAMED YASER BEDAIWY

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TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF BOTANY

EXAMINATION FOR FRESHMEN (3 RD YEAR) STUDENTS OF SPECIAL MICRO

DATE: 9/1/2017	COURSE TITLE: PHYSIOLOGY OF BACTERIA	COURSE CODE:MB 3105
	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 H

Answer the following questions:

1- Discuss:

a) Sulfolobus brierleyi can grow by 2 ways to obtain energy.
b) Some bacteria can use proteins as source of energy.
c) The chemiosmotic hypothesis.
d) Catabolism of polysaccharides by microorganisms.
e) Formic acid fermentation.

(25 marks)

2- Write (√) or (×) and correct the false:

a) The enzyme of B-oxidation present in cytoplasm in eukaryotes.
b) Most bacteria catabolism glucose by the entner-doudroff pathway.
c) The different in reduction potentials between O_2 and NADH is small and makes the release of energy.
d) In TCA cycle enzyme system called dehydrogenase complex oxidizing pyruvate to form CO_2.
e) The reoxidation of NADH means using inorganic material as electron donor.

(15 marks)

3- Define the following:

a) Electron transport chain.
b) Chemolithotrophy organisms.
c) Amphipolic pathway.
d) B-oxidation.
e) Methanoges.

(20 marks)

4- Compare between the following

a) Electron transport chain in [illegible]teria and mitochondrial chain.
b) Nitrification and denitrifi[illegible]n.
c) Anaerobic respiration ar[illegible]mentation.
Catabolism of starch an[illegible]P.

(20 marks)

he follwing:

[illegible] cycle. (drawing)
[illegible]e pathway.

TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY				
FINAL EXAMINATION FOR 3RD LEVEL STUDENTS OF SECTIONS: SPECIAL MICROBIOLOGY & MICROBIOLOGY-CHEMISTRY				
COURSETITLE:	MEDICAL MICROBIOLOGY		COURSE CODE: MB3107	
DATE: 21	JAN., 2017	FRESH	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS

I-Medical Bacteriology

1- Complete the following: **(10 marks)**

a. Staphylococcal resistance to penicillin is mediated by ....

b. The types of streptococcal hemolysis includes ....and ....

c. The blue pigment pyocyanin is a diagnostic agent for ....

d. .... is a diagnostic enzyme for the bacterium *H. pylori*, while coagulase is diagnostic for the bacterium ....

e. Concerning oxygen requirement, ...is microaerophilic and this bacterium causes the disease ....

2- Put (T) for true sentence and (F) for false sentence. **(10 marks)**

a. Staphyloxanthin is produced by *S. epidermidis* ( ).

b. M-protein is associated to rheumatic fever caused by *S. pyogenes* ( ).

c. *E. coli* O157: H7 is diagnosed using MacConkey agar with sorbitol ( ).

d. *B. anthracis* is a Gram negative endospore forming bacterium ( ).

e. *V. cholera* is a Gram positive comma shaped bacterium with monopolar flagellum ( ).

3- Discuss Only two of the following: **(30 marks)**

a) Types and symptoms of Anthrax.

b) Treatment of rheumatic fever, leprosy and peptic ulcer.

c) *E. coli* diarrhroea.

II-Medical Mycolology

4- With labelled diagram discuss in details Coccidioidomycosis and sporotrichosis diseases. Mention the shape of culture, name of fungus, level of infection, symptoms and treatment of each one.

(25 marks)

5- Compare between tinea capitis and tinea pedis. Mention the name and shape of the fungus, symptoms and treatment of each one.

(25 marks)

==

Best Wishes

Examiners: Prof. Dr. Wagih El-Shouny Prof. Dr. Suzan Al-Sawah

TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF BOTANY

EXAMINATION FOR FRESHMEN (3 RD YEAR) STUDENTS OF SPECIAL MICRO

COURSE TITLE:	PHYSIOLOGY OF BACTERIA		COURSE CODE: MB 3105
DATE: 9/1/2017	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 H

Answer the following questions:

1- Disccus: **(25 marks)**

a) Sulfolobus brierleyi can grow by 2 ways to obtain energy.
b) Some bacteria can use proteins as source of energy.
c) The chemiosmotic hypothesis.
d) Catabolism of polysaccharides by microorganisms.
e) Formic acid fermentation.

2- Write (√) or (×) and correct the false: **(15 marks)**

a) The enzyme of B-oxidation present in cytoplasm in eukaryotes.
b) Most bacteria catabolism glucose by the entner-doudroff pathway.
c) The different in reduction potentials between O_2 and NADH is small and makes the release of energy.
d) In TCA cycle enzyme system called dehydrogenase complex oxidizing pyruvate to form CO_2.
e) The reoxidation of NADH means using inorganic material as electron donor.

3- Define the following: **(20 marks)**

a) Electron transport chain.
b) Chemolithotrophy organisms.
c) Amphipolic pathway.
d) B-oxidation.
e) Methanoges.

4- Compare between the following: **(20 marks)**

a) Electron transport chain in bacteria and mitochondrial chain.
b) Nitrification and denitrification.
c) Anaerobic respiration and fermentation.
d) Catabolism of starch and PHB.

5- Illustrate the following: **(20 marks)**

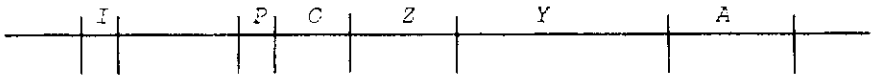
a) Tricarboxylic acid cycle. (with drawing)
b) Importance of pentose phosphate pathway.
c) Glycolytic pathway. (with drawing)
d) Hydrogen oxidizing bacteria.

EXAMINERS	DR. SAMIA SHABANA.	DR.WAGEH EL-SHONY

BOTANY DEPARTMENT - **TANTA UNIVERSITY** - FACULTY OF SCIENCE			
Examination / Third level / Microbiology Special Students			
Course Title:	**Control of Gene Expression**		Course Code: **BO3111**
26 January **2017**	Term: **First**	Total assessment marks: **100**	Time Allowed: **2** hours

ANSWER THE FOLLOWING QUESTIONS

1. **Where would the lac repressor be bound in a (non-mutant) *E. coli* cell that is growing in low glucose and high lactose?** Use the following diagram of the *lac I* gene and *lac* operon. (*I* = *lac* repressor gene; *Z, Y, A* = *lac* operon structural genes; *P* = *lac* promoter; *O* = *lac* operator) **(5 Marks)**



2. **A mutation occurs in the 5′ UTR of the *trp* operon that reduces the ability of region 2 to pair with region 3.** What will the effect of this mutation be when the tryptophan level is high? When the tryptophan level is low? **(20 Marks)**

3. **Indicate whether each of the following statements is true (T) or false (F) and correct the false ones. (30 Marks)**

   a- In the absence of tryptophan, the genes of the *trp* operon are not expressed. ( )
   b- *E. coli* lac operon control by CAP is positive inducible. ( )
   c- The gene regulation in eukaryotic cells occurs only at transcriptional level. ( )
   d- The DNA of bacterium is wrapped around histone molecules to form a "beaded string." ( )
   e- Some activators have acetyltransferase activity and stimulate transcription by altering chromatin structure. ( )
   f- Mediator is one of the components of the basal transcription apparatus. ( )
   g- In yeast, transcription is activated by GAL4 in response to lactose. ( )
   h- Groups of bacterial genes are often coordinately expressed because they have one promoter. ( )
   i- Regulatory genes are genes whose products, either RNA or proteins. ( )
   j- Antisense RNA controls gene expression by binding to sequences on ribosome and inhibiting translation. ( )

4. **Compare between the following:** **(20 Marks)**

   a. Inducible and repressible genes.

   b. Gene control by chromatin remodeling and histone acetylation.

5. **What is catabolite repression? How does it allow a bacterial cell to use glucose in preference to other sugars?** **(25 Marks)**

With my best wishes *Prof. Dr. Reda Gaafar*

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