
	TANTA UNIVERSITY, FACULTY OF SCIENCE, DEPARTMENT OF BOTANY			
	FINAL EXAMINATION FOR THE THIRD YEAR (SPECIAL MICROBIOLOGY AND BOTANY)			
	COURSE TITLE	APPLIED MICROBIOLOGY	COURSE CODE: MB3113	
DATE: 14 / 11 / 2021	JAN 2021	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS	

Answer the following questions

Question 1. Give reason(s) for the following (30 marks)

- 1- All new enzyme preparations developed are of microbial origin.
- 2- Production of sufficient quantities of bioethanol has obstacles.
- 3- Microbial transformation much better than chemical transformation.
- 4- It is difficult to obtain primary metabolites from fermented culture.
- 5- Advantage of enzymatically desizing of fabrics in textile industry.
- 6- The need to produce lactose-free milk
- 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 \checkmark or \times for the following sentences (20 marks)

- | | |
|--|-----|
| 1. Quality control of the product is determined by the cost and purity | () |
| 2. Griseofulvin is one of beta- lactam antibiotics | () |
| 3. Microbial fermentations are used to produce inorganic acids | () |
| 4. The native penicillin is potent enough for clinical use | () |
| 5. Penicillinase is an enzyme used commercially to produce semisynthetic penicillin | () |
| 6. Overheating of fermenter during fermentation is controlled by cool air | () |
| 7. A major ingredient of penicillin production media is Corn meal | () |
| 8. Amino acid and nucleotides are Secondary metabolites | () |
| 9. The composition of the fermentation medium must include Precursor | () |
| 10. Primary metabolites have no obvious role in the lives of the organisms | () |
| 11. Gluconic acid is used as a pharmaceutical to supply calcium to the body | () |
| 12. Industrial microbiology, mainly depends on the fermentation phenomenon | () |
| 13. Keeping the acquired characters over a long time called strain stability | () |
| 14. Citric acid used in used in leather tanning | () |
| 15. Constitutive enzyme are produced in response to addition of a particular substance | () |
| 16. Purity of the product depends on the nature of Use | () |
| 17. Production of citric acid requires a low pH | () |
| 18. The main precursors for the production of Penicillin G is phenylacetic acid | () |
| 19. Active penicillin production is associated with lactose and ammonia utilization | () |
| 20. The use of immobilized enzymes is an alternative method for penicillin production | () |

Question 3. Chose the correct answer (20 marks)

- 1) The most important nutrient factors affecting fermentation process

a) Carbon source	b) Nitrogen source	c) Minerals	d) All of above
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- 2) Strain maintenance is to preserve the strain from

a. Death	b. Contamination	c. Loss of acquired characters	d.all of the above
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- 3) The penicillin produced in large scale submerged fermentations is

a) Penicillin-A	b) Penicillin-D	c) Penicillin-J	d) None of these
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- 4) The most effective antibiotic available for the systemic treatment of fungal infections of skin

a. penicillin	b. cephalosporin	c. streptomycin	d. None of these
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- 5) Aspergillus niger is used generally for the production of

a. Ethanol	b. Penicillin	c. Itaconic acid	d. None of these
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- 6) 6-amino penicillic acid is prepared from penicillin by

a) Acylase	b) Penicillinone	c) Penicillin acylase	d) None of these
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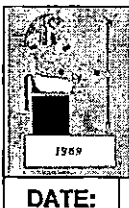
- 7) Submerged fermentations are
 a) Batch fermentation b) Continuous fermentation c) Both a and b d) None of these
- 8) By product of cornstarch manufacture is
 a) Sugar can syrup b) Beet molasses c) corn steep liquor d) None of these
- 9) Cellulase enzyme is used in
 a) Removal of cell walls b) Production of lignin c) a and b d) None of these
- 10) All of the following are not involved in bioethanol production except
 a) Inducer b) Cooling coil c) Antifoam d) yeast
- 11) Regarding to gluconic acid production all the following statements is true except
 a) Used in dishwasher detergents b) produced by *Aspergillus* sp.
 c) The fermentation is carried out at 30 degree d) Used in leather tanning
- 12) Which of the following is an acceptable method for recovery of ethanol?
 a) evaporation b) precipitation c) filtration d) None of these
- 13) The advantage of the Semi-solid cultivation
 a) Lower risk of infection b) Less lab and space requirements
 c) a and b d) None of these
- 14) The main advantage of submerged culture is
 a) Comparatively low investment level b) High enzyme concentration
 c) More natural growth manner d) None of these
- 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 compare between the following (30 marks)

1. Crude and refined media
2. Primary and secondary metabolites
3. Different generations of cephalosporin
4. Characters and application of fungal and bacterial enzymes.

With my best wishes

EXAMINER	MOHAMED YASER BEDAWY
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TANTA UNIVERSITY
FACULTY OF SCIENCE
DEPARTMENT OF BOTANY

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

COURSE TITLE:	PHYSIOLOGY OF BACTERIA		COURSE CODE: MB 3105
DATE:	17/1/2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100
			TIME ALLOWED: 2 H

I. Complete:

(15 Marks)

- A. In third stage of metabolism molecules are oxidized completely to
1) with production of 2) 3) & 4)
- B. The KDPG is cleaved by KDPG aldolase to
1) 2)
- C. Denitrification is carried by some member of genera
1) 2)
- D. In microbial fermentation the electron acceptor is
1) or 2)
- E. The function metabolism path ways is
1) 2)

II. Write (False) or (True) in the following and correct the false.

(15 Marks)

- A. In TCA cycle multi enzyme system called aldolase complex first oxidizes pyruvate to CO_2 and acetyl Co-A.
- B. Amphibole path way function in catabolism.
- C. The actual P/O ratios may be equal 3.0 & 2.0 in eukaryotic mitochondria.
- D. Some chemolithotrophy bacteria can function heterotrophy.
- E. Food spoilage bacteria can use protein by physpholysis enzymes.

III. Illustrate with drawing the following:

(30 Marks)

- A. TC A cycle and its function.
- B. Glycol tic path way.

IV. Discuss the following:

(40 Marks)



- A. Nitrification.
- B. Degradation of external disaccharides.
- C. Catabolism of lipid.
- D. Formic acid fermentation.

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Best wishes.

EXAMINERS:

DR. SAMIA SHABANA.

DR. ABD EL- RHEEM ALSHANSHORY.

	Tanta University, Faculty of Science, Department of Botany and Microbiology		
	Final Examination for (third Level) Students of Chemistry/Microbiology and Special Microbiology		
	Course Title: Immunology	Course Code: MB3103	
Date: March 14, 2020	First Semester	Total Assessment Marks: 100	Allowed Time: 2 Hours

Q1. Complete the following sentence with the right answers (16 Marks)

1. The antigenic determinant of an antigen binds to specific part on antibody that known as.....
2. Antigens present on the bacterial capsule are known as While those on bacterial flagella are known as
3. T-lymphocytes that suppress the action of other lymphocytes after curing are
4.are certain proteins that facilitate the immune cells communication.
5. is found on the surface of B-lymphocytes and act as antigen receptor.
6.are lymphocytes that developed to fasten the immune response upon second exposure to the same antigen.
7. Similar antigens present in cells of different species' members are known as
8. The complement system is composed of proteins produced in the and functionalize at.....,,

Q2. Write true or false and correct the false ones by making only one change. (16 Marks).

1. Antigens could be described as any foreign substance introduced into the body . ()
2. Fever is considered one of the specific immune response. ()
3. Nk cells are one of natural immunity against tumor and viral cells ()
4. Leukocytes are stored in primary lymphoid organs till being stimulated by invading pathogen. ()
5. IgM are the predominant antibodies during the primary immune response. ()
6. Transferring a blood sample from B+ person to AB+ person can result in agglutination. ()
7. Influenza vaccine is one of the long lasting vaccines. ()

Look back



Q3: With full labeled diagram explain the following (40 Marks)

1. The structure of immunoglobulin monomer.
2. The steps of cell-mediated immunity.
3. An enzyme linked immunoassay for measuring unknown antiserum.
4. The different lines of identity of Ouchterlony diffusion method.

Q4: In tables compare between each of the following. (30 Marks)

1. Primary and secondary immune response.
2. Active and passive acquired immunity.
3. Direct and indirect fluorescent antibody test.

Best wishes
Dr. Perihan Saleh

	Tanta University, Faculty of Science, Department of Botany and Microbiology		
	Final Examination for (third Level) Students of Chemistry/Microbiology and Special Microbiology		
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Best wishes
Dr. Perihan Saleh

	TANTA UNIVERSITY FACULTY OF SCIENCE			
	DEPARTMENT OF BOTANY			
	EXAMINATION FOR JUNIOR (THIRD YEAR) STUDENTS OF SPECIAL MICROBIOLOGY			
COURSE TITLE:	MICROBIAL ENZYMES	ACADEMIC YEAR:	COURSE CODE:	
		2020-2021	MB3109	
DATE:	5 JANUARY, 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100 MARKS	TIME ALLOWED: 2 HOURS.

1-Answer the following questions (30 Marks).

- a- Write about Enzyme immobilization?
- b- Explain enzyme catalysis process?
- c- Illustrate the process of enzyme allosteric control?

II -Fill in the blank (20 Marks):

1. Four categories of enzyme specifies are recognized which are.....and.....
2. Activation energy is defining as.....
3. State four properties of enzymes.
4. Enzymes immobilizations techniques
5. Enzyme feedback inhibition?.....



2. Put (✓) or (X) on the front of the following sentences (20 Marks):

1. Noncompetitive inhibitors can be reversed by increasing substrate concentration.
2. Regulatory enzymes are made of several subunits at least one.
3. Enzyme control of metabolism by induction and repression, activation of performed enzymes and allosteric enzyme.
4. Lactate dehydrogenase is existing in five isoforms.
5. Lineweaver-Burk plot is a plot between the inverse of substrate and the inverse of velocity.

3. Write on each of the following (20 Marks).

- a-How enzyme decrease the activation energy of the enzymatic reaction?
- b- Enzyme mechanisms
- d- Enzyme applications

4. Compare between enzyme reversible inhibition and irreversible inhibition processes (10 Marks)

		Tanta UNIVERSITY, Faculty of Science, Department of Botany			
		EXAMINATION for freshmen (Third level) students OF Microbiology			
JRSETITLE:		Microbial Toxin and Secondary metabolite		COURSE CODE:MB3111	
DATE: 16/3/2021	JANUARY, 2021	TERM: FIRST	TOTAL ASSESSMENT MARKS: 100	TIME ALLOWED: 2 HOURS	

Answer all following questions:

First questions (25 degrees, each 5):

Write briefly on:

- 1- Stability of Ochratoxin in foods.
- 2-Effect of ergote on humans and other mammals.
- 3-Effect of Ochratoxin on health.
- 4- Occurrences of aflatoxins.
- 5- Degradation of aflatoxin by chemical treatment.

Second questions (25 degrees, each 5):

Complete the following questions:

- 1- Ergomitrin produced by -----
- 2- -----is the most significant producer of patulin.
- 3- The most important Ochratoxins in food is -----.
- 4- Orilianine toxin produce by-----
- 5- Fumonisin toxin produce by -----.

Third question (25 degrees, each 5):

Choose the correct answer of the following:



- 1-Which toxin can be the source of nephrotoxin?
 - a) Aflatoxin b) Ochratoxin c)None of these
- 2-Patulin is a toxic fungal metabolite produce by :
 - a) *Penicillium* b) *Aspergillus* c) *Byssochlamys*
 - d) All of these
- 3-Which of the following microorganisms produces Muscarine?
 - a) *Aspergillus* b)*Penicillium* c) *Clitocybe dealbata*
 - d) both a and b.
- 4- Citrinin is a mycotoxin originally isolated from
 - a)*Penicillium citrinum* b) *Aspergillus niveus*
 - c) both a and b.
- 5- Molecular formula of Aflatoxin B₂ is
 - a)C₁₇H₁₂O₆ b)C₁₇H₁₄O₆ c)C₁₇H₁₂O₇

Fourth question (25 degrees):

Write on the following toxins

- 1- Trichothecenes
- 2- Muscarine
- 3- Amantins
- 4- Ergomtrin

With my best Wishes
Examiner: Prof.Dr. Saida M. Amer

	Tanta UNIVERSITY, Faculty of Science, Department of Botany		
	Final Examination for (Third Year) Students of Microbiology		
	Course Title: VIROLOGY	Course Code: MB3101	
Date: March 25, 2021	First Semester	Total Assessment Marks: 100	Allowed Time: 2 Hours

- I. Complete each of the following: (32 Marks, 2 for each space)
1. An area of lysis in a layer of cells, usually initiated by a single virion infecting a cell, followed by the spread of infection to surrounding cells is a
 2. Latent infection isand present inphages.
 3. is an enzyme that can synthesize DNA using an RNA template.
 4. Genome size in M13 phage iskbp
 5. A particular virus' genetic material first needs to be copied into positive sense SS-RNA (Single Strand RNA) is.....
 6. Glycosylation and methylation of DNA bases in viruses are critical to viral function because.....
 7.is the formation of progeny virions containing mixtures of genome segments from the two parental strains.
 8. PIII protein of M13 phage is a structural protein and is required for; ab.....
 9. Animal viruses can be cultivated in; a.....b.....c.....d.....
 10. Nomenclature of plant viruses is depending on; a.....b.....
- II. With representative drawing write on the replication cycle of *M13 phage*. (20 Marks)
- III. Give the scientific terms for the following definitions: (12 Marks, 2 for each one)
1. A type of symmetry present in viruses where the capsid is constructed from protein molecules could be arranged to form 20 triangular faces.
 2. A layer of cells growing on the surface of a plastic or glass vessel; It is used for viral cultivation.
 3. A nucleic acid strand that has the nucleotide sequence complementary to that of the mRNA.
 4. A virus protein that is not a component of the virion but has one or more roles in the replication cycle.
 5. A group of viruses carry out reverse transcription.
 6. Purification method involves centrifuging virions in a sucrose solution of increasing concentration.
- IV. Writ on the following: (36 Marks)
1. How animal viruses attach to and enter their host cells. (7 Marks)
 2. How virus genes are transcribed and translated. (5 Marks)
 3. Mechanisms used by viruses to exit from cells. (6 Marks)
 4. Write briefly on virus classification and nomenclature. (5 Marks)
 5. Illustrate with ONLY labeled diagram, virulent and temperate phages. (5 Marks)
 6. Purification of viruses using density gradient centrifugation (equilibrium). (8 Marks)

All My Best Wishes
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