



University of Technology
Department of Applied Sciences
Final Examination 2015/2016



Subject: Microbiology
Branch: Biotechnology
Examiner: Ass.prof.Dr.Majid S. Jabir

Class: Second year
Time: 3 hours
Date: 15.06.16

Q1: Match between column A and column B. ^{12.5}~~15~~ mark

A

- 1- Solid medium
- 2- Acidophilic
- 3- Biochemical test
- 4- Gram negative cell wall
- 5- Zeil-Neelsen staining
- 6- A nutritional mutant
- 7- Polyhedral
- 8- Coagulates proteins disrupts cell membrane
- 9- Obligate anaerobic bacteria
- 10- Fractional sterilization
- 11- Bacteriophages
- 12- Conjugation
- 13- Base pairs
- 14- Hydrolase
- 15- Pyrodictum

B

- A- Hyperthermophile
- B- Glucose-6-phosphate
- C- Frameshift mutation
- D- F factor
- E- Transduction
- F- Tyndalization
- G- *Clostridium*
- H- Phenol
- I- Adenovirus
- J- Auxotroph
- K- Robert Kock
- L- Lipopolysaccharide
- M- Lactose fermentation
- N- *Sulfolobus*
- O- Edward Jenner

Q2: Mention the following (Answer ^{12.5}~~2~~ Only). ^{12.5}~~15~~ mark

- 1- Properties of antiseptic or disinfectant.
- 2- Koch's postulates.
- 3- Viral replications steps.
- 4- Methods of microorganism's classification.

Q3: Compare between the followings (Answer 2 only). ^{12.5}~~15~~ marks

- 1- Barophilic and Halophilic microorganisms.
- 2- Gram's positive and Gram's negative microorganisms.
- 3- Isomerise and Oxidoreductase enzymes.

ارسل
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12.5

Q4: Choose the best answer. (Answer only 10) ~~15~~ mark.

1-Protect the cell and assists in attaching the cells.

A- Pilus B- Capsule and slime layer C- Flagellum

2-Is the period during which cell death becomes substantial.

A- Stationary phase B- Decline phase C-Log phase

3-Mesophilic mo. has growth optimum around.

A- 0-7°C B- 20-40°C C- 55-65°C

4-Theory of spontaneous generation was disapproved by.

A-Robert Koch B- Louis Pasteur C- Edward Jenner

6-Lipid bilayer containing viral glycoprotein.

A- Capsid B- Envelope C- Nucleocapsid

7-Protects the bacterial cell and gives the shape is.

A- Outer membrane B- Cell wall C- Cell membrane

8-Most bacteria reproduce by.

A- Mitosis B- Binary fission C- Meiosis

9-The process of destroying pathogens is called.

A- Disinfectant B- Disinfection C- Disinfected

10-This machine draws air out of sterilizing.

A- Autoclave B- Prevacum autoclave C- HEPA filter

11-A protein component of an enzyme is called.

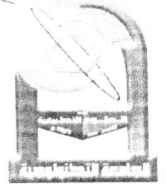
A- Holoenzyme B- Apoenzyme C- Cofactor

12-Where the RNA polymerase and the newly formed are mRNA released.

A- Transcription B- Terminator site C- Promoter site



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13-Small segments of DNA that can move from one region of chromosome to another.

- A- Cosmid B- Transposons C- Plasmid

14-Viruse particle is.

- A- Capsid B- Virion C- Nucleocapsid

15-Both partners take advantage of the relationship is called.

- A- Commensalism B- mutualism C- Symbiosis

Q5: Enumerate the following (Answer only 2) ^{12.5}~~15~~ mark.

- 1- Mechanisms by which chemical materials controls microbial growth.
- 2- Steps of bacterial DNA replication.
- 3- Types of immunity.

NOTE ANSWER ONLY 4 QUESTIONS

GOOD LUCK

University of Technology
Department of Applied Sciences
Final Examination 2015/2016



Subject: Biochemistry
Branch: Biotechnology
Ass.Prof. Maysoon M.N.M.S

Class 2nd
Time: 3 hours
Date -2016

(Note: Answer only four question)

Q1) A) Draw the Haworth structural formula for each of the following and circle the anomeric carbon.
1) α -D-Glucose 2) β -D-Fructose

B) What is the importance of amino acid sequence? Explain

C) What are the differences between the structure of glycerophospholipid and sphingophospholipid?

Q2) A) Draw scheme explain the conversion of ATP to ADP or AMP with the release of energy

B) What are the differences between Hexokinase & glucokinase (only 2).

C) Explain glycerol catabolism by equation only.

D) What is the classification of protein according to their composition? (Chose only 3 of Q2)

Q3) A) Give e.g. for each of the following:

- | | | |
|-------------------------|-------------------------|---------------------------------|
| 1. Globular protein | 2) Aromatic amino acid. | 3) Sulfur containing amino acid |
| 4) Essential amino acid | 5) saturated fatty acid | 6) Glycoprotein |

B) Draw the structural formula of 4 of the following compounds:

- | | | |
|------------------|----------------------------|-------------------|
| 1- Glutamic acid | 2- N-Acetylneuraminic acid | 2- Cephalin |
| 4- NAD | 5- coenzyme A, | 6- Nicotinic acid |

C) Write the structure formula of only one: 1) H-Ala-Ser-Gly-OH , 2) H- Ala-Cys-Val-OH

Q4) A) Draw the scheme represent the pathway of fatty acid oxidation (β Oxidation)

B) Write short note on competitive inhibition

C) Write two causes for deficiency of: 1-vitamin B1 2- -vitamin B3 3-Vitamin C 4.B2

Q5) A) Enumerate only the factors which affect the rate of enzymes activity.

B) What is the physiological role of vitamin B6? (only 2) and write one of the structure of active form of this vitamin.

C) What are the attractive forces between the amino acid which are responsible for tertiary structure of protein?

D) Draw the scheme explain the pathway of glycolysis under aerobic condition

(Chose only 3 of Q.5)

GOOD LUCK



University of Technology
Department of Applied Sciences
Final - Examination 2015/2016
Under graduate Studies



Subject: histology and microscopical preparations
Branch: Biotechnology
Examiner: Dr. L. Saba A. Mahdy

Class: second class
Time: 3 hours
Date:

Answer Four Question Only

Q1 Define the Following:

(25 Degree)

Passage, Squashing , Progressive Staining, Hanging Drop, Auxochrome.

Q2white on the following:

(25 Degree)

1. Washing of specimen
2. Features of transformed cell line.
3. The chemical effects of stains on tissue samples.
4. What are the most important conditions to be observed in tissue culture .
5. The ways used to test the purity of cell line in tissue culture.

Q3 Numerate the Following:

(25Degree)

1. Techniques of non sectioning methods.
2. The type of fixation.
3. The application of animal tissue culture.
4. The dehydration steps.
5. The cell types which used in cell tissue culture.

Q4 What are the most important conditions to be observed in tissue culture?

(25Degree)

Q5 Advantage and disadvantage of embedding with paraffin.
(25Degree)

All the best



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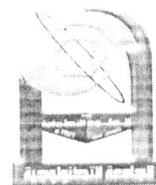
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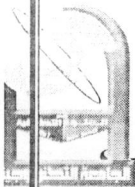
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- 2- Steps of bacterial DNA replication.
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NOTE ANSWER ONLY 4 QUESTIONS

GOOD LUCK



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Subject: Biochemistry

Branch: Biotechnology

Ass.Prof. Maysoon M.N.M.S

Class 2nd

Time: 3 hours

Date -2016

(Note: Answer only four question)

Q1) A) State to what systematic group the enzymes belong

1. Lactate dehydrogenase 2. Hexokinase, 3. Aldolase, 4. Choline acyltransferase,
5. Urease

B) Draw the structure of tripeptide and circle the peptide bond : H-Ala- phe-Ser -OH

C) Give e.g. with drawing structure For: a. Non protein amino acid b) N-glycoside

Q2) A) Write only one physiological roles of the following:

- 1-Biotin 2-vitamin B1 3-Pantothenic acid 4-Para amino benzoic acid

B) Draw diagram explain mitochondrial electron transport chain & the coenzymes..

C) By Equation explain the formation of acyl coenzyme A (activation of fatty acid)

Q3) A) Write the step of biosynthesis of cholesterol in the body.

B) Write the structure for both α & β methyl glycoside of D- glucose.

C) Write two functions of glutathione, and draw the amino acid sequence of glutathione

Q4) A) Draw the structure of four of the followings: 1. Amino sugar amide 2. Lactose 3. Niacin
4) Lecithin 5) Glycerol 3- phosphate

B) What are the attractive forces between the amino acid which are responsible for tertiary structure of protein?

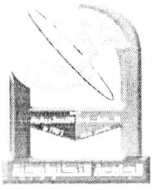
C) Draw the scheme explain the pathway of citric acid cycle

Q5) A) Enumerate only the type of heteropolysaccharides.

B) Describe the steps involved in the extra mitochondrial biosynthesis of fatty acid.

C) What is the difference between fibrous and globular protein? Only two

GOOD LUCK



University of Technology
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Subject : Genetics

Branch : biotechnology

Examiner : Assist. prof. Wasnaa H. Mohammed

Class : 2nd year

Time : 3 hours

Date : / /2016

Note: answer 4 questions only (12.5 mark for each)

Q1: fill the following blanks

- 1- Celiac disease is produced by _____ , which is _____ derived from _____ .
- 2- _____ that regulate the death of cells.
- 3- _____ a mutation that cause no change in the produced protein.
- 4- _____ is a very large complex of RNA and protein molecules.
- 5- The DNA strand that contain a gene is called _____ , while the complementary strand is the _____ .
- 6- _____ states that DNA makes RNA makes proteins.
- 7- The partially unwound strands form a _____ , with one _____ on either end.
- 8- _____ are storage units of genes.

Q2: How to prove that eye color in drosophila is located on the X chromosome?

Q3: A- What are the transcription steps?

B- Draw DNA recombination process.

Q4: A- Why the baby sound like a kitten if he have cri du chat syndrome?

B- What are the types of aneuploidy?

Q5: A plant with white flower and smooth seeds was fertilized with two plants one of them white flower and rough seed and the other have red flower and smooth seed. All the filial for the two fertilization white flower and smooth seed, and when some of the filial fertilized with another plant have red flower and rough seed 1/4 of the filial red flower and rough seed. What are the dominant and recessive features and what is the genotypes and phenotypes for the parents and the filials?

Good luck

د. هادي هادي
2016



University of Technology
Department of Applied Sciences
Final Examination 2015/2016



Subject: visual basic programming
Branch: Biotechnology , Laser Physics
Examiner: Ass. Prof. Vian A.M.

Class: 2nd year
Time: 3 hours
Date :

Note : Answer five questions only

Q1/ A-Enter a text in label1 such that this text copied to label2 after click on command button "copy"& delete from label2 after click on command button "delete".

B-Write a program to display (welcome) such that when we click on command button "start" the color of (welcome) changed randomly every second. (10 m)

Q2/Write a program to print multipliers of 7 from 7 to 67 .Using do while first then for...next loop secondly. (10 m)

Q3/Write a program to enter two numbers and compute multiplication & division operations using option button with display the phrase(illegal division operation)when the denominator is zero.(10 m)

Q4/A-Write a program to print the days of the week when we enter its number.

B-Which of the following statement correct:- (10 m)

1-To enter more than one line on text box: a-font b-shape c-multiline

2- Used to control object movement:- a-frame b-timer c-pointer

Q5/A-What is the basic parts in visual basic code.

B-Write a program to compute the functions: absolute value , Sine. (10 m)

Q6/A-Write the code for each item:

1-In event click ,the name of any shape appears on a suitable message box.

2-In event load ,enter value of x using input box.

B-What is the difference between:

1-Ucase,Lcase (give an example) 2-Show,Hide (10 m)