



University of Technology
Department of Applied Sciences
Final Examination 2016/2017



Subject : Genetics

Branch : biotechnology

Examiner : Assist. prof. Wasnaa H. Mohammed

Class : 2nd year

Time : 3 hours

Date : / /2017

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

Q1: fill the following blanks

- 1- DNA replication process consists of _____, _____ and _____.
- 2- Celiac disease is produced by _____, which is _____ derived from _____.
- 3- DNA molecules recombine by _____ breaking and rejoining.
- 4- _____ is a very large complex of RNA and protein molecules.
- 5- Each chromosome has a constriction point called the _____.
- 6- The DNA strand that contain a gene is called _____, while the complementary strand is the _____.
- 7- Under the microscope, a crossover has the appearance of an X and is called _____.

Q2: A- What are the differences between mitosis and meiosis?

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

Q3: Explain the mechanisms of how cancer develops inside the body? With draw

Q4: How to prove that eye color in drosophila is located on the X chromosome?

Q5 A mating between guinea pig male (black color and rough hair) and female (white color and smooth hair), the filial of pigs all of them black color and rough hair. What are the genotypes and phenotypes results of reciprocal cross for the new filial?

Good luck

Handwritten signature and date: 2017



University of Technology
Department of Applied Sciences
Final Examination 2016/2017



Subject: Environmental Biotechnology

Class: 2nd year

Branch: biotechnology

Examiner: Assist. Prof. Dr. Amal Ali Hussein

Time: 3 hours

Date: 1/6 /2017

Note: Answer on FOUR questions. (each question 25 marks).

Q1: A. What are the aims of Environmental biotechnology?

B. Define the Ecosystem, and state there components?

Q2: A. What are the goals of the activated sludge system?

B. What are the fundamentals of cleanup reactions of bioremediation?

Q3: Choose the correct answer:

1- Examples of point sources of water pollution include

a. runoff from farm fields b. runoff from parking lots. c. a sewage outfall from a city sewer plant.

2- When phosphate-containing wastes from detergents and fertilizers reach our waterways, water plants grow excessively extracting oxygen from the water causing fish to suffocate. This process is called:

a. phosphatisation b. sewage recycling c. eutrophication.

3- The branch of science that deals with the study of interaction between living organisms and their environment is called

A. ecosystem B. ecology C. ecophysiology D. phytogeography

4- What is the original source of almost all the energy in most ecosystems?

a. Water b. Carbon c. Sunlight d. Carbohydrates

5- Food levels in an ecosystem are called

A. producer level B. consumer level C. pyramid D. trophic level

Q4: Answer these questions:

1- State the growth curve phases of bacteria.

2- Define BOD.

3- What are the sources of soil pollution?

4- What are the differences between in situ and ex situ bioremediation?

5- What are the techniques used in biological treatment?

Q5: In pond the producers consumed sun energy total amount of 12000 Kcal/m²/day. Calculate the energy which the third and fourth consumer benefits.

Good Luck



University of Technology
Department of Applied Sciences
Final Examination 2016/2017



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

Class: Second year
Time: 3 hours
Date: 04.06.17

Q1: Fill in the blanks:

- 1-Is the period during which cell death becomes substantial.
- 2- Small segments of DNA that can move from one region of chromosome to another.
- 3- A protein component of an enzyme is called
- 4- The process of destroying pathogens is called
- 5- Sterilization is

Q2: A- Compare between the followings (Answer only 2)

- 1- Bacteriocidal and Bacteriostatic.
- 2- Bacterial growth phases.
- 3- Gram's positive and Gram's negative bacterial cell wall.

B- Who is disproved the theory of spontaneous generation and How?

Q3: About viruses answer the followings

- 1- Enumerate the main properties.
- 2- Enumerate classification methods.
- 3- Explain virus's structure and shapes with examples.
- 4- Mention viral replication steps.

Q4: Enumerate the followings:

- 1- Properties of antiseptic or disinfectant.
- 2- Types of Immunity.
- 3- Mechanisms by which chemical materials controls microbial growth.
- 4- Koch's postulates.

Q5: Answer A or B

- A- Enumerate the main bacterial structures with their function.
- B- Physical factors which play important role in microbial growth.

Q6: Match between column A and column B

A

B

- | | |
|--|----------------------------|
| 1- Usually a results of the deletion of a base pair. | a- Conjugation in bacteria |
| 2- Formation of mRNA from the genetic information
Contained in DNA. | b- Transcription |
| 3- Requires a sex pilus. | c- Frameshift mutation |
| 4- The original genetic information in a bacterial cell. | d-DNA |

* هذه الأسئلة هي أسئلة فقط