Damietta University
Faculty Of Science
Zoology Department

FINAL TERM EXAM.
Jan 2023

جامعة دمياط
Damietta University

المستوي الرابع/بيولوجيا جزيئية
تقنية حيوية بينية

Date: 18/ 1/2023 **Time: 1 Hours** **Mark: 60**

الامتحان في 3 صفحات

Answer the Following Questions:

Question ONE: **(18 marks)**

A- Put ✓ or × and correct the false **(10 marks)**

1) Bio remediation does not rely on the natural abilities of soil micro-organisms.
2) Organic pollutants are persistent and can not be degraded in the environment by natural processes.
3) the food transform is a traditional biotechnology.
4) The cell fusion technology is a traditional biotechnology .
5) In all parts of the atmosphere the air composition is stable.
6) Bioremediation can be effective only where environmental conditions permit microbial growth and activity.
7) Biotic factors in the natural environment depend on external factors such as temperature and humidity.
8) If the biotic potential of the population decreases, the biodiversity balance will increase.
9) Bioremediation is the process of decontaminating polluted sites through the addition of only exogenous microorganism.
10) The use of bioremediation technologies has rapidly increased over the past decade.

B- Identify the following items **(8 marks)**

1) Ecobiotechnology.
2) Microbiocenosis.
3) Biodeterioration.
4) Slurry reactors.

Question TWO: **(16 marks)**

Answer the following items:

1) Compare between biodegradation and bioremediation?
2) There are many Advantages and dis advantages of ex-situ bioremediation, discuss?
3) Land farming is an ex-situ bioremediation technique, comment?

Question THREE: **(12 marks)**

Complete the missing parts: .....

- The rate of application of new aspects of biotechnology will depend on.....(1).....
- The three main layers of biosphere are .....(2).....
- Biotopes are divided into .....(3).....

8- According to the classical concepts, a gene is a unit of
a) physiological functions
b) transmission or segregation of characters
c) mutation
d) all the pervious may be true

9- At this stage of mechanism, molecules enter inside the microbial cells metabolic reactions produce energy (ATP):
a) Mineralization
b) Assimilation
c) Biofragmentation
d) all the pervious not true

10- To treat a soil contaminant, the environment and the microorganisms in it are left undisturbed. What is the best description of this process?
a) Natural attenuation
b) Biostimulation
c) Bioaugmentation
d) Ex-situ bioremediation

11- Which one is NOT used for bio-remediation?
a) Bacteria
b) Fungi
c) Plants
d) seashells

12- To treat a soil contaminant, the soil is removed from the site and water, oxygen, and nitrogen fertilizer are added to support bioremediation. What is the best description of this process?
a) Ex-situ bioremediation
b) In-situ bioremediation
c) Natural attenuation
d) Not bioremediation

13- This cleanup approach includes removal of groundwater or soil from its natural setting to permit for bioremediation?
a) Bioaugmentation
b) In-situ bioremediation
c) ex situ bioremediation
d) Phytoremediation

14- The bioremediation process involving the usage of plants to degrade pollutants is?
a) Composting
b) Biopile
c) Phytoremediation
d) Land farming

With Best Wishes

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