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(Mid-Term -1 Exam, CE – 261

Examiner : Mohammed Imran

Environmental Microbiology

Date: 17/10/2019, Time : 50 minutes

Instructions: Answer all questions

Total Marks-15

Qn. No.1 (a) Read the statement below and writes down the TRUE/FALSE in the space.

Each question carries equal mark- (2.5 Marks)

- (i) Eukaryotes like fungi and protozoa have the highest cell surface to volume ratio as compared to prokaryotes. (.....X.....) (Microbes)
- (ii) biochemical and biological effect. (.....√.....)
- (iii) (iii) Prions are protein molecules. (.....√.....)
- (iv) (iv) Photosynthesis is the process where sunlight energy and CO₂ is used to synthesize biological energy. (.....√.....)
- (v) (v) Cyanobacteria are not blue green algae. (.....X.....) (photosynthetic bacteria)

Qn. No.1 (b) Multiple Choice Questions (MCQ). Each question carries equal mark- (2.5 Marks)

(i) Human cannot see microorganism without the help of microscope so what is the resolution limit of human vision.

- a. 50 μm
- b. 60 μm
- c. 70 μm
- d. 100 μm

(ii) Which of the following organelles are not found in a prokaryotic cell.

- a. Nucleus
- b. Mitochondria
- c. Endoplasmic Reticulum
- d. All of the above

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(iii) The bacteria which are able to utilize light are called-

- a. Heterotrophs
- b. Phototrophs
- c. Lithotrophs
- d. None of the above

(iv) Fermentation is the process of –

- a. Intermolecular oxidation-reduction
- b. Intramolecular oxidation-reduction
- c. Hydrolysis
- d. Pyrolysis

(v) A RNA is-

- a. Ribosomal Nano Acid
- b. R-Nucleic amino Acid
- c. Random Non-Acid
- d. RiboNucleic Acid

Qn. No. 2 (a) Fill in the blank- Each question carries equal marks- (Total- 2.5 Marks)

- (i) The no. of chromosomes in human cell are.....23.....
- (ii) The organisms which cannot be seen without the aid of microscope are called.....microorganisms.....
- (iii) The ...twenty(20).....amino acids are used in protein synthesis.
- (iv)prokaryotes..... have the highest surface to volume ratio of the cell.
- (v) The length of DNA in a prokaryotic cell is ...2m-1mm.....

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Qn. No. 2 (b) Match the following-Each question carries equal marks- (Total- 2.5 Marks)

<u>4 Yeast</u>	1-Protein
<u>5 Virus</u>	2-Prokaryotes
<u>1 Enzyme</u>	3-Eukaryotic cell
<u>2 Bacteria and Archaea</u>	4-Unicellular Fungi
<u>3 Nucleus</u>	5-Virology

Qn. No.3 (a) What is DNA? Compare genome with the book. (1)

a) DNA is Deoxy RiboNucleic Acids

b) Genome with the book

Chromosomes with the chapter

Genes with the pages

Nucleotides with the letters

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Qn. No.3 (b) Write down any 4 importance of Algae in Environmental Engineering? (2 Marks)

1-Algae remove nutrients from water. . الطحالب تزيل العناصر الغذائية من الماء .

2-used for the production of fuel using waste nutrients and light energy

يمكن استخدام الطحالب لإنتاج الوقود باستخدام نفايات المواد الغذائية و الطاقة الضوئية

3- Some algae are fast growing in polluted waters and produce toxic compounds

بعض الطحالب تنمو بسرعة في المياه الملوثة وتنتج المركبات السامة

4-Excessive growth of algae deteriorates water quality in coastal area, rivers, lakes, and reservoirs

النمو المفرط للطحالب تدهور نوعية المياه في المنطقة الساحلية والانهار والبحيرات والخزانات

Qn. No.3 (c) What is Enzyme? Write down the two major features of enzyme. Does the enzyme increase or decrease the activation energy during the reaction? (2 Marks)

Is majority protein

1-Enzyme are protein cataiysts of biochemical reaction

2-Enzyme possess high specificity they increase the rate of specific biochemical reactions

decrease

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