

Bago University
Department of Botany
Second Semester Examination, September, 2019

Fourth Year (B.Sc)
Botany Specialization
Answer All Questions

Bot.4108
Plant Biotechnology
Time allowed: (3) Hours

I. Determine whether each statement is TRUE or FALSE.

(10 marks)

1. In the cell, transcription take place inside the nucleus.
2. Bacteria can not be used directly to express many genes from mammals or eukaryotes.
3. Several expression systems have been devised for expression homologous genes in yeast.
4. Ti plasmid and the introduced fragment of DNA is called T-DNA.
5. At the DNA level, the strand that has the ATP sequence is called the coding strand.
6. Cells grow faster without plasmid, than those containing plasmid.
7. Prokaryotic expression systems are used for production of recombinant cDNA.
8. Large scale cultivation of microalgae for biofuel production must be base on temperature.
9. Sustaintial energy is required for the supply of CO₂ by means of gas transfer.
10. Supply of CO₂ is essential to achieve high productivities. .

II. Write correct word to complete the following sentences.

(10 mark)

1. In 1857, Louis Pasture high lighted the lactic acid fermentation by -----.
2. Recombinant human insulin was the first recombinant ----- in the world.
3. Green biotechnology is the application of biotechnology processes in -----.
4. New types of foodstuffs with novel properties are often called ----- food.
5. Cholesterol is exclusiyely found in animals and is most abundant animal -----.
6. Nucleotides may be considered one of the most important ----- of the cell.
7. Transfer RNA molecules are key to the ----- process of the mRNA sequence.
8. The ribosome serve as the site and carries the enzymes necessary for ----- synthesis.
9. The number of DNA molecule is same as number of ----- chromosomes in a cell.
10. Stability of plasmid is related to certain ----- in plasmid.

III. Answer all questions.

(10 marks)

1. What are the various application of biotechnology?
2. Give a concise account on green biotechnology.
3. Clarify the term monosaccharide.
4. Give the tertiary structure of protein.
5. Describe the form of DNA plasmids.

IV. Answer all questions.

(20 marks)

1. Write selected examples of recombinant proteins with indication and manufacture.
2. Describe carbohydrate classification with relevant example.
3. Tabulate the enzyme classification.
4. Lists the capacity of different cloning vectors and host organisms.

V. Answer any three questions.

(30 marks)

1. Explain the detail structure of protein.
2. Give complete account on the neutral lipids.
3. Tabulate the enzymes that use DNA as a substrate and are used in genetic engineering.
4. Explain the word one gene-one enzyme.
5. Write detail in gene cloning.