

Total No. of Printed Pages: 2

SUBJECT CODE NO: - SS-6582
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Zoology) (Sem-IV)
Examination May / June - 2023
Applied Biotechnology-II ZOO-403

[Time: 3:00 Hours]

[Max. Marks: 80]

Please check whether you have got the right question paper.

N. B

1. Part A is compulsory
2. Attempt any five questions from Part B
3. Draw neat labelled diagram whenever necessary

Part - A

20

Q.1 Multiple choice questions

- 1) Which of the following components are fermented during the bio ethanol production?

a) Acid and Starch	b) Starch and sugar
c) Acid and alcohol	d) Milk and sugar
- 2) DNA fingerprinting is used in_____

a) Population genetics	b) Genetic diversities determination
c) Forensic sciences	d) all of the above
- 3) The term Bioinformatics was coined by _____

a) Pauline Hogeweg	b) Frederic Sanger
c) J. D. Watson	d) M. Dayhoff
- 4) Renewable energy resources are mostly based on _____

a) fossil fuels	b) biomass	c) nuclear power	d) all of the above
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- 5) When was the Human Genome Project started?

a) 1993	b) 2003	c) 1990	d) 1999
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- 6) What is a genome wide association study?
 - a) A genetic association study between a disease or trait and sufficient genetic markers to capture almost all common genetic variation.
 - b) A genetic association study between all genetic variants in the genome and disease
 - c) A study that tests whether a disease or trait is heritable
 - d) A study that tests association between a disease and every gene in the genome

- 7) Which of the following is important for preparing templates for Next Generation Sequencing?
- Breaking DNA up into smaller fragments
 - Isolating DNA from tissue
 - Checking the quality and quantity of the fragment library
 - All of the above
- 8) Which of the following vectors are used in Human Genome sequencing?
- T/A cloning vectors
 - Expression vectors
 - T-DNA
 - BAC and YAC
- 9) _____ are unique kinds of primitive, immature cells that have a remarkable capacity to develop into different kinds of cells?
- Ectodermal cells
 - Stem cells
 - Epithelial cells
 - Mesenchymal cells
- 10) Which of the following terms is used to describe the dose of a drug required to kill 50% of a group of animals?
- LD₅₀
 - ED₅₀
 - 50ED
 - LD₀₅

Part – B

- Q.2** What is green technology? Explain it with its type, advantages and disadvantages 12
- Q.3** Describe the DNA fingerprinting with its principle and applications.
- Q.4** Explain the next gen sequencing (NGS) with the challenges in analysis of NGS. 12
- Q.5** Explain the system biology with its principle and application. 12
- Q.6** Describe pharmaceutical biotechnology and uses of microbes in pharmaceutical industries. 12
- Q.7** Write an essay on Whole Genome Sequencing (WGS). 12
- Q.8** Write a short note on (any 3) 12
- Bioinformatics
 - Stem cell
 - LD₅₀ and ED₅₀
 - Biodiesel