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SUBJECT CODE NO:- 6182
FACULTY OF SCIENCE AND TECHNOLOGY
M.Sc. (Sem-IV) Zoology
Examination March/April-2022 (To be held in June/July-2022)
Applied Zoology-513

[Time: 3.45 Hours]

[Max.Marks:80]

N.B Please check whether you have got the right question paper.

1. The question paper is divided into two parts.
2. Part 'A' is compulsory.
3. Attempt any five questions from Part 'B'.
4. Draw neat labeled diagram whenever necessary.

PART A

Q.1 Multiple choice questions. (Each question carries 2 marks)

20

1. Which size of the insert is accepted by the cosmids?
 - a. 10-20 kbp
 - b. 35-45 kbp
 - c. 50-60 kbp
 - d. 100-120 kbp
2. All of the following statements are correct about the active and passive immunization process, except?
 - a. Both can occur naturally as well as artificially
 - b. Active immunization is the inoculation of live, attenuated and dead pathogens
 - c. Both types of immunization may provide long-term protection to the immune system
 - d. Administration of preformed antibodies in the form of passive immunization
3. Induced pluripotent cells can be generated directly from
 - a. adult cells
 - b. cancer cells
 - c. endometrial cells
 - d. epithelial cells
4. _____ is a type of graft surgery involving the transplantation of skin.
 - a. Skin grafting
 - b. Regeneration
 - c. Endodermal replacement
 - d. Mucosal layer
5. The first transgenic plants expressing engineered foreign genes were tobacco plants produced

by the use of

- | | |
|--------------------------------------|-------------------------------------|
| a. <i>Bacillus thuringiensis</i> | b. <i>Arabidopsis thaliana</i> |
| c. <i>Streptomyces hygroscopicus</i> | d. <i>Agrobacterium tumefaciens</i> |
6. Animals that have had their DNA manipulated to possess and express an extra (foreign) gene are known as
- | | |
|-----------------------|---------------|
| a. transgenic animals | b. animals |
| c. infected animals | d. Bt animals |
7. Bioaugmentation involves
- | | |
|---|------------------------------------|
| a. eliminating sludge | b. plants usage for bioremediation |
| c. addition of microbes to a cleanup site | d. bioventing |
8. Which of the following is a suitable host for the process of cloning in the Human Genome Project (HGP)?
- | | |
|-------------|-----------------------|
| a. Virus | b. All types of fungi |
| c. Bacteria | d. Protozoan |
9. A process using microbes to convert toxic industrial wastes to less toxic or non-toxic compounds is
- | | |
|------------------|------------------------|
| a. Precipitation | b. Complement fixation |
| c. Bioconversion | d. Bioremediation |
10. Proteomics refers to the study of _____.
- | |
|---|
| a. Set of proteins in a specific region of the cell |
| b. The entire set of expressed proteins in the cell |
| c. Set of proteins |
| d. Biomolecules |

PART B

- Q.2 Describe the principle of tissue engineering with examples. 12
- Q.3 What is cloning? Describe the method of mammalian cloning. 12
- Q.4 Define gene therapy? Explain its applications. 12
- Q.5 What is bioremediation? Explain its importance with a suitable example, 12
- Q.6 What are stem cells? Explain its sources & types. Mention its applications. 12
- Q.7 Write an essay on biodiversity and food security. 12
- Q.8 Short notes (Any two) 12
- a) Biosensors
 - b) Proteomics
 - c) GIFT
 - d) Transgenic plants