A-0114

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MZO–603

M.Sc. ZOOLOGY (MSCZO)

(Animal Biotechnology)

3rd Semester Examination, Session December 2024

Time : 2:00 Hrs. Max. Marks : 35

Note* :–** This paper is of Thirty Five (35) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. ***Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.

Section–A

Long Answer Type Questions 2×9½=19

***Note* :–** Section 'A' contains Five (05) Long-answer type questions of Nine and Half (9½) marks each. Learners are required to answer any *two* (02) questions only.

1. Explain the scope of biotechnology in modern medicine. How has biotechnology contributed to developing diagnostic tools, therapeutic drugs, and vaccines ?

2. Explain the components and types of culture media used in tissue and cell culture. What is the importance of selecting the appropriate media for different cell types, and how are media sterilized ?

3. What are stem cells, and how are they classified ? Discuss the differences between different types of stem cells.

4. What is cell synchronisation, and why is it essential in tissue culture ? Discuss the methods used to synchronize cell populations for cell cycle analysis.

5. Describe the difference between liquid and semi-solid culture media. When is each type of media used in cell culture, and what are its benefits ?

Section–B

Short Answer Type Questions 4×4=16

***Note* :–** Section 'B' contains Eight (08) Short-answer type questions of Four (04) marks each. Learners are required to answer any *four* (04) questions only.

1. Explain the role of genetic engineering in agriculture.

2. What ethical issues are associated with biotechnology ?

3. What is the difference between primary culture and cell line culture ?

4. What is the function of antibiotics in culture media ?

5. How are stem cells used in regenerative medicine ?

6. What is the purpose of cryopreservation in tissue culture ?

7. What is the role of tumour suppressor genes in regulating cell growth ?

8. What are the main steps involved in the IVF process ?

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