

[Time: 2½ Hours]

[ Marks:75]

Please check whether you have got the right question paper.

- N.B:
1. Attempt **all** questions.
  2. **All questions** carry **equal** marks.
  3. Draw **neat labelled diagrams** wherever necessary.

Q.1 Do as directed:(any fifteen)

15

1. Name any one macronutrient present in plant tissue culture media.
2. Name any one solidifying agent used in plant tissue culture media.
3. How are metal instruments to be used in plant tissue culture sterilized?
4. Define the term 'totipotency'.
5. State the role of activated charcoal in plant tissue culture media.
6. What is meant by rhizogenesis?
7. Give the optimum pH for plant tissue culture media.
8. State true or false: - Temperature and humidity are maintained in culture room of plant tissue culture laboratory.
9. Explain the term: explant.
10. Explain the term: *in vivo*.
11. Name any one animal cell line.
12. What is cryopreservation?
13. State true or false:-MS medium is a common animal tissue culture medium.
14. Name the pH indicator used commonly in animal tissue culture media.
15. Name any one barrier of communication.
16. State true or false:- signature is verbal communication.
17. State true or false:- Microsoft word is used to write a report of the research paper.
18. State true or False:- Bibliography focuses on the materials and methods used in the experimental work.
19. State true or false:- Sign and symbols are mode of non-verbal communication.
20. \_\_\_\_\_ is referred as the medium through which the information passes (channel, feedback, receiver)

Q.2 a. What is callus? Elaborate on protocol for callus culture.

08

b. Explain in detail, the design of plant tissue culture laboratory.

07

OR

c. Explain the role of phytohormones in plant tissue culture media.

08

d. Justify: Micronutrients and vitamins play a crucial role in plant tissue culture media.

07

TURN OVER



- Q.3 a. Explain the use of CO<sub>2</sub> incubator and inverted microscope in animal tissue culture laboratory. 08
- b. Discuss the applications of animal tissue culture. 07

OR

- c. Discuss the growth kinetics of an animal cell line with a suitable diagram. 08
- d. Discuss the physiological and nutritional requirements of an animal cell line. 07

- Q.4 a. Discuss the various elements of the communication process. 08
- b. Explain with examples verbal communication. 07

OR

- c. Read the following abstract and answer the following questions: 08

**Abstract:** The objective of this study was to observe the inhibitory effect of garlic (*Ailium sativum*) against various bacterial strains. The aqueous extract of garlic was tested against *Escherichia coli*, *Staphylococcus aureus* and *Salmonella typhi*. In results, we found that in the agar cup diffusion method, the aqueous extract gave the same inhibition zone towards *E. coli* and *S. typhi*, but no inhibition zone was observed for *S. aureus*. Overall result shows that the aqueous extract was most powerful against the pathogenic gram negative bacteria. This result gives us a confidence that conventional medicinal approach can be used for treating several ailments.

- I. Give a suitable title to the research work.
  - II. Which plant extract and micro-organisms were used in the current research work?
  - III. What method was employed for the study and what was the result of the study?
  - IV. Give four key words for the research work based on the abstract.
- d. Explain plagiarism with any two examples. 07

- Q.5 Write short notes on any three of the following: 15
- a. Cell theory
  - b. Laminar air flow
  - c. Primary animal cell culture
  - d. Scope of communication
  - e. Non-verbal communication