

(6 pages)

Reg. No. :

Code No. : 6417

Sub. Code : HBOM 43

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2016.

Fourth Semester

Botany

APPLIED BIOTECHNOLOGY

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. The most common solidifying agent used in micropropagation is
 - (a) Starch
 - (b) Dextrin
 - (c) Agar
 - (d) Mannan
2. The process of extracting metals from ore bearing rocks is called as
 - (a) Bioextraction
 - (b) Microbial extraction
 - (c) Biofiltration
 - (d) Bioleaching

3. The Coliform bacteria in water is an indication of the presence of
 - (a) Radioactive wastes
 - (b) Excess fertilizer
 - (c) Decaying animals and plants
 - (d) Human feces
4. The culturing of cells in liquid agitated medium is called
 - (a) Liquid culture
 - (b) Micropropagation
 - (c) Agar culture
 - (d) Suspension culture
5. During which phase of growth of *Penicillium chrysogenum* maximum antibiotic production takes place
 - (a) Lag phase
 - (b) Log phase
 - (c) Exponential phase
 - (d) Same in all the phase
6. The pigment chlorophyll is associated with
 - (a) Thylakoids
 - (b) Stroma
 - (c) Cristae
 - (d) Matrix

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7. Which of the following is not the physical method for the cells rupturing?
- (a) Milling
 - (b) Homogenization
 - (c) Ultrasonication
 - (d) Enzymatic digestion
8. The diagnostic enzyme for denitrification is
- (a) Nitrate reductase
 - (b) Nitrate oxidase
 - (c) Nitro oxidoreductase
 - (d) Decarboxylase
9. Which type of cell actually secretes antibodies?
- (a) Plasma cells (b) T cells
 - (c) Macrophages (d) Dentric cells
10. Restriction fragment length polymorphism (RFLP) involves
- (a) used to identify a specific protein
 - (b) used to identify a specific DNA
 - (c) used to identify a specific RNA
 - (d) used to identify a specific DNA and RNA

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Explain role of algae in environmental health.

Or

- (b) Write an account on sources of algal culture and their utility.

12. (a) Give an account on methods of fermentation.

Or

- (b) Write short notes on ethanol production from fungi.

13. (a) Explain bioremediation of contaminated soils and waste land.

Or

- (b) What is biosensor? Mention its application in environmental biotechnology.

14. (a) Describe the inheritance of genetic traits of agronomically important plants.

Or

- (b) Explain qualitative and quantitative selection of traits using marker.



15. (a) Explain how nanoparticles can be synthesized through pulsed laser method.

Or

- (b) Give an account on nanomedicines and their applications.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words.

16. (a) What are the quality standard for the algal biomass produced on large scale?

Or

- (b) Write an essay on algae as an indicator of water quality and pollution assessment.

17. (a) Give a brief account on citric acid production in industry.

Or

- (b) Describe briefly about the extraction and purification methods of fungal enzymes.

18. (a) Write an essay on biological waste treatment and reuses of wastes.

Or

- (b) Explain different bioassays involved in biomonitoring.

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19. (a) Describe the role of genetic engineering in developing insect resistant crops.

Or

- (b) Write an account on genetic engineering for abiotic stress.

20. (a) Briefly describe the synthesis of nanoparticles.

Or

- (b) Discuss the various applications of monoclonal antibodies in human welfare.

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