CLASS: B.Sc. BOTANY **15A / 40**

St. JOSEPH'S COLLEGE (AUTONOMOUS) TIRUCHIRAPPALLI – 620 002

SEMESTER EXAMINATIONS – APRIL 2015

TIME: 3 Hrs. **MAXIMUM MARKS: 100**

SEM	SET	PAPER CODE	TITLE OF THE PAPER
VI	2012	11UBO630216	BIOTECHNOLOGY

SECTION – A

Answer all the questions: **20 x 1 = 20**

Choose the correct answer:

1. Name the substance added to the culture medium to induce callus induction.
   a) Auxin b) Cytokinin
   c) GA3 d) ethylene
2. Which gene is used for development of salt tolerant crops?
   a) Leagenes
   b) genes involved in proline biosynthesis
   c) Heat shock proteins
   d) all the above
3. A toxoid is a
   a) potent toxin b) heavy toxin
   c) chemical increasing toxicity d) toxin that losses its activity
4. Production of haploid plants from female egg nucleus or ovum is called as
   a) Androgenesis b) Gynogenesis
   c) microgenesis d) Embryogenesis
5. Which of the following is genetically modified?
   a) Tomato b) Rice
   c) both 'A' and 'B' d) None of these

Fill in the blanks:

6. ‘Undefined’ part of the tissue culture medium comprises _____.
7. In tissue culture, disease resistance can be obtained by _____.
8. Gene therapy that is hereditary refers to _____.
9. Insertion of ‘antifreeze glycoprotein gene into Atlantic Salmon act as _____.
10. Food obtained from transgenic crops is called _____.

State True or False:

11. Production of true – to – type plants using tissue culture protocol is termed as micro grafting.
12. Regarding the production of transgenic cassava, the production of cyanide was enhanced by over expression of an enzyme.
13. The hybridoma cells are capable of indefinite growth and continuous antibody production.
14. Production of gynogenic haploids is particularly useful in plants with male sterile genotype.
15. Bio-pesticides consists of virus, bacteria, protozoa, fungi or mites that help control disease, insect or needs.

Match the following:

16. Solidifying agents which is commonly used in Tissue culture medium is - a) Transgene
17. The transgenic animals contain as inserted gene called - b) Agar

18. Using transgenic antibody fragments to induce resistance to the herbicide picloram - c) growth hormone genes

19. The most commonly employed genes so far in fish transgenesis are - d) is a natural gift

20. Single cell protein in microbial biomass rich in high quality protein, these serve as valuable food and feed supplement - e) is not successful

SECTION – B

Answer all the questions: **5 x 4 = 20**

21. a. Explain callus induction process briefly.

OR

b. What are the types of somatic embryogenesis?

22. a. Explain the methods of protoplast fusion.

OR

b. Define herbicide and its resistance in detail.

23. a. Discuss immunotoxin with an example.

OR

b. Narrate the use of gene therapy with types.

24. a. Explain the process of Anther culture and its advantage.

OR

b. Write notes on limitations of gynogenesis.

25. a. Write an account on GM foods.

OR

b. Write a short account on patening.

SECTION – C

Answer any FOUR questions: **4 x 15 = 60**

26. Write an essay on biotechnological application of plant tissue culture in agriculture and forestry.

27. Write a brief explanation on Somoclonal variation and its application.

28. Write notes on different aspects of monoclonal antibodies and Hybridoma technology.

29. Give the role of Androgenesis and gynogenesis in the field biotechnology with limitations.

30. Write brief account on biological warfare and its control method.

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