KUMARAGURU college of technology
character is life

Register Number:……..….

M.TECH DEGREE EXAMINATIONS: JAN 2015

(Regulation 2014)

First Semester

BIOTECHNOLOGY

P14BTE103**:** Plant and Animal Biotechnology

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 1 = 10 Marks)

1. _____ are signal molecules produced within the plant, and can also occur in extremely low concentrations. [K_2]
   a) Pheromones b) Phytohormones
   c) Proteins d) Phytokines.

2. _____ is a gas that forms through the breakdown of methionine [K_1]
   a) Methane b) Ethane
   c) Ethylene d) Hydrogen

3. Virulence trait of *Agrobacterium tumefaciens* is borne on _____ [K_2]
   a) chromosomal DNA b) both chromosomal and plasmid DNA
   c) tumour inducing plasmid DNA d) cryptic plasmid DNA

4. Which of the following genes are constitutively expressed and control the plant induced activation of other vir genes? [K_2]
   a) *vir* A and *vir* G b) *vir* B and *vir* E
   c) *vir* C and *vir* D d) *vir* A and *vir* B

5. Which of the following is incorrect? [K_2]
   a) Established cell lines (ECL) have short doubling time b) ECL grow in higher density
   c) ECL are invariably aneuploid d) ECL do not show much evidence of spatial orientation

6. Which of the following is the metabolic products of glucose and glutamine? [K_2]

a) CO_2 and NH_3 b) CO_2 and lactate

c) Lactate and ammonium d) Lactate only

7. Which of the following is the process of choosing parent organisms producing for the superior offspring characteristics? [K_2]

a) Active selection b) Active selection

c) Active selection d) Active selection

8. Which one of the following is the condensed form of gene carriers? [K_1]

a) Chromosomes b) Chromatin

c) Chromatild d) DNA

9. _____ are a large and diverse class of organic compounds, produced by a variety of plants, particularly conifers. [K_1]

a) Steroids b) Sugars

c) Terpenes d) Alkaloids

10. _____ is a class of signaling molecules produced by glands in multicellular organisms that are transported by the circulatory system to target distant organs to regulate physiology and behavior. [K_2]

a) Cytokines b) Pheromones

c) Steroids d) Hormones

PART B (10 x 2 = 20 Marks)

11. Give examples for plant growth regulators. [K_1]

12. Distinguish between meristem and root culture. [K_4]

13. Justify how and why direct gene transfer techniques is better? [K_5]

14. Differentiate between binary and shuttle vector, with examples. [K_4]

15. List few culture media for animal cell cultures. [K_1]

16. Write a note on maintenance of cell lines. [K_1]

17. Distinguish between selective and cross breeding. [K_4]

18. Elaborate on ethics of animal cloning. [K_2]

19. Is it easier to isolate terpene or alkaloids? Compare and Correlate the techniques. [K_4]

20. Appraise the current techniques needed for the production of animal metabolites. [K_5]

PART C (10 x 5 = 50 Marks)

21.	Describe various physico-chemical conditions for plant cell propagation.	[K_2]
22.	With the help of appropriate examples and suitable diagrams demonstrate the preparation of protoplast culture.	[K_3]
23.	Assess the available gene transfer technique and choose the best technique to demonstrate the development of herbicide resistant crop.	[K_4]
24.	Write elaborately on viral vectors- CaMV, with suitable diagram.	[K_2]
25.	Discuss the basics of gene therapy.	[K_1]
26.	Estimate and derive the growth rate of a given cell line, based on its growth characteristics.	[K_5]
27.	Compare the various animal improvement technology and collate the salient feature of the best method according to you with proper reasoning.	[K_5]
28.	Demonstrate how an embryo can be collected and evaluated.	[K_3]
29.	Assess the economically viable and available chemical at your lab and decide the best options of isolating bioactive compound from a plant.	[K_6]
30.	Describe the production of cytokines.	[K_1]

PART D (2 x 10 = 20 Marks)

31.	Collate the data available in literature and compose a essay on molecular pharming	10	[K_6]
32.	Compare and evaluate the applications of hybridoma technology.	10	[K_5]

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