MS – 344

VI Semester B.Sc. Examination, May 2016
(Semester Scheme) (Fresh + Repeaters)
(70 Marks – 2013-14 and Onwards)
(60 Marks – Prior to 2013-14)
BIOTECHNOLOGY – VII
Plant Biotechnology

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Time : 3 Hours Max. Marks : 70/60

Instructions : *1) Draw **neat** labelled diagrams **wherever** necessary.*
*2) **70** marks for students **2013-14** batch Onwards.*
*3) **60** marks for repeaters prior to **2013-14** batch*
*4) Q. **IV**, Section – **D** is **compulsory** for students of **2013-14** batch Onwards.*

SECTION – A

I. Write short notes on the following : **(5×2=10)**

1) Surface sterilization
2) Aurotrophic mutants
3) Endosperm culture
4) Patent Co-operation Treaty
5) Subunit Vaccine.

SECTION – B

II. Write **any four** of the following : **(4×5=20)**

6) What are reporter genes ? Write a note on luciferase gene expression.
7) Write the significance of Nif-gene transfer through tissue culture.
8) What is osmosis ? What is the role of osmoticum in protoplast isolation ?
9) What is the advantage of pollen culture over anther culture ? Give 3 applications of anther and pollen culture.
10) Write a note on cytokinin. Give two examples of synthetic cytokinins.

P.T.O.

SECTION – C

III. Answer **any three** of the following : **(3×10=30)**

11) Define Somatic Embryogenesis. Explain in detail its procedure and significance.

12) What are the different ways of protecting IPR ? Write a note on Plant Breeder's Rights.

13) What is T-DNA ? Describe the construction of binary vector system.

14) What is ovary culture ? How is it done ? Write 5 applications of it.

15) Describe the mechanism of somaclonal variation. How are somaclonal variants selected ?

SECTION – D
(From 2013-14 Batch Onwards)

IV. Answer the following in **one** word or **a** sentence **each** : **(10×1=10)**

16) Select the correct answer – 'Potassium is a macronutrient in Nutrient Media'.
a) False b) True

17) Give the other name of 'Ovuls'.

18) Which explant is used for propagation of orchid plant Neoltia nidus-avis ?
a) Root b) Shoot tip c) Inflorescence

19) Which Indian scientist first reported development of embryo from microspores of Datura innoxia ?
a) Maheshwari S.C. b) Morel G. c) White P. R.

20) What are fusogens ?

21) Potato late blight is caused by _____

22) Choose the correct answer :
a) RIA is Radial Immunological Assay
b) RIA is Radio Immuno Assay.

23) What are phytoalexins ?

24) _____ gene was isolated from Aequorea Victoria a variety of jelly fish.
a) gfp b) luc c) X-gal

25) Expand TRIPS.

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VI Semester B.Sc. Examination, May 2016
(F + R) (F – 70-2013-14 and Onwards/R – 60-Prior to 2013-14)
BIOTECHNOLOGY (Paper – VIII)
Industrial Biotechnology

Time : 3 Hours Max. Marks : 70/60

Instructions : 1) *Draw diagrams* ***wherever*** *necessary.*

2) ***70*** *marks for students of* ***2013-14*** *batch Onwards.*

3) ***60*** *marks for repeaters Prior to* ***2013-14*** *batch.*

4) *Section –* ***D****, question* ***IV*** *is* ***compulsory*** *for students of* ***2013-14*** *batch Onwards.*

SECTION – A

I. Write short notes on the following : **(5×2=10)**

1) Lyophilization
2) Hops
3) SCP
4) Immobilization
5) Membrane bioreactor.

SECTION – B

II. Answer **any four** of the following : **(4×5=20)**

6) Briefly explain the process of production and recovery of penicillin.
7) Write a note on the importance of microbial enzymes in food and beverage industry.
8) Describe the industrial strain improvement by rDNA method.
9) Explain in brief the steps involved in the recovery of fermentation products.
10) Write a note on microbial polysaccharides.

P.T.O.

SECTION – C

III. Answer **any three** of the following : **(3×10=30)**

11) Give a detailed account of the importance of media component and its formulation in fermentation.

12) Explain the salient features of surface, submerged and solid state fermentation. Add a note on their advantages and limitations.

13) Write a detailed account of the production of various food additives.

14) Describe the different steps involved in the industrial production of citric acid.

15) What are fermented foods ? Explain the production of Yoghurt and Cheese.

SECTION – D

(For Students of 2013-14 batch Onwards)

IV. Answer the following in one **word** or **a sentence each** : **(10×1=10)**

16) What are steroid hormones ? Give an example.

17) What is flash pasteurization ?

18) Mention two raw materials for ethanol production.

19) What is dual fermentation ?

20) Mention one organism used in industrial production of Vit. B_{12}.

21) What is Idiophase ?

22) Which one of the following is called as the 'brewers yeast' ?

a) Saccharomyces ludwigi b) Saccharomyces cerevisiae

c) Saccharomyces boulardii d) Saccharomyes pastorianus.

23) Which of the following is used for agitation in a fermentor ?

a) Impeller b) Baffles c) Sparger d) None of these

24) Lagers are the beer in which fermentation is carried out using

a) Top yeast b) Bottom yeast c) Middle yeast d) None of these

25) The germination of barley Kernels under controlled temperature and humidity to generate enzymes for the degradation of starch and protein is known as

a) Brewing b) Malting c) Mashing d) Pitching