D 90976 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER M.A./M.Sc./M.Com. DEGREE (REGULAR) EXAMINATION NOVEMBER 2020

(CBCSS)

Botany

BOT 3C 09—BIOTECHNOLOGY AND BIOINFORMATICS

(2019 Admissions)

Time : Three Hours Maximum : 30 Weightage

Section A

Answer at least **three** *questions.*
Each question carries 2 *weightage.*
All questions can be attended.
Overall Ceiling 6.

I. Each answer not to exceed five sentences :

1 What are major components of plant tissue culture media ?

2 What are synthetic seeds? How they are produced ?

3 What is antisense RNA technology ? Give an example that evolved through this technology.

4 Define gene piracy. Add note on patenting of GMOs.

5 Give expansion of HTTP, HTML, URL and WWW.

6 What is SWISS-PROT and EMBL ?

7 Define DNA microarrays. Write major applications.

(3 × 2 = 6 weightage)

Section B

Answer at least **three** *questions.*
Each question carries 4 *weightage.*
All questions can be attended.
Overall Ceiling 12.

II. Each answer not exceed 250 words:

8 Define bioreactor. Give an account on different types of bioreactors used in plant cell culture.

9 Prepare a flow chart showing step by step procedure in anther culture

10 Illustrate enzymatic method of DNA sequencing.

Turn over

11 Outline the creation of transgenic animals. Add a note on ethics of cloning.

12 What are terminator and traitor technologies ?

13 Give an account on free software foundation and their major contributions.

14 What are secondary databases ? Elaborate on different types of secondary databases.

(3 × 4 = 12 weightage)

Section C

Answer at least **two** *questions.*
Each question carries 6 *weightage.*
All questions can be attended.
Overall Ceiling 12.

III. Each answer not to exceed 500 words :

15 Give an elaborate account on applications of plant tissue culture.

16 Discuss steps involved in gene cloning.

17 Describe major achievements of genetic engineering by citing suitable examples you have been studied.

18 What are nucleic acid databases ? Discuss features of different nucleic acid databases

(2 × 6 = 12 weightage)

D 90975 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER M.A./M.Sc./M.Com. DEGREE (REGULAR) EXAMINATION NOVEMBER 2020

(CBCSS)

Botany

BOT 3C 08—ANGIOSPERM MORPHOLOGY, ANGIOSPERM TAXONOMY AND PLANT RESOURCES

(2019 Admissions)

Time : Three Hours Maximum : 30 Weightage

Section A

Answer at least **three** *questions.*
Each question carries 2 *weightage.*
All questions can be attended.
Overall Ceiling 6.

1. What is cladogram ?
2. Distinguish between syntype and lectotype.
3. List out the top two botanical gardens in the world.
4. Write down the significance of TROPICOS.
5. Name any two national herbaria.
6. Correct the botanical name given below if any mistake.

   V. Trifolia Var simplicifolia Cham.
7. Describe any two situations for rejection of plant names.

(3 × 2 = 6 weightage)

Section B

Answer at least **three** *questions.*
Each question carries 4 *weightage.*
All questions can be attended.
Overall Ceiling 12.

8. Write a note on NBRI.
9. Briefly describe the types of placentation and their evolution.
10. Distinguish between binomial and polynomial nomenclature.

Turn over

11. Give a brief account on International code of nomenclature of cultivated plants.
12. What do you mean by biosystematics ? What is its significance ?
13. Describe the functions of BSI.
14. What are the advantages of phylogenetic system of classification over the natural system ?

(3 × 4 = 12 weightage)

Section C

Answer at least **two** *questions.*
Each question carries 6 *weightage.*
All questions can be attended.
Overall Ceiling 12.

15. Describe the techniques involved in Herbarium preparation.
16. Explain the significance of molecular data in Taxonomy.
17. Briefly explain the origin and evolution of structure and morphology of Stamens in Angiosperm.
18. Briefly describe the significance of APG system in comparison with the natural system of classification.

(2 × 6 = 12 weightage)

D 90974 (Pages : 2) Name.....

Reg. No.....

THIRD SEMESTER M.A./M.Sc./M.Com. DEGREE (REGULAR) EXAMINATION, NOVEMBER 2020

(CBCSS)

Botany

BOT 3C 07—PLANT PHYSIOLOGY, METABOLISM AND BIOCHEMISTRY

(2019 Admissions)

Time : Three Hours Maximum : 30 Weightage

Section A

Answer at least **three** *questions.*
Each question carries 2 *weightage.*
All questions can be attended.
Overall Ceiling 6.

1. Differentiate reductive and trans amination process, cite suitable examples.
2. What are cryptochromes ? Give an account on functional features.
3. What are isoenzymes ? Add a note on its evolutionary significance.
4. Give an account on structural features of ATP synthase enzyme.
5. How amino acids are classified based on polarity ?
6. Enlist sugar derivatives of biological importance.
7. What is meant by 'soil-plant atmosphere continuum'.

(3 × 2 = 6 weightage)

Section B

Answer at least **three** *questions.*
Each question carries 4 *weightage.*
All questions can be attended.
Overall Ceiling 12.

8. Explain modern theories of stomatal mechanism.
9. Illustrate CAM and its significance.

Turn over

10. List important physiological functions of auxins.

11. Give an account on physiological effects of water stress.

12. Explain Michaelis-Menten equation and its significance.

13. Explain TCA cycle and its amphibolic nature.

14. What are important classes of lipids ? Explain with suitable examples.

(3 × 4 = 12 weightage)

Section C

Answer at least **two** *questions.*
Each question carries 6 *weightage.*
All questions can be attended.
Overall Ceiling 12.

15. Give an elaborate account on genetic and hormonal regulation of development.

16. Compare C3 and C4 mode of carbon fixation.

17. Explain oxidative phosphorylation. Add a note on most accepted theory to explain mechanism of ATP synthesis.

18. Describe structural features of protein.

(2 × 6 = 12 weightage)