

K19U 0078

Reg. No. :

Name :

VI Semester B.Sc. Degree (CBCSS-Reg./Supple./Improv.) Examination, April 2019
(2014 Admission Onwards)

CORE COURSE IN BIOTECHNOLOGY

6B13BTC : Genetic Engineering

Time : 3 Hours

Max. Marks : 40

SECTION – A

Write about **each** of the following in **2 or 3** sentences. **Each** question carries **1** mark. (6×1=6)

1. Role of EDTA in preparation of cell extract for DNA isolation.
2. What do you mean by star activity of restriction enzymes ?
3. What is the purpose of c DNA library ?
4. Advantage of multiplex PCR.
5. RFLP.
6. What is gene activation ?

SECTION – B

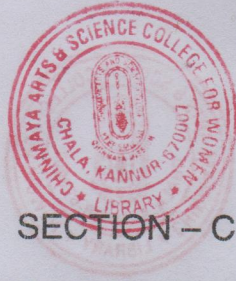
Write short notes on **any three** of the following. **Each** question carries **2** marks.

(3×2=6)

7. What is the role of knockout mouse in plant genetic engineering ?
8. Medical uses of Factor VIII.
9. Uses of genetically modified mice.
10. Advantages of cosmid vectors.
11. How do monoclonal antibodies work ?

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SECTION - C

Write short notes on **any three** of the following. **Each** question carries **4** marks.

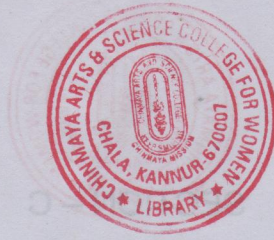
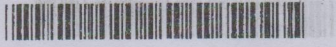
(4×3=12)

12. Briefly explain transfection with advantages and disadvantages.
13. Application of DNA sequencing methods.
14. Explain FISH with necessary diagrams.
15. Explain the ethical issues associated with genetic engineering.

SECTION - D

Write essay on **any two** of the following. **Each** question carries **8** marks. (2×8=16)

16. Explain the c-DNA synthesis and its application in genetic engineering with necessary examples.
17. Explain the role of various enzymes involved in genetic engineering with diagram and applications.
18. Application and importance of *Agrobacterium* in crop improvement.
19. Explain the steps involved in production of Humulin with advantages, disadvantages and application.



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Examination, April 2019
CORE COURSE IN BIOTECHNOLOGY
(2014 Admission Onwards)
6B14BTC : Development Biology

Time : 3 Hours

Max. Marks : 40

SECTION – A

Write about **each** of the following in **2 or 3** sentences. **Each** question carries **1** mark.

1. Sporangium.
2. Blastula.
3. Notochord.
4. Epiboly.
5. Cloning.
6. Cadherins.

(6×1=6)

SECTION – B

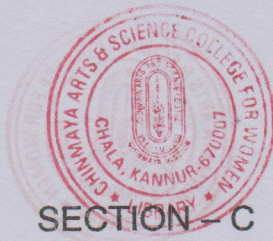
Write short notes on **any three** of the following. **Each** question carries **2** marks.

7. Palynology.
8. Fate map.
9. Instructive interaction.
10. Stem cell niche.

(3×2=6)

P.T.O.

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SECTION - C

Write short essay on **any three** of the following. **Each** question carries **4** marks.

11. Explain double fertilization.
12. Discuss the different patterns of cleavage.
13. Describe oocyte activation.
14. Write notes on stem cells.
15. Discuss the origins of anterior-posterior polarity.

(3×4=12)

SECTION - D

Write essay on **any two** of the following. **Each** question carries **8** marks.

16. Discuss spermatogenesis.
17. Explain the mechanism of cellular differentiation.
18. Describe major events in gastrulation with a model system.
19. Explain nucleocytoplasmic interactions in early development.

(2×8=16)

SECTION - B

Write short notes on **any three** of the following. **Each** question carries **2** marks.

7. Polyony.
8. Fate map.
9. Instructive interaction.
10. Stem cell niche.

(3×2=6)

P.T.O.



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Examination, April 2019

(2014 Admission Onwards)

CORE COURSE IN BIOTECHNOLOGY

6B15BTC : Plant Biotechnology

Time : 3 Hours

Max. Marks : 40

SECTION – A

Write about each of the following in **2 or 3** sentences. **Each** question carries 1 mark. (6×1=6)

1. Organogenesis
2. Tissue culture media
3. Embryo rescue
4. Cryopreservation
5. Protoplast fusion
6. AFLP.

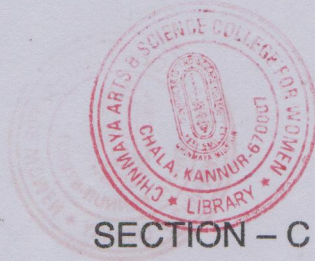
SECTION – B

Write short notes on **any three** of the following. **Each** question carries 2 marks. (3×2=6)

7. Triploid plant production
8. Cybrids
9. Somatic embryogenesis and artificial seeds
10. Shoot tip culture.

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SECTION - C

Write short essay on **any three** of the following. **Each** question carries 4 marks. (3×4=12)

11. Significance of callus culture
12. Methods of protoplast isolation
13. Somaclonal variation and its applications.
14. Transgenic plants
15. Explain the method of Ovule culture.

SECTION - D

Write an essay on **any two** of the following. **Each** question carries 8 marks. (2×8=16)

16. Give a detailed account on agrobacterium mediated gene transfer method.
17. Explain plant molecular markers : RFLP, RAPD, AFLP.
18. Elaborate production of haploid plants, and its significance.
19. Give a detailed account on components of growth media.

SECTION - B

Write short notes on any three of the following. Each question carries 5 marks.

7. Triploid plant production
8. Cybrids
9. Somatic embryogenesis and artificial seeds
10. Shoot tip culture.



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Examination, April 2019

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CORE COURSE IN BIOTECHNOLOGY

6B16BTC : Medical Biotechnology

Time : 3 Hours

Max. Marks : 40

SECTION – A

Write about **each** of the following in **2 or 3** sentences. **Each** question carries **1** mark. **(6×1=6)**

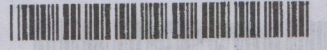
1. CAG triplet repeats.
2. PFGE.
3. Balanced Translocation.
4. What is pathogenic gene ?
5. Amyloid Precursor Protein (APP).
6. What do you mean by AFT ?

SECTION – B

Write short notes on **any three** of the following. **Each** question carries **2** marks. **(3×2=6)**

7. Maternal serum screening.
8. Recombinant proteins employed for human treatment.
9. A brief account on unsolved problems in gene therapy.
10. Molecular markers used for Hepatitis diagnosis.
11. Clinical significance associated with deletion and duplication.

P.T.O.



SECTION – C

Write short notes on **any three** of the following. **Each** question carries **4** marks. **(4×3=12)**

12. Briefly explain mutation detection methods.
13. Explain the role of RT PCR in diagnosis of bacterial diseases.
14. Protein markers used for modern diagnosis.
15. Spinabifida.

SECTION – D

Write essay on **any two** of the following. **Each** question carries **8** marks. **(2×8=16)**

16. Write in detail about the prenatal diagnosis with advantages and disadvantages.
17. Detailed explanation on molecular typing techniques and its application.
18. Explain dynamic mutation with example and treatments.
19. Describe the application of monoclonal antibodies in diagnosis.

SECTION – B

Write short notes on **any three** of the following. **Each** question carries **2** marks. **(3×2=6)**

7. Maternal serum screening.
8. Recombinant proteins employed for human treatment.
9. A brief account on unsolved problems in gene therapy.
10. Molecular markers used for Hepatitis diagnosis.
11. Clinical significance associated with deletion and duplication.