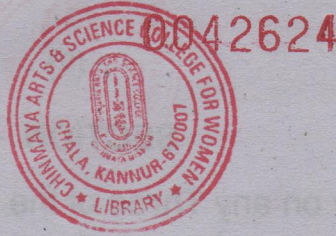




Reg. No. :

Name :



K19U 2209

V Semester B.Sc. Degree (CBCSS-Reg./Sup./Imp.) Examination,
November- 2019

(2014 Admn. Onwards)

CORE COURSE IN BIOTECHNOLOGY

5B 08 BTC : MOLECULAR 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 (6×1=6)

1. What is theta replication ?
2. What is meant by central dogma of molecular biology ?
3. What are polysomes?
4. What is reverse transcriptase?
5. What is a *spliceosome*?
6. What is a poly cistronic mRNA ?

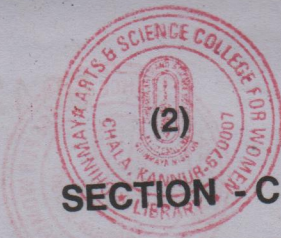
SECTION - B

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

7. What is splicing ?
8. What are the different classes of RNA molecules?
9. Explain coupled transcription and translation.
10. What is the role of SSB in DNA replication ?
11. What are thy nine dimmers?

P.T.O.

K19U 2209



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

12. Briefly explain the regulation of *lac* operon.
13. Briefly explain the significance and mechanism of SOS repair.
14. Explain class II eukaryotic promoters in detail ?
15. What is meant by charging of tRNA? Detail the mechanism of specific recognition between tRNA and cognate amino acid.

SECTION - D.

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

16. Narrate an experiment to prove semi conservative mode of DNA replication?
17. Briefly explain the transcription in prokaryotes?
18. Briefly explain the post translational modifications of prokaryotic proteins?
19. What are the different DNA polymerases in *E coli*? Narrate the cellular role of each of them. What are the different eukaryotic polymerases



Reg. No. :

Name :



0042820

K19U 2210

V Semester B.Sc Degree (CBCSS- Reg./Sup./Imp.) Examination,

November-2019

(2014 Admn. Onwards)

CORE COURSE IN BIOTECHNOLOGY

5B09 BTC : INDUSTRIAL 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. In line sensors.
2. Counter current spray drier.
3. Sampling port.
4. Solid state fermentation.
5. Primary screening
6. HACCP

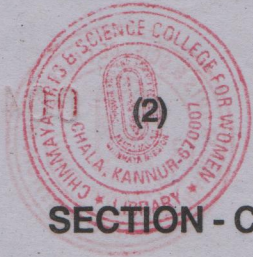
SECTION - B

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

7. Trickling filter.
8. Cyclic fed batch culture.
9. Gradient plate technique.
10. Role of pH and temperature in bioprocess.
11. Application of protoplast fusion technique in strain improvement.

P.T.O.

K19U 2210



SECTION - C

Write short essay on any **Three** of the following.

(3×4=12)

12. Explain role of chromatography in product recovery.
13. Different methods of culture preservation.
14. Give a brief description on design of bioreactor.
15. Steps involved in beer production.

SECTION - D

Write essay on any **Two** of the following.

(2×8=16)

16. Explain in detail about strain improvement for Industrial fermentation.
 17. Give a detail account on industrial production of antibiotic.
 18. Explain the basic principles of fermentation and various types of fermentation with necessary diagrams.
 19. Give a detail account on enzyme immobilization and its industrial application with all advantages and disadvantages.
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Examination, November-2019

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Core Course in Biotechnology

5B10 BTC : ANIMAL CELL 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. What is HAT medium?
2. What is passaging?
3. What is meant by anchorage dependence?
4. What is meant by pluripotency?
5. What is meant by cell lines?
6. What is a primary culture?

SECTION - B

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

7. Write a note on vital stains.
8. What are DNA vaccines.
9. What is meant by IVF technology?
10. What is the necessity of CO₂ incubator in animal cell culture?
11. What is meant by hybridoma technology?

P.T.O.

**SECTION - C**

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

12. What are the applications of monoclonal antibodies?
13. What are the advantages of serum free media?
14. Write a detailed note on nuclear transfer technology?
15. What is meant by cell synchronization? What are the application of synchronized cultures?

SECTION - D

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

16. What are the applications of animal cell culture?
17. Compare and contrast the growth kinetics of a normal cell line and a transformed cell line.
18. What are the gene transfer methods to produce transgenic mice?
19. Detail the floor plan of an ideal animal cell culture laboratory. Narrate utilities of each section and the equipment and facilities in each section.



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V Semester B.Sc. Degree (CBCSS-Reg./Sup./Imp.)
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CORE COURSE IN BIOTECHNOLOGY**5B11BTC : ENVIRONMENTAL 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. Xenobiotics
2. Leghaemoglobin
3. Phosphatic biofertilisers
4. Greenhouse effect
5. Methanogenesis
6. Conventional fuels

SECTION - B

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

7. Discuss briefly on ecological importance of bioleaching.
8. Write on any two symbiotic nitrogen fixing bacteria
9. Write an account on *Bacillus thuringensis*
10. Differentiate bioremediation and biodegradation.

P.T.O.

**SECTION - C**

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

11. Write a note on Social forestry.
12. Explain sources of water pollution
13. Write on air quality management
14. Write on types and significance of biopesticide
15. Discuss plant based petroleum industry

SECTION - D

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

16. Explain sources and effects of air pollution
 17. Detail Biological nitrogen fixation
 18. Describe microbiological analysis of drinking water
 19. Describe process of biogas production with diagram
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