

K20P 0328

Reg. No. : .....

Name : .....

II Semester M.Sc. Degree (CBSS-Reg./Suppl./Imp.) Examination, April 2020  
(2014 Admission Onwards)

BIOTECHNOLOGY  
BTG2C06 : 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. (10×1=10)

1. Operon
2. Helicase
3. Frameshift mutation
4. DNA polymerase II
5. CAP
6. SINE
7. DNA photolyase
8. SnRNP
9. Sigma factor
10. Telomerase.

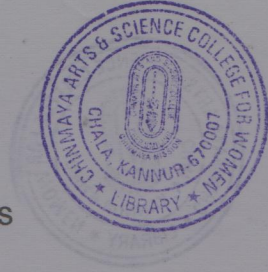
SECTION - B

Write notes on or discuss **any four** of the following. **Each** question carries **5** marks. (4×5=20)

11. Structure of chromatin
12. Transcription activators and repressors

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- 13. Post translational modifications
- 14. Types of RNA
- 15. Initiation factors
- 16. Splicing.

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BTGSC06 : Molecular Biology

SECTION - C

Write an essay on **any one** of the following. The question carries **10** marks. **(1×10=10)**

- 17. DNA replication.
- 18. Lac operon functioning and regulation.

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SECTION - B

Write notes on or discuss any four of the following. Each question carries

5 marks. (4×5=20)

11. Structure of chromatin

12. Transcription activators and repressors



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BIOTECHNOLOGY  
BTG2C07 : Genetics

Time : 3 Hours

Max. Marks : 40

SECTION – A

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

1. Holandric genes.
2. Sex limited genes.
3. Pleiotropism.
4. Heterosis.
5. Tetrad analysis.
6. Angelmann's syndrome.
7. Robertsonian translocation.
8. Specialized transduction.
9. Point mutation.
10. Punctuated equilibria.

(10×1=10)

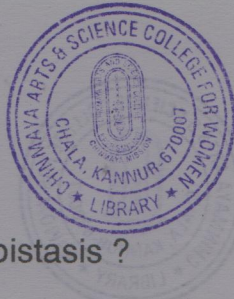
SECTION – B

Write notes on or discuss **any four** of the following. **Each** question carries **5** marks.

11. What are the different types of gene mutation ?
12. What are the different types of structural aberrations ?

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13. What are different types of epistasis ?
14. Explain the inheritance of chloroplast genes by suitable examples.
15. Briefly explain the sex determination mechanisms in animals.
16. What are the applications of allopolyploids ? (4×5=20)

SECTION – C

Write an essay on **any one** of the following. The question carries **10** marks.

17. What are the different types of transposable elements ?
18. Briefly explain the human aneuploid karyotype syndromes resulting in live birth. What are the symptoms of these syndromes. (1×10=10)

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(10×1=10)

SECTION – B

Write notes on or discuss **any four** of the following. Each question carries 5 marks.

11. What are the different types of gene mutation ?
12. What are the different types of structural aberrations ?

P.T.O.



K20P 0330

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**II Semester M.Sc. Degree (CBSS-Reg./Suppl./Imp.) Examination, April 2020**  
**(2014 Admission Onwards)**  
**BIOTECHNOLOGY**  
**BTG2 E01 : Enzymology**

Time : 3 Hours

Max. Marks : 40

**SECTION – A**

Write about **each** of the following in **2** or **3** sentences. **Each** question carries **1** mark. **(10×1=10)**

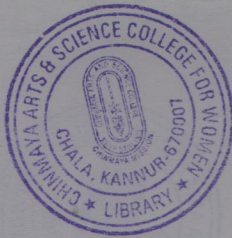
1. Define active site.
2. What do you mean by 'specific activity' ?
3. Give an example for metal ion catalysis.
4. What are isoenzymes ?
5. Mention two advantages of enzyme immobilization.
6. Who proposed sequential model of allosteric enzyme ?
7. What is meant by 'abzyme' ?
8. Mention any one dissimilarity between chemical catalyst and enzyme.
9. Name an enzyme used in the diagnosis of disease.
10. Which coenzyme is associated with carboxylation reactions ?

**SECTION – B**

Write notes on and discuss **any four** of the following. **Each** question carries **5** marks. **(5×4=20)**

11. Explain a method for the determination of  $K_m$  value.
12. Distinguish between competitive and non-competitive enzyme inhibition with suitable examples.
13. Explain the kinetics of allosteric enzyme.

P.T.O.



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14. What are the factors that affect enzyme action ?
15. Explain the steps involved in designing drugs based on enzyme's active site.
16. Detail any two methods of enzyme regulation with suitable examples.

SECTION - C

Write an essay on **any one** of the following. The question carries **10** marks.

(1×10=10)

17. Describe different methods that can be employed for the isolation of enzyme bound to mammalian mitochondrial membrane.
18. Explain the catalytic mechanism of chymotrypsin. What determines the specificity of serine proteases ?

SECTION - B

(5×4=20)

11. Explain a method for the determination of  $K_m$  value.
12. Distinguish between competitive and non-competitive enzyme inhibition with suitable examples.
13. Explain the kinetics of allosteric enzyme.

P.T.O.