

0130774



K19P 1105

Reg. No. :

Name :

III Semester M.Sc. Degree (CBSS-Reg./Suppl./Imp.)

Examination, October - 2019

(2014 Admission Onwards)

Biotechnology

BTG 3C08 - BIOSTATISTICS & BIOINFORMATICS

Time : 3 Hours

Max. Marks : 40

SECTION - A

Write about each of the following in 2 or 3 sentences. Each question carries 1 mark. (10x1=10)

1. What is SAGE?
2. What is range?
3. What is histogram?
4. What is ranked data?
5. What is SWISSPROT?
6. What is PDB?
7. What is protcomics?
8. What is FASTA?
9. What is Rasmol?
10. What is PDB?

P.T.O.

**SECTION - B**

Write notes on or discuss any **Four** of the following. Each question carries **5** marks. **(4x5=20)**

11. Find the coefficient of variation (CV) for the following data.

12 18 24 28 32 36

12. Find mean and median from the following data.

0-10	10
10-20	12
20-30	18
30-40	10
40-50	8

13. Explain about probability.
14. Discuss the difference between local and global alignment with suitable examples.
15. Describe about bioinformatics tools used for analysis of proteomics data.
16. What is Genome mapping? Explain.

SECTION - C

Write an essay on any **one** of the following. The question carries **10** marks. **(1x10=10)**

17. Write about the measures of central tendency.
18. What is Bioinformatics? Explain its importance and applications?
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BIOTECHNOLOGY

BTG 3C09 - RECOMBINANT DNA TECHNOLOGY

Time : 3 Hours

Max. Marks : 40

SECTION-A

Write about each of the following in 2 or 3 sentences. Each carries 1 mark. (10x1=10)

1. Ligase
2. Ri plasmid
3. RT-PCR
4. His-Tag
5. Southern blotting
6. Pyrosequencing
7. PFGE
8. SSCP
9. AFLP
10. Antisense RNA

SECTION-B

Write notes on or discuss any **Four** of the following. Each carries 5 marks. (4x5=20)

11. Discuss DNA sequencing methods.
12. Explain DNA microarray.
13. Describe gene silencing techniques.
14. Write notes on transgenic animal models.
15. Explain methods for cloning PCR products.
16. Explain steps in Agrobacterium mediated transformation.

P.T.O.

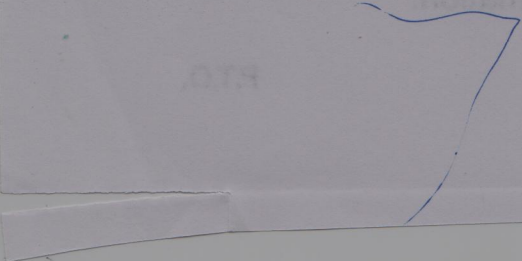


SECTION-C

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

(1x10=10)

- 17. Write an essay on gene transfer methods in animals.
- 18. Write an essay on heterologous protein production in prokaryotes.





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K19P 1107

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III Semester M.Sc. Degree (CBSS-Reg./Sup./Imp.)**Examination, October - 2019****(2014 Admission Onwards)****BIOTECHNOLOGY****BTG 3C10 - PLANT BIOTECHNOLOGY**

Time : 3 Hours

Max. Marks : 40

SECTION-A

Write about each of the following in 2 or 3 sentences. Each carries 1 mark. (10x1=10)

1. Totipotency
2. Somatic embryo
3. Hardening
4. Hormone habituation
5. Ti plasmid
6. Electroporation
7. Disease indexing
8. Auxins
9. Protoplast fusion
10. Embryo culture

SECTION-B

Write notes on or discuss any **Four** of the following. Each carries 5 marks. (4x5=20)

11. Write notes on cell suspension culture production and applications.
12. Discuss germplasm storage and cryopreservation.
13. Explain production and applications of artificial seeds.
14. Describe applications of biotechnology for the conservation of endangered plants.
15. Explain molecular markers for crop improvement.
16. Describe callus and its regeneration.

P.T.O.



SECTION-C

Write an essay on any **one** of the following, Each carries **10** marks

(1x10=10)

- 17. Write an essay on gene transfer methods in plants.
- 18. Write an essay on chemical and physical factors influencing the production of secondary metabolites.

Max Marks : 40

Time : 3 Hours

SECTION-A

Write about each of the following in 2 or 3 sentences. Each carries 1 mark. (10x1=10)

- 1. Totipotency
- 2. Somatic embryo
- 3. Hardening
- 4. Hormone regulation
- 5. Ti plasmid
- 6. Electroporation
- 7. Disease indexing
- 8. Auxins
- 9. Protoplast fusion
- 10. Embryo culture

SECTION-B

Write notes on or discuss any four of the following. Each carries 5 marks. (4x5=20)

- 11. Write notes on cell suspension culture production and applications.
- 12. Discuss germplasm storage and cryopreservation.
- 13. Explain production and applications of artificial seeds.
- 14. Describe applications of biotechnology for the conservation of endangered plants.
- 15. Explain molecular markers for crop improvement.
- 16. Describe callus and its regeneration.



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K19P 1108

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III Semester M.Sc. Degree (CBSS-Reg/Suppl./Imp.)**Examination, October - 2019****(2014 Admission Onwards)****BIOTECHNOLOGY****BTG 3C11 : 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. **(10×1=10)**

1. What is meant by a confluent culture?
2. What is trypsinisation?
3. What is passaging?
4. What is CO₂ Incubator?
5. What is MTT assay?
6. What is nuclear transfer technology?
7. What is an organ culture?
8. What are selectable markers?
9. What is animal pharming?
10. What is a transformed cell line?

P.T.O.

**SECTION-B**

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

11. Write in detail about cryopreservation and revival of cell lines?
12. What are methods for cell line characterisation?
13. What are the applications of animal cell culture?
14. What are the applications of monoclonal antibodies?
15. What are the advantages of serum in animal cell culture media?
16. What is the extrinsic path way of apoptosis?

SECTION-C

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

17. What is hybridoma technology? Elaborate on the technique and its applications.
 18. What are the techniques for producing transgenic mouse?
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Examination, October - 2019

(2014 Admission Onwards)

BIOTECHNOLOGY

**BTG 3E04 : BIOSAFETY, BIOETHICS AND INTELLECTUAL
PROPERTY RIGHTS**

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. What is meant by geographical indications?
2. What is Golden rice?
3. What is meant by novelty of an invention?
4. How human dignity is compromised in organ trade?
5. Comment on Cartagena protocol on biosafety?
6. What is biopiracy?
7. What are GMO?
8. What are extant varieties?
9. Neem plant has traditionally known medicinal properties. Could this property be patented? Substantiate your answer?
10. What is GATT?

P.T.O

**SECTION - B**

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

11. What are the possible effects of HGP on patenting genes?
12. What is patent filing procedure in India?
13. Comment on PPVFR?
14. Comment on provisional specification of a patent?
15. Comment on the ethical implications of therapeutic cloning.
16. Elaborate on different biosafety cabinets.

SECTION - C

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

17. What are the features of an invention that make it patentable?
18. What are the precautions to be taken in transgenic research?