

K20U 1487

Reg. No. :

Name :

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

Examination, November 2020

(2014 Admn. Onwards)

CORE COURSE IN BIOTECHNOLOGY

5B08 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 are exons ?
2. What are *polysomes* ?
3. What is catabolite repression ?
4. What are stop codons ?
5. What is *factor dependent termination* ?
6. What are restriction nucleases ?

SECTION – B

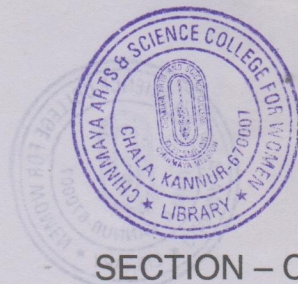
Write short notes on **any three** of the following. **Each** question carries **2** marks.

(3×2=6)

7. What are inteins and exons ?
8. What is meant by charging of tRNA ?
9. Explain rolling circle replication.
10. What is the role of DNA topoisomerases in DNA replication ?
11. What are plasmids ?

P.T.O.

K20U 1487



Reg. No. :

Name :

SECTION – C

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

12. Compare and contrast eukaryotic and prokaryotic ribosomes.
13. Briefly explain the significance and mechanism of nucleotide excision repair.
14. What are the different mechanisms of transcription termination in E.coli ? What is the different protein factors involved in factor dependent termination ?
15. What is an inducible operon ? Explain with a suitable example.

SECTION – D

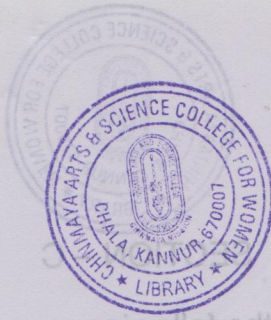
Write essay on **any two** of the following. **Each** question carries **8** marks. **(2×8=16)**

16. Narrate an experiment to prove that DNA is the genetic material in bacteria.
17. Briefly explain the post transcriptional modifications of eukaryotic mRNA.
18. What are the different steps in prokaryotic translation ?
19. Briefly explain the mechanism of splicing of eukaryotic mRNA.

SECTION – B

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

7. What are intrins and exons ?
8. What is meant by charging of tRNA ?
9. Explain rolling circle replication.
10. What is the role of DNA topoisomerases in DNA replication ?
11. What are plasmids ?



K20U 1488

Reg. No. :

Name :

V Semester B.Sc. Degree (CBCSS – Reg./Sup./Imp.)

Examination, November 2020

(2014 Admn. Onwards)

CORE COURSE IN BIOTECHNOLOGY

5B09BTC : 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.

1. HACCP principles.
2. Distilled liquors.
3. *Corynebacterium glutamicum*.
4. Fungal amylase.
5. Microbial biotransformation.
6. Factors affecting wine production.

(6×1=6)

SECTION – B

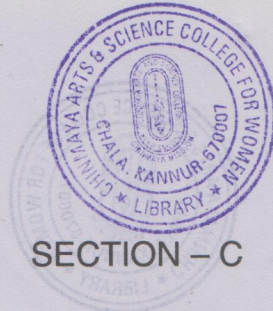
Write short notes on **any three** of the following :

7. Airlift fermenter.
8. Fed batch fermentation.
9. Scale up.
10. Role of pH and temperature in bioprocess.
11. Compare batch and continuous fermentation.

(3×2=6)

P.T.O.

K20U 1488



SECTION - C

Write short essay on **any three** of the following :

12. Explain feedback control with diagram.
13. Para sexual cycle and its application in strain improvement.
14. Give a brief description of fermentation media.
15. Fermented vegetables.

(3×4=12)

SECTION - D

Write essay on **any two** of the following :

16. Explain in detail about principles of food preservation, food hygiene and good manufacturing practices.
17. Give a detail account on industrial production of amylase and its various applications.
18. Explain the production, application, uses and advantages of single cell proteins.
19. Give a detail account on different types of fermenters with diagram and applications.

(2×8=16)

SECTION - B

Write short notes on **any three** of the following :

7. Air lift fermenter.
8. Fed batch fermentation.
9. Scale up.
10. Role of pH and temperature in bioprocess.
11. Compare batch and continuous fermentation.

(3×5=8)

P.T.O.



K20U 1489

Reg. No. :

Name :

V Semester B.Sc. Degree (CBCSS-Reg./Sup./Imp.) Examination, November 2020
(2014 Admn. Onwards)

CORE COURSE IN BIOTECHNOLOGY
5B10BTC : 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 a hybridoma ?
2. What is trypsinisation ?
3. What is meant by ascites cellculture ?
4. What is meant by totipotency ?
5. What is meant by embryonic stem cells ?
6. What is a vital stain ?

SECTION – B

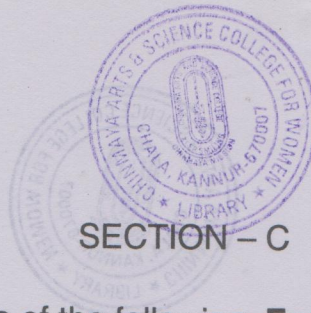
Write short notes on **any three** of the following. **Each** question carries **2** marks.

(3×2=6)

7. Write a note on passaging.
8. What are subunit vaccines ?
9. What is meant by ICSI ?
10. What are cryoprotectants ?
11. What is meant by polyclonal antibodies ?

P.T.O.

K20U 1489



SECTION - C

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

(3×4=12)

12. What are the advantages of serum containing media ?
13. Detail the growth kinetics of a normal cell line in culture.
14. Write a detailed note on applications of transgenic animals.
15. What is meant by an artificial media ? Elucidate the advantages and disadvantages of serum free media.

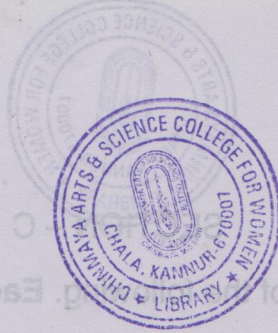
SECTION - D

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

16. What are the applications of monoclonal antibodies ?
17. Compare and contrast the features of normal and transformed cell in culture.
18. Write a detailed note on production of pharmaceuticals in animal cell culture.
19. What are the functions of institutional animal ethical committee ? Outline the ethics of animal cloning.

SECTION - B

(3×5=15)



K20U 1490

Reg. No. :

Name :

V Semester B.Sc. Degree (CBCSS – Reg./Sup./Imp.)

Examination, November 2020

(2014 Admn. Onwards)

CORE COURSE IN BIOTECHNOLOGY

5B11 BTC : 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. Biodiesel
2. Sacred forests
3. Nitrogenase
4. Greenhouse effect
5. Methanogenesis
6. Conventional fuels.

SECTION – B

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

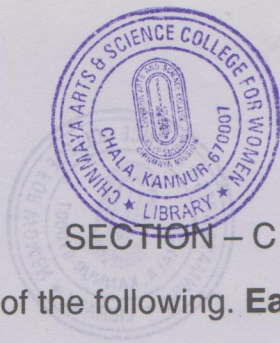
2 marks :

(3×2=6)

7. Write a note on control of water pollution.
8. Biofarming.
9. Acid rains.
10. Symbiotic nitrogen fixation.

P.T.O.

K20U 1490



SECTION - C

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

4 marks :

(3×4=12)

11. Detail Nif gene regulation.
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 biological nitrogen fixation.
17. Discuss the effect of global warming with special mention to greenhouse gases.
18. Describe briefly on modern fuels and their environmental impacts.
19. Detail biotechnological inputs in producing good quality fibers.

SECTION - B

(3×5=15)

P.T.O.