

C 21510

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Name.....

Reg. No.....

## FOURTH SEMESTER (CBCSS—UG) DEGREE EXAMINATION, APRIL 2022

Biochemistry

BCH 4C 04—BIOCHEMISTRY—IV

(2019 Admission onwards)

Time : Two Hours

Maximum : 60 Marks

## Section A

*Answer all questions.**Each question carries 1 mark.*

- How many NADH, H<sup>+</sup> are produced during  $\beta$ -oxidation of palmitic acid ?
  - 7.
  - 8.
  - 14.
  - 15.
- Committed enzyme for fatty acid biosynthesis is :
  - HMG Co A reductase.
  - Acetyl CoA dehydrogenase.
  - Acetyl CoA carboxylase.
  - Malonyl CoA carboxylase.
- In transamination reaction after accepting amino group from all amino acids,  $\alpha$ -KG is converted to \_\_\_\_\_.
  - Oxaloacetate.
  - Aspartic acid.
  - Glutamate.
  - Pyruvate.
- Glutamate is decarboxylated to \_\_\_\_\_.
  - Glycine.
  - GABA.
  - Histamine.
  - Dopamine.
- Which of the following enzyme in E coli posses 5'- 3' exonuclease activity ?
  - DNA polymerase I.
  - DNA polymerase II.
  - DNA polymerase III.
  - RNA polymerase I.

Turn over

6. Length of Okazaki fragments is :
- a) 100-200 nucleotides.                      b) 200-400 nucleotides.  
c) 1000-2000 nucleotides.                      d) None of the above.
7. Transcription termination protein in E. coli is :
- a) Sigma.    b) Rho.  
c) Alpha.    d) Beta.
8. \_\_\_\_\_ is the enzyme used to synthesize urea from arginine.
9. In Cori's cycle, lactate produced in muscle is delivered to \_\_\_\_\_ to synthesize glucose.

(9 × 1 = 9 marks)

### Section B

*Answer atleast **six** questions.  
Each question carries 3 marks.  
All questions can be attended.  
Overall ceiling 18.*

10. Give three characteristics of genetic code.
11. Mention the major physiological functions of thyroxine.
12. List out stop codons.
13. Explain the role of different RNA in protein synthesis.
14. What is Ori C ? Give its features.
15. Write briefly on absorption of lipids.
16. Discuss on promoters in E. coli.
17. Write a short notes on replication fork in replication.

(6 × 3 = 18 marks)

### Section C

*Answer atleast **three** questions.  
Each question carries 7 marks.  
All questions can be attended.  
Overall ceiling 21.*

18. Explain the steps in Urea cycle.
19. How is acetyl groups transferred from mitochondria to the cytosol for fatty acid synthesis ?

20. Mention the site of biosynthesis of glucocorticoids and also give its physiological role.
21. Write a briefly on termination process in transcription.
22. Discuss on fatty acid synthase complex.

(3 × 7 = 21 marks)

#### Section D

*Answer any **one** question.*

*Each question carries 12 marks.*

23. Give an account of DNA replication process in *E. coli*.
24. Elaborate on the various steps in  $\beta$  oxidation of fatty acids and calculate the number of ATP produced after the complete oxidation of palmitic acid to  $\text{CO}_2$ .

(1 × 12 = 12 marks)