

(6 pages)

Reg. No.

Code No. : 8412

Sub. Code : HBOM 31

M.Sc. (CBCS) DEGREE EXAMINATION,
NOVEMBER 2016.

Third Semester

Botany

BIOCHEMISTRY AND BIOPHYSICS

(For those who joined in July 2012-2015)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer.

1. Choose the oligosaccharide from the following
(a) sucrose (b) fructose
(c) starch (d) glucose
2. Pentose sugar is a
(a) oligosaccharide
(b) disaccharide
(c) monosaccharide
(d) polysaccharide

3. The source of agar-agar is
(a) fungi (b) bacteria
(c) virus (d) alga
4. A bond between carboxyl group of one amino acid and amino group of another amino acid is
(a) hydrogen bond
(b) hydroxyl bond
(c) peptide bond
(d) glycosidic bond
5. Lipid monomer refers to
(a) alkaloid (b) protein
(c) glucose (d) fatty acid
6. The secondary metabolite, in which most of them are toxic to other organisms
(a) lipid (b) protein
(c) sugar (d) alkaloid
7. The enzymes responsible for hydrolysis of peptide bond
(a) carboxylase (b) hydroxylase
(c) proteolytic (d) lysozyme

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8. Induced fit model of the interaction of the substrates and enzymes is proposed by
- (a) Fischer (b) Koshland
(c) Stryer (d) Michaelis
9. An enzyme catalyzed oxidation-reduction reaction is
- (a) oxred (b) redox
(c) reduction (d) oxidation
10. The first reaction of photosynthesis in chloroplast, once trapping the light is
- (a) emission (b) reduction
(c) excitation (d) addition

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

11. (a) Draw and explain the structure of glucose.
- Or
- (b) Mention the source and explain the structure of cellulose.

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12. (a) What are amino acids? Name the non-polar amino acid.

Or

- (b) Describe the steps involved in purification of proteins.

13. (a) Explain the basic structure of DNA and RNA.

Or

- (b) Write notes on glycosides.

14. (a) Explain Koshland's "Induced fit model" of enzyme mechanism.

Or

- (b) Elaborate the lock and key model of enzyme mechanism.

15. (a) What is bioluminescence? Explain its physical character.

Or

- (b) What do you mean by Redox? Explain Faraday's constant.

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PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 600 words

16. (a) Elaborate the constituents of starch and its linkage.

Or

- (b) Write an essay on polysaccharides.

17. (a) Write an essay on classification of proteins.

Or

- (b) Write an essay on denaturation and renaturation of proteins.

18. (a) Write an essay on biosynthesis of DNA and RNA.

Or

- (b) Write short notes on the following: alkaloids, steroids, terpenoids.

19. (a) Write the general properties of enzymes in detail.

Or

- (b) What do you mean by enzyme regulation? Explain in detail.

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20. (a) Write an essay on properties of light.

Or

- (b) What are high energy compounds in biology? Mention its significance.

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