



FIJI NATIONAL UNIVERSITY
College of Agriculture, Fisheries & Forestry
Department of Genetics & Plant Breeding
Bachelor of Agriculture- Year II
Trimester II- Final Examination - 2017
PBC 601: Plant Biochemistry

Time Allowed: 3.00 hours plus (10 minutes reading time) Total Marks: 75

INSTRUCTIONS:

1. This paper consists of five pages including two pages Answer Sheet.
2. Please check to see that all your paper is complete.
3. Answer all the Objective Type Questions on the Answer Sheet and Descriptive Type Question in the Answer Booklet only.
4. The Answer sheet of the objective Type Questions will should be tied with the main sheet.
5. Follow the same question number while writing answers in the answer booklet.
6. No written or printed material and mobile phones are allowed in the examination hall
7. Marks allocated for each question appears at the side of each question so allocate your time accordingly.
8. This paper is divided into Two Parts. First Part contains Objective Type Questions which is having three Sections – A, B & C. All questions of this part are compulsory. Second part is Descriptive Type which is having three sections D, E & F.

I. OBJECTIVE TYPE QUESTIONS (30 Marks)

Note: Answer only on the Answer Sheet provided with Question paper.

- Section A : Choose the best answer. (10 Marks)
Section B : Fill in the blanks. (10 Marks)
Section C : Match the following. (10 Marks)

II. DESCRIPTIVE TYPE QUESTIONS (45 marks)

There are **Six (6)** questions on Section D, you attempt only **Five (5)**, followed by Section E contain **Four (4)** questions, do attempt only **Three (3)**, and then in Section F **Three (3)** questions are given, do attempt only **two (2)** from it.

Note: Answer only on the Answer Booklet provided.

- Section D : Definitions (10 Marks)
Section E : Short Answer (15 Marks)
Section F : Descriptive Question (20 Marks)

I. OBJECTIVE TYPE QUESTIONS

Note: To be answered only on the ANSWER SHEET provided with QUESTION PAPER.

A. FILL IN THE BLANKS.**(10x 1= 10 Marks)**

1. _____ are the basic structural unit of living organisms.
2. _____ help distinguish plant cells from other organisms.
3. _____ are the most abundant biomolecules on earth.
4. _____ is a carbohydrate, and is a simple sugar found in fruits.
5. _____ are a class of lipids that are a major component of all cell membranes.
6. _____ is the breakdown of molecules to obtain energy.
7. _____ allow the transport of substances from one cell to the next.
8. _____ amino acids are those that can be synthesized by the body.
9. _____ is often called the blueprint of life.
10. Transcription is performed by enzymes called _____.

B. CHOOSE THE BEST ANSWER.**(10x1= 10 Marks)**

11. Fatty acids with single bond are called _____.
 a Saturated fatty acid b Unsaturated fatty acids
 c Micelles Fatty acid d Liposome fatty acid
12. _____ is a complex carbohydrate.
 a Glucose b Fructose
 c Sucrose d Starch
13. _____ is a disaccharide sugar derived from galactose and glucose.
 a Glucose b Fructose
 c Sucrose d Lactose
14. _____ of microfibrils increases the tensile strength of cell wall in plants.
 a Micelles b Liposomes
 c Chitin d Cellulose
15. Glycolysis occur in _____ & TCA cycle occur in _____.
 a Both in Cytoplasm b Both in Mitochondria
 c Cytoplasm & Mitochondria d Mitochondria & Cytoplasm
16. The ribosome reads the _____ codon.
 a rRNA b mRNA
 c tRNA d None of the above
17. Periphery of DNA is made of _____.
 a Nucleotide and Phosphate b Nucleotide and Sugar
 c Sugar and Phosphate d All the above
18. The message on mRNA and converts it into an amino acid chain called _____.
 a Transcription b Translation
 c Both a & b d DNA
19. _____ are also called biocatalyst and it is a protein.
 a Carbohydrate b DNA
 c Lipids d Enzymes
20. _____ are chiefly function in energy storage and protection.
 a Carbohydrate b Proteins
 c Lipids d Nucleicacid

C. MATCH THE FOLLOWING:

(10x1 =10 Marks)

PART – A

PART-B

- | | |
|-------------------------------|--------------------------------|
| 21. Atoms | A. Adenine and Guanine |
| 22. Pulp and plant cell wall | B. Sterols of plants |
| 23. Biomolecules | C. Basic unit of matter |
| 24. Trehalose | D. Simplest lipids |
| 25. Stanols | E. Hydrophilic and Hydrophobic |
| 26. Pentose phosphate pathway | F. Molecular logic of life |
| 27. Purines | G. Raw material for paper |
| 28. Rosalind Franklin | H. Blood sugar of insects |
| 29. Triacylglycerol | I. Alternative to glycolysis |
| 30. Amphipathic | J. Thymine and Cytosine |
| | K. X-ray Photograph of DNA |

II. DESCRIPTIVE TYPE QUESTIONS

*Note: To be answered only on the ANSWER BOOKLET provided.*D. DEFINITIONS/NOTES - Attempt Any Five Questions (3-4 lines)*Each question carries TWO marks*

(5 x 2 = 10 Marks)

- | | |
|---|-------------------------------------|
| 31. Glycoproteins and its functions | 34. Phospholipid Bilayer |
| 32. Define Carbohydrates and classify | 35. Catabolism and Anabolism |
| 33. Define Biomolecules and its functions | 36. Biochemistry and its principles |

E. SHORT ANSWER - Attempt Any Three Questions (1 Page each).*Each question carries Five marks*

(3 x 5 = 15 Marks)

37. What is protein? Classify different types of protein with examples?
38. Describe TCA Cycle with Diagram.
39. Describe the enzyme substrate reaction.
40. Describe the economic importance of plant cell wall in livestock and paper industries?

F. DESCRIBE THE FOLLOWING - Attempt Any Two Questions (2 Pages each).*Each question carries TEN marks*

(2 x 10 = 20 Marks)

41. Explain the Structure of DNA with Diagram
42. Explain the Transcription process with Diagram
43. Explain the Two phases of Glycolysis

The End

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