



**NATIONAL OPEN UNIVERSITY OF NIGERIA  
FACULTY OF AGRICULTURAL SCIENCES  
DEPARTMENT OF ANIMAL SCIENCE AND FISHERIES  
2020 2 EXAMINATION**

**COURSE CODE:** ANP 308

**COURSE TITLE:** Metabolism of Carbohydrates, Lipids, Proteins And Nucleic Acids

**CREDIT UNIT: 2 CU**

**TOTAL SCORE: 70 MARKS**

**TIME ALLOWED: 2 Hours**

**INSTRUCTIONS:** ANSWER QUESTION 1 (25 MARKS) AND ANY OTHER THREE (15 MARKS EACH)

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|----|----|---|
| Q1 | a  | Briefly explain the classification of sugars <b>15 marks.</b>                         |
|    | b  | Describe the following types of protein structure: <b>5 marks</b>                     |
|    | i  | Tertiary structure  |
|    | ii | Quaternary structure  |
|    | c  | What are saturated and unsaturated fatty acids. <b>5 marks</b>                        |
| Q2 |    | Write short notes on the following:   |
|    | i  | Sucrose (cane Sugar)  |
|    | ii | Oligosaccharides <b>15 marks</b>  |
| Q3 |    | Explain in details what you understand by secondary derived proteins. <b>15 marks</b> |
| Q4 |    | Explain transamination and oxidative deamination of L-glutamate. <b>15 marks</b>      |
| Q5 | a  | State and explain the types of lipids you know. <b>9 marks</b>                        |
|    | b  | State the importance of lipids <b>6 marks</b>   |
| Q6 | a  | Enumerate the factors that affects absorptions of lipids. <b>8 marks</b>              |
|    | b  | What are blood lipids. <b>7 marks</b>   |