

PARUL UNIVERSITY
PARUL INSTITUTE OF APPLIED SCIENCES
MID SEMESTER INTERNAL EXAMINATION, APRIL 2023
BSC SEMESTER II
Subject Name: Biochemistry II
Subject Code: 11102115

Date: 04/04/2023

Time: 08:00 am to 09:30 pm

Maximum Marks: 40

Instructions:

1. All questions are compulsory and options are given in first and second question only.
2. Numbers to the right of question indicate the marks of respective question.

| | | | | | | |
|------------|--|-------------|-----------|-----------|------------|------------------------|
| Q.1 | Attempt <u>any one</u> question of the following. | (08) | CO | PO | PSO | Blooms Taxonomy |
| 1. | Explain glycolysis with its energetics in detail. | 04 | CO2 | PO1 | | Remembering |
| 2. | Explain urea cycle and explain its energetics. | 04 | CO2 | PO1 | | Remembering |
| | | | | | | |
| Q.2 | Attempt <u>any three</u> questions of the following. | (12) | CO | PO | PSO | Blooms Taxonomy |
| 1. | What is anabolism and catabolism? | 04 | CO4 | PO3 | | Evaluating |
| 2. | Write down the cellular location of different carbohydrate metabolic pathways. | 04 | CO3 | PO2 | | Evaluating |
| 3. | What is HMP shunt? Why it is important? | 04 | CO1 | PO2 | | Evaluating |
| 4. | Give SGPT/SGOT reaction and discuss its clinical significance. | 04 | CO1 | PO1 | | Applying |
| 5. | Explain oxidative and non-oxidative deamination with examples. | 04 | CO2 | PO4 | | Evaluating |
| | | | | | | |
| Q.3 | Do as directed. Attempt <u>all five</u> questions. | (05) | CO | PO | PSO | Blooms Taxonomy |
| 1. | Name five essential amino acids. | 01 | CO1 | PO4 | | Remembering |
| 2. | Which molecule act as precursor for Histidine synthesis? | 01 | CO3 | PO4 | | Remembering |
| | | | | | | |
| 3. | What is protein turnover? | 01 | CO3 | PO2 | | Understanding |
| 4. | Give complete reaction of alcoholic fermentation. | 01 | CO4 | PO1 | | Evaluating |
| 5. | Give net reaction of TCA cycle. | 01 | CO4 | PO1 | | Remembering |

| Q.4 | Write correct option in your answer sheet for following fifteen multiple choice Questions. | | | (15) | CO | PO | PSO | Blooms Taxonomy |
|------------|---|--------------------------------|-----|--------------------------------|-----------|-----------|------------|------------------------|
| 1. | Which molecule act as link between TCA cycle and Urea cycle? | | | 01 | CO2 | PO3 | | Creating |
| | (A) | Oxaloacetate | (B) | Melate | | | | |
| | (C) | Fumerate | (D) | All of above | | | | |
| 2. | Following is an example of non-essential amino acid | | | 01 | CO1 | PO1 | | Remembering |
| | (A) | Lysine | (B) | Threonine | | | | |
| | (C) | Valine | (D) | Glutamine | | | | |
| 3. | Pyruvate act as precursor molecule for following amino acid | | | 01 | CO1 | PO1 | | Evaluating |
| | (A) | Alanine | (B) | Valine | | | | |
| | (C) | Leucine | (D) | All of the above | | | | |
| 4. | Protein turnover of average human body is..... | | | 01 | CO3 | PO4 | | Remembering |
| | (A) | 50-100g | (B) | 25-75g | | | | |
| | (C) | 300-400g | (D) | 500-1000g | | | | |
| 5. | High blood serum level of SGPT indicates | | | 01 | CO4 | PO2 | | Remembering |
| | (A) | Hepatitis | (B) | Pancreatitis | | | | |
| | (C) | Gastritis | (D) | All of the above | | | | |
| 6. | Which acts as electron carrier for oxidative deamination | | | 01 | CO4 | PO4 | | Analyzing |
| | (A) | NAD+ | (B) | NADP+ | | | | |
| | (C) | Both of above | (D) | None of above | | | | |
| 7. | How many ATPs are utilized during Urea cycle? | | | 01 | CO2 | PO1 | | Applying |
| | (A) | 2 | (B) | 4 | | | | |
| | (C) | 3 | (D) | 6 | | | | |
| 8. | How many ATPs are produced during Lactate fermentation | | | 01 | CO3 | PO2 | | Applying |
| | (A) | 5 | (B) | 4 | | | | |
| | (C) | 3 | (D) | 2 | | | | |
| 9. | Cellular location of Pyruvate dehydrogenase complex | | | 01 | CO1 | PO3 | | Understanding |
| | (A) | Cytosol | (B) | Mitochondrial matrix | | | | |
| | (C) | Inner membrane of mitochondria | (D) | Microsomes | | | | |
| 10. | Aconitase convert _____ to _____ | | | 01 | CO3 | PO1 | | Analyzing |
| | (A) | Oxaloacetate to Citrate | (B) | Citrate to Isocitrate | | | | |
| | (C) | Succinate to Fumerate | (D) | Melate to oxaloacetate | | | | |
| 11. | How many NADH₂ will be produced from 1 glucose molecule | | | 01 | CO2 | PO4 | | Remembering |
| | (A) | 6 | (B) | 8 | | | | |
| | (C) | 10 | (D) | 12 | | | | |
| 12. | Subcellular location of Kreb's cycle is | | | 01 | CO1 | PO3 | | Remembering |
| | (A) | Cytosol | (B) | Inner membrane of mitochondria | | | | |
| | (C) | Mitochondrial matrix | (D) | Microsomes | | | | |

| | | | | | | | | |
|-----|--|----------------------|-----|---------------------|----|-----|-----|---------------|
| 13. | Net substrate level ATP produced during glycolysis are | | | | 01 | CO4 | PO2 | Understanding |
| | (A) | 2 | (B) | 4 | | | | |
| | (C) | 6 | (D) | 8 | | | | |
| 14. | Which sugar is present in ATP? | | | | 01 | CO1 | PO1 | Applying |
| | (A) | Ribose | (B) | Ribulose | | | | |
| | (C) | Deoxyribose | (D) | Deoxyribulose | | | | |
| 15. | Which of the following is high energy phosphate compound? | | | | 01 | CO3 | PO2 | Remembering |
| | (A) | Phosphoenolpyruvate | (B) | Glucose-6-Phosphate | | | | |
| | (C) | Glycerol-3-phosphate | (D) | None of above | | | | |