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Total Number of Pages 16

B.V.Sc. & A.H. (Second Professional) Examination – 2022

Veterinary Biochemistry Paper –II

(MSVE 2016)

To be filled by the candidate:

Candidate's Roll Number:
In figure .....

In words .....

Candidate's Enrolment Number: .....

Day and date of examination: .....

Please see for general instructions overleaf.

Signatures of invigilators verifying the details filled by the candidate

Signature of invigilator 1: ..... 2: .....

Candidate should not write anything below this line

Marks to be filled by the examiner:

Section A	
Q. No.	**Marks**
1.	
2.	
3.	
4.	
5.	
Total	

Total Marks obtained:

In figures: ..... In words: .....

Signature of examiner: .....

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B.V.Sc. & A.H. (Second Professional) Examination – 2022
Veterinary Biochemistry Paper -II

Time: Three Hours **Maximum Marks: 100**
Weightage: 20

Unit-2 (Intermediary Metabolism)

Instructions:
1) Attempt all questions
2) Answer of all questions is to be written in the space provided along with the question in question-booklet.
3) Overwriting is not allowed in the objective type question.

Q.1 Fill in the blanks. **(20x0.5 = 10)**

1.1 Entry of glucose in skeletal muscle is mediated via ..... (name of transporter).

1.2 Stimulatory effect of oxygen on the fermentation process is known as .....

1.3 Enzymes are nomenclature with ..... digit numbers.

1.4 An integral component of coenzyme A is .....

1.5 The non protein part of holoenzyme is called .....

1.6 2,3 bisphosphoglycerate is synthesized in.....

1.7 Glycogenin serves as primer for.....

1.8 The rate limiting step of cholesterol bio-synthesis is catalysed by .....

1.9 The x-intercept in double reciprocal plot is.....

1.10 The class of enzyme that do not exhibit stereospecificity is .....

1.11 Urea synthesis only occurs in the .....

1.12 If the nonprotein component of an enyzme is firmly attached to the protein it is called a.....

1.13 The reactions that replenish the TCA cycle intermediate are termed as .....

1.14 The competitive inhibition is overcome by increasing the ..... concentration.

1.15 In urea synthesis nitrogen atom is supplied by .....

1.16 Uric acid is end product of ..... Metabolism.

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1.17 Phosphocreatine, a storage forms of high-energy phosphates stored in.....

1.18 The enzyme contains allosteric sites are called.....

1.19 Ascorbic acid is not synthesized in primate due to deficiency of the enzyme .....

1.20 Glucose 6 Phosphatase enzyme absent in ..... (name of tissue).

Q.2 Choose the most suitable answer and write the number of the correct answer 1 or 2 or 3 or 4 in the space given against each sub question: (20x0.5 = 10)

2.1 Regulated metabolic pathways are ( )
1. Irreversible
2. Committed after the first step
3. Compartmentalized in eukaryotes
4. All of the above

2.2 Which aspects of the reaction will be changed by Enzyme? ( )
1. Energy of the product
2. Equilibrium position of the reaction
3. Rate of the reaction
4. None of the above

2.3 Multienzyme complex have a 3-D shape due to which type of protein structure ( )
1. Primary structure
2. Secondary Structure
3. Tertiary structure
4. Quaternary structure

2.4 End product of beta oxidation of five carbon fatty acid is ( )
1. Acetyl CoA and Acetyl CoA
2. Propionyl CoA and Butyryl CoA
3. Acetyl CoA and Propionyl CoA
4. Acetyl CoA and Methyl CoA

2.5 Lactate synthesized in Muscle is transported to liver by ( )
1. Glucose alanine cycle
2. Malate aspartate shuttle
3. Cori Cycle
4. Sorbitol Pathway

2.6 P: O Ratio for $NADH+H^+$ is ( )
1. 2
2. 3
3. 3.5
4. 1.5

2.7 Oxidative phosphorylation is inhibited by cyanide by ( )
1. Inhibiting ATP synthase
2. Inhibiting Ubiquinone
3. Inhibiting cytochrome oxidase
4. Inhibiting $NADH+H^+$

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2.8 Inner

2.9 Whi

2.10 Wh

2.11 Ho

2.12 K

2.13 T

2.14

2.15

2.16

2.8 Inner Mitochondrial membrane is impermeable to ( )
1. H^+
2. Na^+
3. K^+
4. All of the above

2.9 Which of the following is known as ketone bodies ( )
1. Butyrate
2. Propionate
3. Acetate
4. none of the above

2.10 Which of the following is correct regarding anabolism ( )
1. It is process of synthesis of small molecule from large molecule
2. It is process of synthesis of large molecule from small molecule
3. It release energy
4. It does not require energy

2.11 How many classes of enzymes are there? ( )
1. 2
2. 4
3. 6
4. 8

2.12 Km equals to the substrate concentration when the reaction rate is ( )
1. Minimum
2. Maximum
3. Half of maximum
4. Quarter of maximum

2.13 The process of glycolysis ( )
1. Requires a pathway of chemically coupled phosphoryl-transfer reactions
2. Uses 2 ATP molecules and forms 2 ATP molecules and one NADH molecule
3. Converts glucose into two glycerate molecules
4. Occurs in the mitochondria

2.14 Which of the following would yield the most energy per gram when oxidized ( )
1. Glucose
2. Glycogen
3. Starch
4. Triacylglycerol

2.15 Oxaloacetate is reduced to malate by ( )
1. Pyruvate carboxylase
2. Malate dehydrogenase
3. Pyruvate kinase
4. Phosphofructokinase-1

2.16 Which one, among the following provide the highest amount of ATP? ( )
1. Electron transport chain
2. Krebs cycle
3. Oxidative phosphorylation
4. Glycolysis

2.17 Which of the following is unit of enzyme ( )

1. katal
2. Mg/dl
3. Mg/L
4.

2.18 Induced fit theory was proposed by ( )

1. Koshland
2. Fischer
3. Mischer
4. Watson

2.19 Glutamate dehydrogenase involved in which the following process ( )

1. Oxidative deamination
2. Non-oxidative deamination
3. Transamination
4. Decarboxylation

2.20 Which of the following amino acid involved in pyrimidine synthesis ( )

1. Aspartate and glutamate
2. Aspartate and glutamine
3. Asparigine and glutamate
4. Asparigine and glutamine

Q.3 Attempt any <u>ten</u> out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (10x2.0= 20)

3.1 Enzyme

3.2 Uncoupler

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3.3 Monooxygenase

3.4 Rappaport Leubering Cycle

3.5 Fatty acid Synthetase

3.6 Isozyme

3.7 Glycolysis

3.8 Exonuclease

3.9 Glycogenolysis

3.10 Genetic code

3.11 Open reading frame

3.12 Deamination

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Q.4 Attempt any six out of the following eight questions. Answer of each question should be in 8 to 10 lines. **(6 x 6.0 = 36)**

4.1 Transamination

4.2 Why ammonia is toxic to animals? Explain.

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Donot write across this line

4.3 Malate Aspartate shuttle

4.4 Competitive and non-competitive enzyme inhibition

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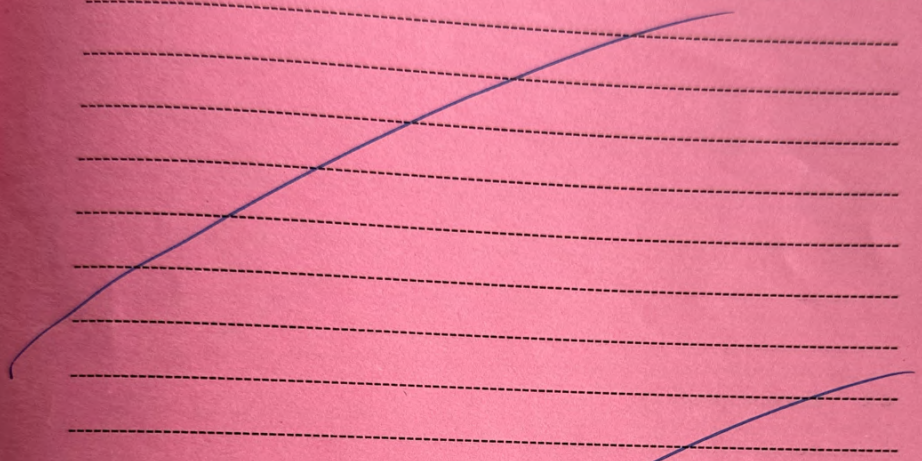
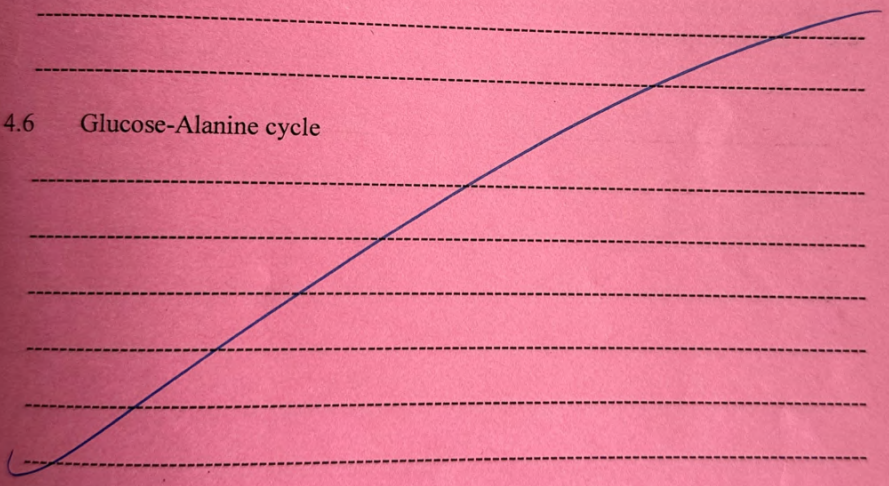
4.5 Salvage pathway for Purine synthesis



4.6 Glucose-Alanine cycle



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4.7 Ketolysis

4.8 Enzyme specificity

Q.5 Answer the following question in 1-2 pages (attempt any two). **(2x12.0 = 24)**

5.1 Write an account for DNA replication.

5.2 Define β- Oxidation of fatty acid. Describe in detail about β- Oxidation of 17 carbon saturated fatty acid with energy generation.

5.3 Write in details about different steps involved in TCA cycle with illustration along with its regulation. Why Kreb's cycle is amphibolic?