

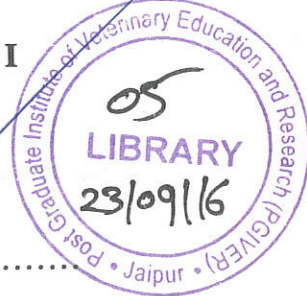
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Total Number of pages 20

**B.V.Sc. & A.H. (Part – I) Examination – 2016
of the Five-Year Degree Course**

VETERINARY BIOCHEMISTRY PAPER- I



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		Section B	
Q. No.	Marks	Q. No.	Marks
1.		6.	
2.		7.	
3.		8.	
4.		9.	
5.		10.	
Total		Total	

Total Marks obtained:

In figures: In words:

Signature of examiner:

INSTRUCTIONS TO THE CANDIDATES

1. The invigilator and the members of the Flying Squad are empowered to take search of the examinees during the examinations.
2. Candidate should read the question paper and the instructions carefully before they begin to write answers.
3. The candidate will not be allowed to leave the examination hall before one hour from the end of the examination time.
4. Write on the cover page all the required entries correctly and get the signature of the invigilators.
5. Write legibly in the space provided for answer of each questions/sub-questions according to instruction given in the question paper booklet (question paper).
6. Do not write your name on any part of the question paper / answer booklet.
7. Do not leave examination hall without handing over question paper / answer booklet to the invigilator incharge.
8. No leaves should be torn out of the question paper / answer booklet.
9. Candidate attempting to use unfair means or talking to one another will be dealt with severely as per unfair means rules.
10. No written paper or book notes etc. should be brought to examination hall.
11. Total number of pages of question paper / answer booklet be checked before writing.
12. Candidate should not bring in any article other than pens and admit card. Use of Mobiles, calculators on any other electronic device in the examination hall is strictly prohibited.

SPACE FOR ROUGH WORK

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**B.V.Sc. & A.H. (Part – I) Examination – 2016
of the Five-Year Degree Course**

VETERINARY BIOCHEMISTRY PAPER- I

Time: Three Hours

Maximum Marks: 60

Section A: General Veterinary Biochemistry: VPB- 112

Marks 30

Section B: Veterinary Intermediary Metabolism: VPB 122

Marks 30

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.

SECTION – A

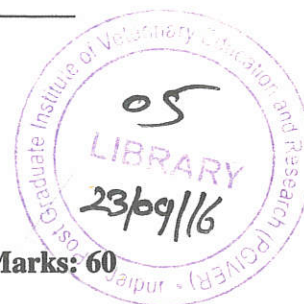
General Veterinary Biochemistry: VPB- 112

Maximum Marks 30

Q.1 Fill in the blanks.

(9x0.5 = 4.5)

- i) The increased UV absorbance by DNA upon denaturation is known as _____.
- ii) Precursor amino acid for Selenocysteine is _____.
- iii) _____ arm of t RNA serves as the recognition site for the enzyme (amino acyl t RNA synthetase) that adds the amino acid to the acceptor arm.
- iv) A loss of three dimensional structure of a protein sufficient to cause loss of function is called _____.
- v) Storage polysaccharide made by animals is _____.
- vi) A nucleoside consists of a nitrogen base linked to sugar by _____ bond.
- vii) Hydrolysis of lactate yields _____ and _____.
- viii) During vigorous exercise, pyruvate produced by glycolysis is converted to _____.



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: (9x0.5 = 4.5)

- i) The four subunits of haemoglobin gene represent protein's: ()
1. Primary structure
2. Secondary structure
3. Tertiary structure
4. Quaternary structure
- ii) Which one of the followings pair of amino acids is responsible for absorbance of light in ultraviolet region at wavelength of 280 nm: ()
1. Arginine and Histidine
2. Tyrosine and Tryptophan
3. Proline and Lysine
4. Cysteine and Methionine
- iii) Which one of the following amino acids is **NOT** involved in signal transduction: ()
1. Proline
2. Serine
3. Threonine
4. Tyrosine
- iv) Deoxycytidine is a: ()
1. Nucleoside
2. Nucleotide
3. Both of the above
4. None of the above
- v) The most active site of protein synthesis is: ()
1. Nucleus
2. Ribosome
3. Mitochondria
4. Cell sap
- vi) Fatty acids can be transported into and out of cell membrane by: ()
1. Active transport
2. Facilitated transport
3. Diffusion
4. Osmosis
- vii) Ribose and deoxyribose differ in structure around a single carbon namely: ()
1. C1
2. C2
3. C3
4. C4

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iii) The following nitrogenous base is absent in RNA ()

1. Thiamine
2. Guanine
3. Cytosine
4. Thymine

x) The amino acid commonly used as an ingredient in the buffers of SDS PAGE: ()

1. Aspartic acid
2. Glutamic acid
3. Glycine
4. Aspartic acid and lysine together

Q.3 Attempt any nine out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (9x1= 9)

i) Differentiate between prokaryotic and eukaryotic mRNA.

ii) Differentiate between symport and antiport transporter with example.

iii) Write the formulae (structure) for pentose sugars in RNA and DNA.

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iv) Discuss Chargaff's rules.

v) Glycogen:

vi) Prostaglandins:

vii) pH:

viii) Nucleoside:

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ix) Lipoproteins:



x) Buffer:

xi) How does hydroxylation of proline is linked to scurvy?

xii) Cholesterol acts as membrane fluidity regulator. Justify.

Q.4 Attempt any three out of the following four questions. Answer of each question should be in 5 to 8 lines. (3x2 = 6)

i) Write the important steps of DNA sequencing by dideoxy chain termination method.

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ii) Describe in brief the quaternary structure of protein.

iii) Differentiate between essential fatty acid and long chain fatty acid.

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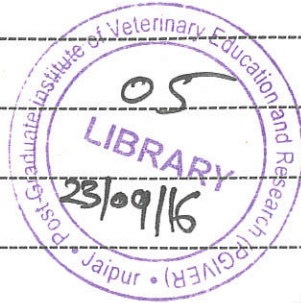
iv) Write short note on Bonds/ Forces involved in protein structure determination.

Q.5 Answer the following question in 1-2 pages (attempt any one). (1x6 = 6)

- i) Describe the classification of amino acids with suitable examples.
- ii) With the help of the labeled diagram explain the structure of a typical t RNA.
Also discuss the important functions of t RNA.



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SECTION - B

Veterinary Intermediary Metabolism: VPB 122

Maximum Marks 30

Q.6 Fill in the blanks.

(9x0.5 = 4.5)

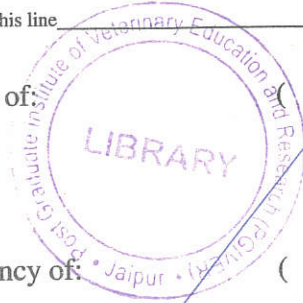
- i) Fruity/ sweet smell in breath during uncontrolled diabetes mellitus is due to _____.
- ii) The key enzyme involved in the regulation of fatty acid synthesis is _____.
- iii) In eukaryotes fatty acid breakdown occurs in _____.
- iv) Physiological uncoupling of oxidative phosphorylation occurs in brown fat of new born and hibernating animals is due to presence of a protein known as _____.
- v) _____ is the process of converting non- carbohydrate precursors to glucose or glycogen.
- vi) Goose-stepping gait in pigs occurs due to the deficiency of _____.
- vii) The enzyme for HMP shunt are located in the _____.
- viii) Selenium has been shown to destroy hydrogen peroxide and hydro peroxides via the enzyme _____, of which it is a co-factor.
- ix) White muscle disease in ruminants occurs due to the deficiency of _____.

Q.7 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: (9x0.5 = 4.5)

- i) Which purine is found in RNA? ()
1. Guanine
2. Cytosine
3. Uracil
4. Thymine
- ii) RNA is copied into complementary DNA by: ()
1. Taq DNA polymerase
2. RNA polymerase II
3. Reverse transcriptase
4. Uracil-N-Glycosylase

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- iii) Stiff lamb disease occurs due to the deficiency of: ()
1. Vitamin A
 2. Vitamin B
 3. Vitamin D
 4. Vitamin E
- iv) Curled Toe paralysis occurs due to the deficiency of: ()
1. Vitamin B1
 2. Vitamin B2
 3. Vitamin B5
 4. Both 1 and 3
- v) Which pathway produces the most ATP molecules: ()
1. Lactic acid fermentation
 2. The Krebs cycle
 3. The electron transport chain
 4. Glycolysis
- vi) Which of the following is provided by gall bladder that aids in transport of lipids across the intestinal membrane: ()
1. Lipases
 2. Cholesterol
 3. Proteins
 4. Bile salts
- vii) Which of the following is correct: ()
1. Transketolase are involved in transfer of 2 carbon units
 2. Transketolase are involved in transfer of 3 carbon units
 3. Transaldolase are involved in transfer of 2 carbon units
 4. Transketolase are involved in transfer of single carbon units
- viii) Amino acid leucine is: ()
1. Glycogenic
 2. Ketogenic
 3. Both glycogenic and ketogenic
 4. Lipogenic
- ix) The process of conversion of glycogen to glucose-6-phosphate is known as: ()
1. Glycolysis
 2. Glyconeogenesis
 3. Glycogenesis
 4. Glycogenolysis

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Q.8 Attempt any nine out of the following twelve questions. Answer of each question should be in 2 to 3 lines. (9x1= 9)

i) 2,3 BPG:

ii) FIGLU: alpha amino glutamic acid

iii) NADPH:

iv) Ketone bodies:

v) Functions of Biotin.

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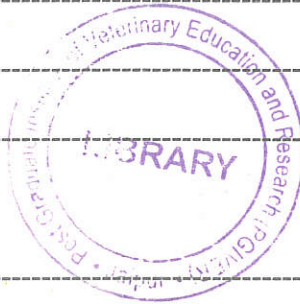
vi) Differential effect of epinephrine on liver versus muscle with respect to glycolysis.

vii) Differentiate between Fatty acid synthase I versus Fatty acid synthase II.

viii) Differentiate between White adipose tissue versus Brown adipose tissue.

ix) Katal:

x) Iso-enzymes:



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xi) Cytochromes:

xii) Phospholipids:

Q.9 Attempt any three out of the following four questions. Answer of each question should be in 5 to 8 lines. (3x2 = 6)

i) Write a short note on glyoxylate cycle and its significance.

ii) Discuss in brief the hormonal control of carbohydrate metabolism.

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iii) Bioenergetics of glycolysis and Krebs' cycle.



iv) Discuss the role of Vitamin B in TCA cycle.

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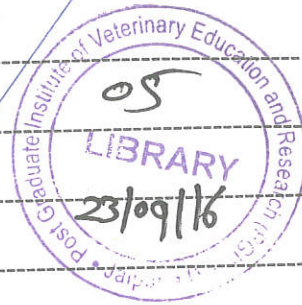
Q.10 Answer the following question in 1-2 pages (attempt any one). (1x6 = 6)

- i. Describe the semi conservative replication of DNA with the help of labeled diagram
- ii. With the help of the labeled diagram describe the DNA dependent RNA synthesis?

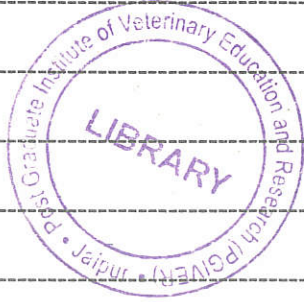
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Q. No.

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