अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय : जैव रसायन विषय कोड : पी.जी.बी.सी.एच Subject : Biochemistry Subject Code : PGBCH कोर्स शीर्षक : कोर्स कोड : पी.जी.बी.सी.एच-01 Course Title : Cell Biology & Biomolecules Course Code: PGBCH-01

> अधिकतम अंक : 30 Maximum Marks: 30

2016-2017

नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं ।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

खण्ड अ अधिकतम अंक : 18 Section-A Maximum Marks : 18

Q.No. 1: Sketch the prokaryotic and cukarytic cells Mention the salient differences 6 between these two cells.

Q.No. 2 Writes notes of following:

6

- (a) Endoplasmic reticulum: structure and function.
- (b) Chleroplastes and their importance.

Or

Define a carbohydrate. Classify carbohydrates and write one example of each class.

Q.No. 3: Describe the structure and function of hemoglobin.

6

Maximum Mark: 12

What are lipids? Classified lipids and write their functions with suitable example.

खण्ड ब अधिकतम अंक : 12

Section –B Note - Explain the Following

Q.No. 4 : Define an Enzymes and enumerate their general properties.

Or

Define Michalis- Menten equation and mention the significance of Michaelis-Menten Constant.

Q.No. 5 : Explain structure of donable stranded DNA.

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Q.No. 6 : Sketch structure of t-RNA and describe its functions.

3

Q.No. 7: Explain changes in properties of DNA after denaturation.

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उत्तर प्रदेश राजर्षि टण्डन मुक्त विश्वविद्यालय, इलाहाबाद $2\overline{016-2017}$

अधिन्यासँ (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) **Master of Science Programme (M.Sc.)**

विषय कोड : पी.जी.बी.सी.एच विषय : जैव रसायन

Subject Code: PGBCH Subject : Biochemistry कोर्स शीर्षक कोर्स कोड : पी.जी.बी.सी.एच-02

Course Code: PGBCH-02 **Course Title:** Analytical Biochemistry

> अधिकतम अंक : 30

Maximum Marks: 30

नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words.

Answer all questions. All questions are compulsory.

Q.No. 1: What is spectroscopy? Differentiate cdorimetry from uv-visible spectraphotometry.

Q.No. 2 Describe the principle, instrumentation and applications of HPLC.

Q.No. 3: Write the principle of centfugatio and varied application of different centrifuges.

खण्ड ब अधिकतम अंक : 12 Section -B Maximum Mark: 12 Note - Explain the Following

Q.No. 4: Write about aganosegel electrophoresis and its applications.

Q.No. 5: What is isoelectric focusing? Write its applications.

Q.No. 6: Explain density gradient centrifugation and its significance.

Q.No. 7: Discuss gel filtration chromatography and its applications.

अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय : जैव रसायन विषय कोड : पी.जी.बी.सी.एच Subject : Biochemistry Subject Code : PGBCH कोर्स शिर्षक : कोर्स कोड : पी.जी.बी.सी.एच-03 Course Title : Nutrition and physiology Course Code: PGBCH-03(N)/

> **PGBCH-04(O)** 31धिकतम अंक : 30 Maximum Marks: 30

2016-2017

नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

अधिकतम अंक : 18 खण्ड अ Maximum Marks: 18 Section-A Q.No. 1: Describe the Nature Occurrence, structure and biological importance of 6 vitamin A. Q.No. 2 Discuss the significance of hormones of adrenal Medulla. 6 Q.No. 3: Discuss the components of Immune System. 6 अधिकतम अंक : 12 खण्ड ब Maximum Mark: 12 Section -B Q.No. 4: Describe different types of viral vaccine. 3 Q.No. 5 : Give an account of β –Oxidation of fatty-acids. 3 Q.No. 6: Describe synaptic transmission. 3 Q.No. 7: Trechanism of action of cyclic AMP and the cascade effect. 3

अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय : जैव रसायन विषय कोड : पी.जी.बी.सी.एच Subject : Biochemistry Subject Code : PGBCH कोर्स शीर्षक : कोर्स कोड : पी.जी.बी.सी.एच-04 Course Title : Bioenergetics & Metabolism Course Code: PGBCH-04(N)/

PGBCH-05(O)अधिकतम अंक : 30Maximum Marks: 30

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 $20\overline{16-2017}$

नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं ।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

अधिकतम अंक : 18 खण्ड अ Section-A Maximum Marks: 18 Q.No. 1: Describe the mechanism of Oxidative Phosphorylation and ATP synthesis. 6 Q.No. 2 Explain the β –Oxidation of fatty-acids. 6 Q.No. 3: Discuss the interrelationship of the EMP, HMP and ED pathways. 6 अधिकतम अंक : 12 खण्ड ब Maximum Mark: 12 Section -B O.No. 4: Describe the functions of transferees. 3 Q.No. 5: Describe the structure and properties of Hemoglobin. 3 Q.No. 6: Discuss the biological importance of Nucleic Acids. 3

Q.No. 7: Describe the free energy changes in Oxidation- reduction reactions.

अधिन्यास (Assignment)

 $2\overline{016-2017}$

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परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय कोड : पी.जी.बी.सी.एच विषय : जैव रसायन **Subject Code: PGBCH Subject** : Biochemistry कोर्स शीर्षक कोर्स कोड : पी.जी.बी.सी.एच-06 Course Code: PGBCH-06(N) **Course Title: Advance Immunology** अधिकतम अंक : 30 Maximum Marks: 30 नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं । Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory. अधिकतम अंक : 18 खण्ड अ Maximum Marks: 18 Section-A Q.No. 1: Define Immunity. Differentiate innate immunity from acquired immunity 6 with suitable example. Q.No. 2 Describe MHC Class I and MHC class II proteins modeless and their 6 functions. Q.No. 3: Differentiate β —cells for T-cell write suitable example. 6 खण्ड ब अधिकतम अंक : 12 Section -B Maximum Mark: 12 Note - Explain the Following Q.No. 4: Define antibodies mention the different classes and their functions. 3

Q.No. 5 : Describe complement system and its role in immunity.

Q.No. 6 : Define a vaccine and write about its different types.

Q.No. 7: What is hypersensitivity? How is it treated.

अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय ः जैव रसायन विषय कोड ः पी.जी.बी.सी.एच

Subject : Biochemistry Subject Code : PGBCH

कोर्स शीर्षक : कोर्स कोड : पी.जी.बी.सी.एच-07 Course Title : Reserch Methodlogy Course Code: PGBCH-07(N)

> अधिकतम अंक : 30 Maximum Marks: 30

2016-2017

नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं ।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A खण्ड - अ

अधिकतम अंक : 18 Maximum Marks: 18

- Q. 1 what is research design? Also explain the significance of research?
- Q. 2. Distinguish between the following:
 - a) Random sampling & non-random sampling,
 - b) Condense level & significance level,
 - c) Point estimation & interval estimation,
- Q. 3. What do you mean by the power of hypothesis test, How can it be measured?

Section – B (खण्ड – ৰ)

अधिकतम अंक ः 12

Maximum Marks: 12

Note: Short Answer Question. Answer should be given in 200 to 300 words.
All questions are compulsory

Q. 4. A sample of 10 is drawn randomly from a certain population. The sum of the squared deviations from the mean of the given sample is 50. Test the population is 5 at 5% level of significance,

 X_{9}^{2} Give the Tab = 16.92

- Q. 5. Give the AMOVA Table for two ways classified data also state the basic assumption for ANOVA and ANCOVA,
- Q. 6. Discuss about the mann-cohithey V-lest,

अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय ः जैव रसायन विषय कोड ः पी.जी.बी.सी.एच

Subject : Biochemistry Subject Code : PGBCH कोर्स शीर्षक : कोर्स कोइ : पी.जी.बी.सी.एच-08

कोर्स शिर्षक : कोर्स कोड : पी.जी.बी.सी.एच-08 Course Title : Bio Statistics Course Code: PGBCH-08(N)

अधिकतम अंक ः 30

2016-2017

Maximum Marks: 30

नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं ।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A অড - अ

अधिकतम अंक : 18 Maximum Marks: 18

Q. 1 Calculate standred deviation from the following data:

C.I. 0-10 10-20 20-30 30-40 40-50 F 12 24 58 31 17

Q. 2. Calculate the value of correlation continent (Karl Pearson Correlation coettivent) form following data of two vadiables:

X: 68 72 56 75 58 80 Y: 52 49 39 60 55 42

Q. 3. Discuss about the "Test of Goodness of fit"?

Section – B (खण्ड – ৰ)

अधिकतम अंक ः 12 Maximum Marks: 12

Note: Short Answer Question. Answer should be given in 200 to 300 words. All questions are compulsory

- Q. 4. Write short note on:
 - a) Degree of freedom.
 - b) Level of significance.
 - c) Type I and Type II error,
- Q. 5. Discuss about the simple random sampling, also define its mean and variance?
- Q. 6. Discuss about the normal distribution, also density its distribution

अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय ः जैव रसायन विषय कोड ः पी.जी.बी.सी.एच

Subject : Biochemistry Subject Code : PGBCH

कोर्स शीर्षक : कोर्स कोड : पी.जी.बी.सी.एच-09

Course Title: Bio Informatic Course Code: PGBCH-09(N)

अधिकतम अंक : 30 Maximum Marks: 30

 $20\overline{16-2017}$

नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं ।

Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

Section – A অড - अ

अधिकतम अंक : 18 Maximum Marks: 18

Note: Long Answer Question. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

- 1. Discuss importance of bioinformatics studies in modern biology.
- 2. Classify biological databases.
- 3. Describe biological annotations and data curations.

SECTION 'B'

Minimum Marks: 12

Note: Short Answer Questions. Answer should be given in 200 to 300 words. All question are compulsory.

- 4. Briefly describe the following:-
 - (a) SCOP
 - (b) BLAST
 - (c) Molecular File Formats
 - (d) Molecular Phylogency

अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय ः जैव रसायन विषय कोड ः पी.जी.बी.सी.एच Subject : Biochemistry Subject Code : PGBCH कोर्स शीर्षक ः कोर्स कोड ः पी.जी.बी.सी.एच-10 Course Title : Microbiology & Immunology Course Code: PGBCH-10(N)/

PGBCH-07(O)

2016-2017

अधिकतम अंक : 30 Maximum Marks: 30

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नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं । Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

खण्ड अ अधिकतम अंक : 18 Section-A Maximum Marks: 18 O.No. 1: What is immunity? How immune response is induced? Write a note on 6 innate and acquired immunity. Q.No. 2 Explain the differences between prokaryotes and eukaryotes alongwith 6 suitable example. Q.No. 3: What is Bacteriophage? Describe lytic cycle of Bacterio phage TA. 6 अधिकतम अंक : 12 खण्ड ब Section -B Maximum Mark: 12 Q.No. 4 : Role of Microbes in Ecosystem. 3 Q.No. 5: Significance of Major Histocompatability complex (MHC) in the immune 3 response. Q.No. 6: (a) Primary and Secondary Immune Response. 3 (b) Grame^{+ve} and Grame^{-ve} Bacteria.

Q.No. 7: Food Borne Pathogenes.

अधिन्यासं (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय : जैव रसायन विषय कोड : पी.जी.बी.सी.एच Subject : Biochemistry Subject Code : PGBCH कोर्स शीर्षक : कोर्स कोड : पी.जी.बी.सी.एच-11 Course Title : Enzymology & Enzyme Technology Course Code: PGBCH-11(N)/

PGBCH-08(O)

2016-2017

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अधिकतम अंक : 30 Maximum Marks: 30

नोट : दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं । Note: Long Answer Questions. Answer should be given in 800 to 1000 words.

Answer all questions. All questions are compulsory. अधिकतम अंक : 18 खण्ड अ Maximum Marks: 18 Section-A Q.No. 1: What are enzymes? Describe the properties and sepceficity of enzyme. 6 Q.No. 2 Discuss enzyme Inhibition. 6 Q.No. 3: Describe different enzymes of diagnostic significance in clinical 6 significance. खण्ड ब अधिकतम अंक : 12 Maximum Mark: 12 Section -B Note - Explain the Following 3 Q.No. 4 : Carbonic Anhydrase Q.No. 5 : Allosteric Enzymes. 3

Q.No. 6: Mechanism of Enzyme Action.

Q.No. 7: Essential trace elements as enzyme Co-factors.

अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय ः जैव रसायन विषय कोड ः पी.जी.बी.सी.एच Subject : Biochemistry Subject Code : PGBCH कोर्स शीर्षक ः कोर्स कोड ः पी.जी.बी.सी.एच-12 Course Title : Basic Biotechnology Course Code: PGBCH-12(N)/

PGBCH-10(O)

2016-2017

अधिकतम अंक : 30 Maximum Marks: 30

3

3

3

नोट ः दीर्घ उत्तरीय प्रश्न । प्रश्नों के अपने उत्तर 800 से 1000 शब्दों में लिखें। सभी प्रश्न अनिवार्य हैं । Note: Long Answer Questions. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

अधिकतम अंक : 18 खण्ड अ Maximum Marks: 18 Section-A Q.No. 1: Describe the Gene Expression in Prokaryotes. 6 Q.No. 2 What is DNA- finger printing? Explain the process in detail. 6 Q.No. 3: Describe different techniques used for sequencing DNA molecules. 6 खण्ड ब अधिकतम अंक : 12 Maximum Mark: 12 Section -B Note - Describe the Following Q.No. 4 : Cloning Vectors 3

Q.No. 6: Role of Biotechnology in Pollution Central and Medicine.

Q.No. 5 : GM Foods

Q.No. 7: Transgenic Animals.

अधिन्यास (Assignment)

2016-2017

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परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय कोड : पी.जी.बी.सी.एच विषय : जैव रसायन **Subject Code: PGBCH** Subject : Biochemistry कोर्स शीर्षक कोर्स कोड : पी.जी.बी.सी.एच-13 **Course Title: Industrial Biochemistry** Course Code: PGBCH-13(N)/ **PGBCH-11(O)** अधिकतम अंक : 30 Maximum Marks: 30 Note: Long Answer Question. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory. अधिकतम अंक : 18 खण्ड अ Section-A Maximum Marks: 18 Q.No. 1: Describe the use of enzymes and micro- organisms in Industrial 6 Biochemistry. Q.No. 2 Give an account of production of wine, ethanol, beer and cheese in industry. 6 Q.No. 3: Discuss gene expression in the generation of gene mediated, industrial/ 6 Medical products. खण्ड ब अधिकतम अंक : 12 Section -B Maximum Mark: 12 Note - Explain the Following Q.No. 4: Enzymes used in baking and pharmaceutical industry. 3 Q.No. 5: Bacterial Growth Curve. 3 Q.No. 6: Production of Cyanocobalamine (Vitamin B₁₂) 3

Q.No. 7: Use of Micro-elements in Industrial Process.

अधिन्यास (Assignment)

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय : जैव रसायन विषय कोड : पी.जी.बी.सी.एच Subject : Biochemistry Subject Code : PGBCH

कोर्स शीर्षक ः कोर्स कोड ः पी.जी.बी.सी.एच-16

Course Title: Cognitive Science and Course Code: PGBCH-16(N)

Human Behaviour

अधिकतम अंक : 30 Maximum Marks: 30

2016-2017

Note: Long Answer Question. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

खण्ड अ अधिकतम अंक : 18 Section-A Maximum Marks : 18

Q.No. 1: Describe functional aspects of different regions of brain.

Q.No. 2 Describe biological cycle which help n cognitive performance of an individual.

Q.No. 3 : Discuss andtory perception and its relationship with human behavior.

खण्ड ब अधिकतम अंक : 12 Section –B Maximum Mark : 12

Note - Explain the Following

Q.No. 4: Write a note on everyday memory.

Q.No. 5 : Define cognitive failure.

Q.No. 6 : Describe effect of drugs on cognitive functions.

अधिन्यास (Assignment)

2016-2017

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय विषय कोड : पी.जी.बी.सी.एच : जैव रसायन **Subject Code: PGBCH Subject** : Biochemistry कोर्स शीर्षक कोर्स कोड : पी.जी.बी.सी.एच-17 **Course Title: Clinical Biochemistry Course Code: PGBCH-17(N)**

> अधिकतम अंक : 30 Maximum Marks: 30

> > 4

Note: Long Answer Question. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory.

अधिकतम अंक : 18 खण्ड अ Section-A Maximum Marks: 18

- Q.No. 1: Describe important electrolytes and their biological functions. How does 6 their importance lead to disease state?
- Q.No. 2 Describe inborn errors of metabolism. 6
- Q.No. 3: What are biological bnffurs which help in acid base balance? Comment of 6 utility of blood gas analysis in therapeutic management.

अधिकतम अंक : 12 खण्ड ब Section -B Maximum Mark: 12 Note - Explain the Following Q.No. 4: How do you differentiate between NIDDM and IDDM? 4

- Q.No. 5: Discuss liver functions tests and their importance.
- Q.No. 6: Enumerate proteins of the innate immure system and discuss their role in 4 diagnosis.

अधिन्यास (Assignment)

2016-2017

4

परस्नातक विज्ञान कार्यक्रम (एम.एस.सी.) Master of Science Programme (M.Sc.)

विषय : जैव रसायन विषय कोड : पी.जी.बी.सी.एच **Subject Code: PGBCH Subject** : Biochemistry कोर्स शीर्षक कोर्स कोड : पी.जी.बी.सी.एच-18 **Course Title: Neuro Science** Course Code: PGBCH-18(N) अधिकतम अंक : 30 Maximum Marks: 30 Note: Long Answer Question. Answer should be given in 800 to 1000 words. Answer all questions. All questions are compulsory. अधिकतम अंक : 18 खण्ड अ Maximum Marks: 18 Section-A Q.No. 1: Describe structure and function of various cells present in nervous system. 6 Q.No. 2: Discuss molecular processer involved in conduction of verve impulse. 6 Q.No. 3: Describe inhibitory and excitatory neurotransmitters. Discuss their 6 mechanism of action. अधिकतम अंक : 12 खण्ड ब Section -B Maximum Mark: 12 Note - Explain the Following Q.No. 4: Discuss importance of blood brain barrier. 4 Q.No. 5: Describe composition of cerebrospinal fluid. How does it helps in disease 4 diagnosis?

Q.No. 6: Describe role of photo transduction in physiology of vision.