Total No. of Questions : 6]

SEAT No. :

P2036

[Total No. of Pages : 2

[4924]-11

M.Sc. (Semester - I)

BIOCHEMISTRY

BCH - 170 : Biomolecules

(2008 & 2010 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to two sections should be written on separate answer books.***
3) ***Figures to the right indicate full marks.***
4) ***Draw neat labelled diagrams wherever necessary.***

SECTION - I

Q1) Attempt any three of following: **[15]**

a) What is ionization of water?

b) Draw structure of :

i) Lactose ii) Amylose iii) Fructose

c) Write note on miscelle formation.

d) Explain what are sugar acids.

e) Give significance of biological buffers. Enlist commonly used biological buffers.

Q2) Attempt any three of following: **[15]**

a) Explain classification of lipids.

b) Write note on riboflavin, its structure and role.

c) Differentiate and explain between reducing and non-reducing sugars.

d) Give one example of each of following with structure:

i) Disaccharide ii) Ketohespcose

iii) Glycerophospholipid iv) VLDL

v) Anomers

P.T.O.

Q3) Write notes on any two: **[10]**

a) Rancidity.

b) Classification of carbohydrates.

c) Fat soluble vitamins.

SECTION - II

Q4) Attempt any three of the following: **[15]**

a) Peptide bond shows 40% double bond character. Explain.

b) What are essential amino acids?

c) Draw labelled structure of B-pleated sheet.

d) Write note on edman's reaction.

e) Explain hierarchy of protein structure with examples.

Q5) Attempt any three of following: **[15]**

a) Write note on titration curves of amino acids.

b) Describe Ramchandran plot with its applications.

c) Write note on peptide synthesis.

d) Distinguish between α-helical and β-pleated structures.

Q6) Write notes on any two: **[10]**

a) Quaternary structure of proteins.

b) Forces stabilizing the structure of proteins.

c) Solid phase synthesis.

Total No. of Questions : 6]

SEAT No. :

P2037

[Total No. of Pages : 2

[4924]-12

M.Sc. (Semester - I)

BIOCHEMISTRY

BCH - 171 Enzymology and Biophysical Techniques

(2008 & 2010 Pattern)

Time : 3 Hour] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are cumpulsory.***

2) ***Answer to both sections should be written in seperate answer sheets.***

3) ***Figures to the right side indicate full marks.***

SECTION - I
(Enzymology)

Q1) Answer any three of the following: **[15]**

a) What is competitive inhibition.

b) How is the rate degradation (Kd) of enzyme measured?

c) Study of pre-steady state kinetics determens mechanism of enzyme catalysis. Explain.

d) How activation of trypsin from trypsinogen takes place.

Q2) Answer any three of the following: **[15]**

a) Explain the various conditions under which the enzymesubstrate complex is stabilized to determine mechanism of enzyme catalysis dry x-ray crystallography.

b) What is substrate cycle? Explain with suitable example.

c) What is positive co-operativity? Explain with example.

d) Modify Michaclis-Menten equation into line weaver-Burk equation and show effection inhelrtors on line weaver-Burk plat.

P.T.O.

Q3) Answer any two: **[10]**

a) How substrate cycle and interconvertible enzyme cycle controls the activity of an enzyme.

b) Why is Chymatrypsin most active at pH 8 explain its mechanism.

c) Give significance of enzyme inhibitors.

SECTION - II
(Biophysical Techniques)

Q4) Answer any three of following: **[15]**

a) How pulse field electrophoreces seperate DNA fragments?

b) Describe effect of pH and relatives orientation of neighboring chromophores on absorption properties of chromophore.

c) Write note on SDS-PAGF.

d) Explain Affinity chromatography.

Q5) Answer any three of following: **[15]**

a) How molecular weight of protein can be determined by get chromatography?

b) What physical characterestics of a biomolecule influence its rate of movement in an electrophoresis matrix?

c) Describe principle components of gas chromatography with labelled diagram.

d) What is finger-printing technique? Enlist its applications.

Q6) Answer any two: **[10]**

a) Enlist Applications & explain principle of dialysis.

b) How electrophoresis seperate protein based on molecular weight.

c) Describe applications of nitrocellulase filters in binding assay.

Total No. of Questions : 6]

SEAT No. :

P2038

[Total No. of Pages : 2

[4924]-13

M.Sc. (Semester - I)

BIOCHEMISTRY

BCH - 172 : Microbiology and Cell Biochemistry of Eukaryotes

(2008 & 2010 Pattern)

Time : 3 Hour] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Answer to the two sections should be written on seperate answer books.***
3) ***Figures to the right indicate full marks.***
4) ***Draw neat labelled diagrams wherever necessary.***

SECTION - I
(Microbiology)

Q1) Answer the following: (any three) **[15]**

a) What are micronutrients? Give its role.

b) Explain the principle and applications of phase contrast microscopy.

c) What is cold sterilization? Name any three chemicals used in sterilization.

d) What are steps in process of viral infection.

e) Write in short about animal viruses.

Q2) Explain any three of the following: **[15]**

a) Describe the nitrogen fixation mechanism.

b) Explain the structure of endospore.

c) Distinguish between SEM and TEM.

d) Define Growth in bacteria. Draw labelled bacterial growth curve.

e) Write note on preservation of pure culture.

P.T.O.

Q3) Write short notes on any two: **[10]**

a) Photoautotrophs.

b) Pasteurization.

c) Cholera toxin.

SECTION - II
(Cell Biochemistry of Eukaryotes)

Q4) Attempt any three of the following: **[15]**

a) Draw labelled diagram of the fluid mosiac model of plasma membrane.

b) Distinguish between prokaryotic & eukaryotic cell.

c) Explain meiosis & its stages.

d) Write note on role of collagen & elastin.

Q5) Attempt any three of following: **[15]**

a) Write note on cell variability and complexity.

b) Explain cell-cell communication in plants.

c) Write note on structure & functions of Golgi apparatus and peroxisoms in animal cell.

d) Write a note on marker enzymes.

Q6) Write note on any two of following: **[10]**

a) Density gradient centrifugation.

b) Organogenesis.

c) Extracellular matrix.

Total No. of Questions : 6]

SEAT No. :

P2039

[Total No. of Pages : 2

[4924]-21

M.Sc. (Semester - II)

BIOCHEMISTRY

BCH - 270 : Bioenergetics and Metabolism

(2008 & 2010 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***

2) ***Figures to the right side indicate full marks.***

Q1) Attempt any four of the following: **[20]**

a) Write a note on amphibolic nature of TCA cycle.

b) What are high energy compounds? Give examples.

c) Explan β-oxidation of unsaturated fatty Acid.

d) Discuss the chemiosmotic hypothesis.

e) Write a note on pyruvate dehydrogenase complex.

Q2) Answer any four of the following: **[20]**

a) Explain in detail C4 pathway.

b) Write a note on Gycogenolysis.

c) What is Hill reaction? Give its significance.

d) Describe the ketone bodies Formation.

e) Write a note on pasteur effect.

P.T.O.

Q3) Attempt any four of the following: **[20]**

a) Write a note on regulation of glycolysis.

b) Describe Guconeogenesis.

c) Elaborate in detail on Interconversion of hexoses.

d) How cholesterol is synthesised?

e) Distinguish between light and dark reaction.

Q4) Answer any four of the following: **[20]**

a) Explain biosynthesis of Glycogen & its regulation.

b) Discuss in detail electron transport chain.

c) Write a note on glyoxalate cycle.

d) Explain biosynthesis of triglyceuder.

e) What is fate of pyruvate in anaerobic condition.

Total No. of Questions : 6]

SEAT No. :

P2040

[Total No. of Pages : 2

[4924]-22

M.Sc.

BIOCHEMISTRY

BCH - 271 : Techniques for Characterization of Biomolecules

(2010 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***

2) ***Figures to the right indicate full marks.***

SECTION - I
(Biophysical Techniques)

Q1) Answer any three of the following: **[15]**

a) What are the factors that affect sedimentation velocity. Describe any one in detail.

b) What is quenching? List out the factors that are involved in quenching.

c) Write short note on density gradient centrifugation.

d) With the help of viscometry, how will you prove that certain substances can interculate between nucleotide bases of DNA?

Q2) Attempt any three of the following: **[15]**

a) Write a note on X-ray diffraction.

b) What are the applications of atomic absorption spectroscopy? Explain any two in brief.

c) Discuss the factors that affect the resolution of autoradiography.

d) How standard sedimentation coefficient is determined?

Q3) Write short notes on: (any two) **[10]**

a) Radiation used in biochemistry.

b) Pyenometer.

c) Gamma counters.

P.T.O.

SECTION - II
(Structure Determination of Biomolecules)

Q4) Answer any three of the following: **[15]**

a) Describe briefly the theory of NMR spectrometry what information can be obtained from NMR absorption peaks.

b) Explain the major application of biosensors in environmental pollution monitoring

c) Explain use of fluorescence spectroscopy in cell biology.

d) Discuss instrumental features of IR spectroscopy. Explain the application of IR spectra to biomolecules.

e) Give the principle and working of ESR.

Q5) Attempt any three of the following: **[15]**

a) Distinguish between CD and ORD.

b) Explain the instrumentation of GCMS.

c) Explain MALDI-MS and its matrix used.

d) Describe the theory of LCMS. Enumerate the application of LCMS.

e) Explain two biological application of fluorescence.

Q6) Answer any two of the following: **[10]**

a) Write short notes on:

i) MALDI-TOF-MS.

ii) Biosensors.

b) Give the instrumentation of LCMS.

c) Give the principle and working of NMR spectroscopy.

Total No. of Questions : 4]

SEAT No. :

P2041

[Total No. of Pages : 2

[4924]-23

M.Sc.

BIOCHEMISTRY

BCH - 273 Membrane Biochemistry & Genetics

(2008 & 2010 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***All questions carry equal marks.***
3) ***Figures to the right indicate full marks.***
4) ***Draw neat labelled diagrams wherever necessary.***

Q1) Attempt any four of the following: **[20]**

a) Discuss the protein lipid interaction in a biological membrane.

b) Describe the assembly of a virus membrane receptor.

c) Write a note on receptor mediated endocytosis.

d) Give a detailed structure of double helix DNA.

e) What is passive transport? How does it differ from active transport.

Q2) Attempt any four of the following: **[20]**

a) Describe ligand gated channels.

b) Write a note on Tetrad Analysis. Why are they called specialized genetic systems of fungi.

c) Describe the modes of penetration of antimicrobial agents with suitable examples.

d) Give the specialised mechanism of transport of macromolecules.

e) Write a note of Auxotrophs. What is their application?

P.T.O.

Q3) Attempt any four of the following: **[20]**

a) What is semiconservative mechanism of DNA replication?

b) Discuss the concept of one gene-one cistron with a suitable example.

c) Write a note on ATP-ADP exchanger system.

d) Draw a neat labelled diagram of a biological membrane.

e) Discuss the Mendelian laws of inheritance.

Q4) Attempt any four of the following: **[20]**

a) What is the genetic code? Why do we say it is universal and degenerate?

b) Discuss the use of bacterial viruses in genetic studies.

c) Describe nuclear pores with a suitable diagram.

d) Write a short note on A,B and Z types of DNA.

e) Discuss the molecular mechanism & role of valinomycin and gramicidin.

Total No. of Questions : 6]

SEAT No. :

P2042

[Total No. of Pages : 2

[4924]-31

M.Sc. (Semester - III)

BIOCHEMISTRY

BCH - 370 : Molecular Biology

(2010 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***

2) ***Figures to the right indicate full marks.***

Q1) Answer any three of the following: **[15]**

a) Explain prokaryotic transcription process.

b) What are the mechanism of degradation of protein.

c) Write a note on mRNA splicing.

d) How eukaryotic DNA are packed inside nucleus.

Q2) Answer any three of the following: **[15]**

a) Write a note on capping and tailing of mRNA.

b) Explain DNA polymerase I,II and III.

c) Explain mobile genetic elements with an example.

d) Explain Holliday junction model.

Q3) Answer any three of the following: **[15]**

a) Explain prokaryotic translational process.

b) Write a note on inhibitor of transcriptional.

c) How pyrimidine dimer are repaired during DNA repair process.

d) Write a note on targetting of protein to WER.

P.T.O.

Q4) Answer <u>any three</u> of the following: **[15]**

a) Write a note on retroviruses.

b) Explain mismatch repair mechanism.

c) Explain the difference between transcription and replication.

d) Write in brief about Ames test and its uses.

Q5) Answer <u>any two</u> of the following: **[10]**

a) Write a note on prokaryotic RNA polymerase.

b) Give the role of helicase and ligase in replication.

c) Explain mitochondrial transportation of protein.

Q6) Answer <u>any two</u> of the following: **[10]**

a) Explain protein targeting to nucleus.

b) Explain role of different enzymes in homologous recombination.

c) Write a note on signal hypothesis in protein targeting.

Total No. of Questions : 6]

SEAT No. :

P2043

[Total No. of Pages : 2

[4924]-32

M.Sc. (Semester - III)

BIOCHEMISTRY

BCH - 371 Medical Biochemistry and Immunology

(2010 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Answers to the two sections should be written in separate answer sheet.***

SECTION - I

(Medical Biochemistry)

Q1) Answer any three of the following: **[15]**

a) Elaborate on the role of iso enzymes in the diagnosis of heart diseases.

b) Discuss the role of clotting factors involved in thrombus formation.

c) Explain the biochemical basis of sickle Cell Anaemia.

d) Elaborate on causative agents that lead to carcinogenesis.

Q2) Answer any three of the following: **[15]**

a) Define the term analgesics. Give their mechanism of action with suitable example.

b) Elaborate on types of Influenza.

c) Discuss the mechanism of action of streptomycin and tetracycline.

d) Write the normal composition of CSF and list out two abnormal components that are seen in CSF during pathological condition.

Q3) Write notes on any two of the following: **[10]**

a) Apoplosis.

b) Hydrolytic enzyme of lysosomes.

c) LSD.

P.T.O.

SECTION - II
(Immunology)

Q4) Answer any three of the following: **[15]**

a) Elaborate on primary and secondary lymphoid organs and their significance with neat diagram.

b) Write an account of general structure of immunoglobin molecule with reference to Ig G molecule.

c) Elaborate on steps involved in producing monoclonal antibodies.

d) What are live and attenuated vaccines? Explain the principle of vaccination.

Q5) Answer any three of the following: **[15]**

a) List out some examples of auto immune disease. Explain the mechanism of development of auto immunity.

b) Differentiate between competitive ELISA and sand which ELISA. List out the advantages of ELISA technique over RIA.

c) Write a note on blood group substances.

d) Elaborate on the cascade of proteolytic reaction that leads to activation of complement system.

Q6) Answer any two of the following: **[10]**

a) Write a note on innovate immunity and acquired immunity.

b) Give the appropriate meaning of the following terms:

i) Antigenecity ii) Haphen

iii) Specificity iv) Carrier

v) Complete antigen

c) Classify immuno diffusion techniques and elaborate on the procedure of any one.

Total No. of Questions : 4]

SEAT No. :

P2044

[Total No. of Pages : 2

[4924]-33

M.Sc.

BIOCHEMISTRY

BCH - 372 Neurochemistry

(2010 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right side indicate full marks.***
3) ***Draw neat labelled diagrams wherever necessary.***

Q1) Answer any four of the following: **[20]**

a) How neural protein mediate physiological and biochemical response?

b) Which environmental factor affect the development of CNS.

c) Explain the mode of action of catecolamines.

d) Explain the mechanism proposed for short term and long-term memory.

e) Write a note on biochemistry of taste.

Q2) Attempt any two of the following: **[20]**

a) Describe in detail the central nervous system.

b) Explain the role of voltage gated ion channels in generation of action potential.

c) Define and explain membrane potential, resting potential, depolarization, repolarization and hyperpolarization.

P.T.O.

Q3) Answer any <u>two</u> of the following: **[20]**

a) Describe the synthesis, storage, uptake, degradation and action of acetylcholine.

b) Discuss the steps involved in transmission of neurotransmitter.

c) What are touch receptors? Explain the structure & mechanism of signal transduction.

Q4) Write short notes on: (Any four) **[20]**

a) Cerebrospinal fluid.

b) Blood-brain barrier.

c) Sensory modalities and sensory circuits.

d) GABA receptor.

e) Spinal cord.

f) Neuron.

Total No. of Questions : 6]

SEAT No. :

P2045

[Total No. of Pages : 2

[4924]-34

M.Sc.

BIOCHEMISTRY

BCH - 373 Biochemical Toxicology

(2010 Pattern)

Time : 3 Hour] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Neat labelled diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***

Q1) Answer any three of the following: **[15]**

a) What do you understand by the term toxicity and chronic toxicity? How are they evaluated.

b) Explain how teratagenic potential of chemicals is screened.

c) How soil and water pollutants are degraded.

d) Explain with suitable example the process of bioactivation.

Q2) Attempt any three of the following: **[15]**

a) What are toxic effects of alcohal and methanal.

b) Explain mechanism of xenobiatic metabolism catalized by glutathion-s-transferals.

c) Discuss the biochemical reactions envalud in benzene biotransformation.

d) Distinguish between:

i) Immediate and delayed toxicity.

ii) Venomous and paisonous animals.

Q3) Attempt any three of the following: **[15]**

a) Explain mechanism of cell injury caused by toxicant.

b) Discuss with example the antagoncetic effects.

c) What are toxic effects caused by SO_2 and O_3.

d) What is the averal impact of DDT an ecosystem.

P.T.O.

Q4) Attempt any three of the following: **[15]**

a) Explain biotransformation pathway of benzene leading to cellular injury.

b) Which experiments are performed to build up toxicatocal profile of chemicals.

c) What are the toxic effects of DDT? Explain the pathogenesis effects of three.

d) Explain mechanism of reaction catalyzed by arganophosphrous insecticide in toxication.

Q5) Answer any two of the following: **[10]**

a) Distinguish between:

i) Immediate and delayed toxicity.

ii) Reversible and irreversible toxicity.

b) Give forensic applications of toxicity.

c) Biologic diversity plays important role in selective toxicity of toxicants. Explain.

Q6) Answer any two: **[10]**

a) Explain mechanism of epoide hydrolase during Renobiotic biotransformation.

b) What are components of snake venom.

c) What do you understand by the terms safety and risk? Under which circumstances the risk is taken.

Total No. of Questions : 6]

SEAT No. :

P2046

[Total No. of Pages : 3

[4924]-41

M.Sc.

BIOCHEMISTRY

BCH - 470 : Biochemical Endocrinology and Plant Biochemistry

(2008 & 2010 Pattern)

Time : 3 Hours] *[Max. Marks : 80*

Instructions to the candidates:

1) ***Answer to both the sections should be written on separate answer sheets.***
2) ***Attempt any two questions from section I.***
3) ***Draw figures wherever necessary.***
4) ***Figures to the right indicate full marks.***

SECTION - I

(Biochemical Endocrinology)

Q1) Answer the following: **[20]**

a) What are the hormones secreted by the adrenal cortex? What are their respective functions.

b) Discuss the endocrinological regulation of calcium.

c) Describe the regulation of secretion of ADH secretion.

d) What are thyroid hormones? Explain the biochemical effect of thyroid hormones.

Q2) Attempt the following: **[20]**

a) Why do only certain organs respond to the presence of a specific hormone?

b) What is the significance of altering kinase activity in target cells.

c) What are prostaglandins? Write note on their biological functions.

d) What are the functions of FSH and LH? Explain the role of these hormone on uterine & ovarian cycles.

P.T.O.

Q3) Answer the following: **[20]**

a) Distinguish between type-I diabetes and type-II diabetes. How are they treated?

b) Write a note on gastro-intestinal hormones.

c) How does the endocrine system work with other body system, such as nervous system and the circulatory system?

d) Explain the hormonal inter-relationship with suitable example.

SECTION - II

(Tissue Culture (Old))

Q4) Answer any three: **[15]**

a) What are the basic requirement of media used in PTC.

b) Explain the principle and working of ideal PTC laboratory.

c) Describe the somatic cell hybridization technique.

d) Explain the importance of secondary metabolites.

e) Explain somatic embryogenesis.

Q5) Answer the following: (any three) **[15]**

a) What is cell lines? Give its application.

b) Describe the various methods of cell preservation.

c) Give the characteristics of transformed cell.

d) What is synthetic media? Give its advantages and disadvantage with suitable, example.

e) Describe the preparation of media and sherilization technique used in ATC.

Q6) Write short notes on (any two): **[10]**

a) Tissue banking.

b) Callus culture.

c) Micro propagation.

SECTION - II
(Plant Biochemistry)

Q4) Answer any three of the following: **[15]**

a) Function of cytokinin.

b) Role of iron and manganese on plant growth.

c) C4 Pathway.

d) Biosynthesis of starch.

e) Oxygenase activity of Rubisco.

Q5) Explain the following: (any three) **[15]**

a) Cryopreservation.

b) Flavonoids.

c) Isolation of protoplast.

d) Nitrogenase system.

e) Role of nitrogen as plant nutrient.

Q6) Write notes on (any two): **[10]**

a) Alkaloids.

b) Preparation of explants.

c) Z-scheme of photosynthesis.

Total No. of Questions : 4] **SEAT No. :**

P2047 **[Total No. of Pages : 2**

[4924]-42

M.Sc.

BIOCHEMISTRY

BCH - 472 Genetic Engineering

(2008 & 2010 Pattern)

Time : 3 Hours] ***[Max. Marks : 80***

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right side indicate full marks.***

Q1) Answer any four of following: **[20]**

a) Write principle of PCR. Give types of PCR.

b) Write note on Micrarray technology.

c) Give structure M13 bacteriophage vector.

d) Give applications of northern blotting.

e) Write note on recombinant proteins production.

Q2) Answer any four of following: **[20]**

a) Give the strategies used for producing herbicide resistant trangenic plant.

b) Discuss features of a good vector. Explain cosmids and YAC vectors.

c) Write note on "role of restriction enzymes in genetic engineering". Give any two restriction enzymes with their restriction sites.

d) Discuss RNAi technology and its application.

e) Write note on S1 nuclease mapping and its application.

P.T.O.

Q3) Attempt any four: **[20]**

a) Explain transformation with reference to bacteria in detail.

b) Explain methods of C DNA sequencing.

c) Write an account of eukaryotic expression vectors.

d) Enlist different applications of RFLP techniques with reference to medicine.

e) Write note on different applications of protein engineering.

Q4) Write notes on any four of following: **[20]**

a) pBR322.

b) Southern blotting.

c) Recombinant Hormones.

d) Animal cell transfection.

e) Blue-White screening.

Total No. of Questions : 6]

SEAT No. :

P2048

[Total No. of Pages : 2

[4924]-43

M.Sc. (Semester - IV)

BIOCHEMISTRY

BCH - 471 Fermentation and Food Technology

(2010 Pattern)

Time : 3 Hour] *[Max. Marks : 80*

Instructions to the candidates:

1) ***All questions are compulsory.***
2) ***Figures to the right indicate full marks.***
3) ***Answer to both the two section should be written in separate answer sheet.***

SECTION - I

(Fermentation Technology)

Q1) Answer any three question from the following: **[15]**

a) Differentiate between batch and continuous culture and which method is best for fermentation.

b) What is meant by media formulation.

c) How filteration is used in product recovery.

d) What should be the characteristics of industrially important micro-organism.

e) What is meant by fedbatch culture.

Q2) Attempt any three question: **[15]**

a) Explain the application of fermentation.

b) Role of agilation and aeration in fermentation.

c) Write a note on development of inoculum for bacterial processes.

d) How will you proceed for isolation of auxotrophic mutants.

e) What are the different types of inhibitors in fermentation.

P.T.O.

Q3) Answer any two question: **[10]**

a) Write short note on:

i) Nitrogen source in fermentation.

ii) Effect of inducer on fermentation.

b) Explain development of inoculum for yeart processes.

c) What are the different methods for strain improvements.

SECTION - II
(Food Technology)

Q4) Answer any three of the following: **[15]**

a) How will you analyse food from its quality.

b) Write a note on single cell protein.

c) What do you mean by primary foodstock.

d) Explain the manufacturing of natural and synthetic sugar.

e) Write a note on different food additives.

Q5) Attempt any three of the following: **[15]**

a) What are the different enzymes used in food processing.

b) Differentiate the features of foods obtained from plant and animal origin.

c) Write the principle of food preservation.

d) What are the flavoring agent. Explain.

e) How will you procesed for starch production.

Q6) Answer any one of the following: **[10]**

a) Explain how food in modified of enetically.

b) Explain the different chemical changes occuring in food spoilage.

c) Explain the different enzymes used for neat ten dezization.