

Second Semester B.Sc., Degree Examinations

September / October 2022

(CBCS NEP Scheme)

MICROBIOLOGY

NSB 0300 : Microbial Biochemistry and Physiology

Time: 2 hrs.]

[Max.Marks:60

SECTION - A

1. *Select the most appropriate answer from the options provided : 10X 1= 10 Marks*

- i. The most predominant chemical constituent of life is
 - a) Water
 - b) Protein
 - c) Lipid
 - d) Carbohydrate
- ii. The pH can be kept constant with the help of _____
 - a) Saturated solution
 - b) unsaturated solution
 - c) buffer solution
 - d) Non - saturated solution
- iii. Proteins are the polymers of _____
 - a) L - α aminoacids
 - b) D - α - amino acids
 - c) L - β - aminoacids
 - d) D- β - aminoacids
- iv. Which is a fat soluble vitamin
 - a) Vitamin B
 - b) Vitamin K
 - c) Vitamin B₁₂
 - d) Vitamin C
- v. Lag phase is also known as _____
 - a) Period of initial adjustment
 - b) Transitional period
 - c) Generation time
 - d) Period of rapid growth
- vi. Which of the following is used to grow bacterial culture continuously _____
 - a) Chemostat
 - b) Hemosat
 - c) Coulter - counter
 - d) Turbidostat
- vii. Name the type of bacteria which uses CO₂ as a sole source of carbon for growth.
 - a) Orgonotrophs
 - b) Heterotrophs
 - c) Autotrophs
 - d) Lithotrophs

Contd...2

- viii. In the phospholipid bilayer which ways do the non-polar tail face ?
- a) Towards the interior
 - b) Towards the exterior
 - c) The directions are scattered
 - d) No tail exist in the phospholipid bilayer
- ix. Quorum sensing is used by bacterial cells to determine _____
- a) The size of the population
 - b) The availability of nutrient
 - c) The speed of water flow
 - d) The density of population
- x. Oxidative phosphorylation results in the formation of _____
- a) Oxygen
 - b) ADP
 - c) ATP + H₂O
 - d) NADH

SECTION - B

Write short notes on any FIVE of the following. :

5X 3= 15 Marks

- 2. Explain structure and properties of water molecule.
- 3. Properties of aminoacids.
- 4. Membrane filtration method.
- 5. Classification of microbes based on carbon source
- 6. Properties and importance of hemoglobin
- 7. Bonding properties of carbon
- 8. Laws of thermodynamics
- 9. Schematic representation of non – cyclic photophosphorylation

SECTION - C

Answer any THREE questions from the following.

3X 5= 15 Marks

- 10. Importance of Vitamin
- 11. Define proteins classify them with suitable examples.
- 12. Micronutrients
- 13. Factors influencing microbial growth
- 14. Explain the electron transport chain

SECTION - D

Answer the following:

2X 10= 20 Marks

15. a) Define Growth. Explain different phases of growth.

OR

b) Describe Calvin cycle.

16. a) Discuss the uptake of nutrients by active transport.

OR

b) Define carbohydrate. Explain structure, classification and properties of carbohydrates.

Third Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme) (New Syllabus 2017-18 onwards)

MICROBIOLOGY

SSC 800 : Paper III : Microbiological Techniques and Instrumentation Part - II

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. **Multiple choice questions :**
Select and write the correct answer.

5X1= 5Marks

1. Pellicle growth refers to _____
a) Surface growth b) Sediment
c) Median growth d) All of the above
2. Example for size exclusion chromatography is _____
a) Gel filtration b) Ion exchange
c) Paper chromatography d) HPLC
3. Separation of DNA can be accomplished by using _____
a) Gas chromatography b) HPLC c) Electrophoresis d) TLC
4. Liquid nitrogen storage is otherwise called as _____
a) Lyophilization b) Oil overlay method
c) Cryopreservation d) All of the above
5. Transmittance inversely proportional to _____ according to Beer's law.
a) Absorbance b) Refraction
c) Transmittance d) Deviation

SECTION - B

II. **Simple Answer questions :**

5X1= 5 Marks

Answer in a word or phrase or a sentence.

6. Lyophilization
7. SPC

Contd...2

8. Capnophiles
9. RCF
10. Agarose

SECTION - C

III. Short Answer questions :

4X 5= 20Marks

Answer any FOUR of the following.

11. Principle of sedimentation
12. Applications of spectrophotometry
13. Streak plate technique and its advantages
14. Drauxic growth
15. Gas pack
16. Ion exchange chromatography

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Describe the principle and technique of column chromatography
18. Explain the effect of temperature and pH on the microbial growth
19. Write notes on :
 - a) Chemostat
 - b) Candle Jar Techniques

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Q.P. Code No. 15331

Third Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme) (New Syllabus 2017-18 onwards)

MICROBIOLOGY

SSC 800 : Paper III : Microbiological Techniques and Instrumentation Part - II

[Max.Marks:50

Time: 3 hrs.]

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

5X1= 5Marks

I. Multiple choice questions :

Select and write the correct answer.

1. A culture that consists of only one type of organism is _____
 - a) Dual culture
 - b) Mixed culture
 - c) Axenic culture
 - d) Broth culture
2. In rate zonal centrifugation, the particles are separated based on _____
 - a) Size
 - b) Shape
 - c) Both size and shape
 - d) Density
3. The bacteria that prefer low pH and high temperature for growth are _____
 - a) Thermophiles
 - b) Acidophiles
 - c) Thermoacidophiles
 - d) Thermoalkaiophiles
4. _____ developed chromatography
 - a) Ruska
 - b) Tswett
 - c) Lister
 - d) Pasteur
5. Viable count of bacteria is obtained by _____
 - a) Coulter Counter
 - b) Plate count
 - c) DMC
 - d) Turbidometric method

SECTION - B

5X 1= 5 Marks

II. Simple Answer questions :

Answer in a word or phrase or a sentence.

6. Candle Jar

Contd...2

7. Halophiles
8. DMC
9. Monochromator
10. PAGE

SECTION - C

III. Short Answer questions :

4X 5= 20Marks

Answer any FOUR of the following.

11. Cryopreservation
12. Effect of oxygen on growth
13. Principle and applications of Agarose gel electrophoresis
14. Diauxic growth
15. Types of centrifuges
16. Principle and applications of Thin layer chromatography

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Define growth. Explain bacterial growth curve
18. Explain principle, construction and applications of spectrophotometer
19. Write short notes on :
 - a) Gas Pak
 - b) Isopycnic centrifugation

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7. Slant culture
8. Lag phase
9. Curette
10. RCF

SECTION - C

III. Short Answer questions :

4X 5= 20 Marks

Answer any FOUR of the following.

11. Gas pak
12. Diauxic growth
13. SPC
14. Preservation of microbial cultures in liquid nitrogen
15. Gel permeation chromatography
16. Nephelometer

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Explain the influence of Temp and pH on microbial growth.
18. Explain the principle, technique and application of differential centrifugation.
19. Write a note on:
 - a) Ascending paper chromatography
 - b) Spread plate technique

Fourth Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme & New Syllabus 2017-18)

MICROBIOLOGY

SSD800 : Paper IV: Microbial Physiology and Genetics

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. Multiple choice questions :

5X 1= 5 Marks

Select and write the correct answer.

1. Amino acid detection is done by
 - a) Molisch's test
 - b) Benedict's test
 - c) Fehlings test
 - d) Ninhydrine test
2. _____ bonds are high energy bonds that connects the phosphates in the ATP.
 - a) Phosphoanhydrate
 - b) Ionic
 - c) Chemical
 - d) Hydrogen
3. Ferredoxin is a component of _____
 - a) P680
 - b) Photosystem I
 - c) Photosystem II
 - d) Hill reaction
4. _____ is also called as jumping genes
 - a) Transposons
 - b) Codon
 - c) Exons
 - d) Introns
5. R - plasmids have _____
 - a) Fertilization factor
 - b) Virulence factor
 - c) Col - factor
 - d) Antibiotic resistance

Contd...2

SECTION - B

II. Simple Answer questions :

Answer in a word phrase or a sentence.

5X 1= 5 Marks

6. pBR - 322
7. Lytic cycle
8. tRNA
9. Chromatophores
10. Transferases

SECTION - C

III. Short Answer questions :

Answer any FOUR of the following.

4X 5= 20 Marks

11. Factors influencing enzyme activity.
12. Structure of ATP.
13. Bacteriophages as genetic vectors
14. Morphological structure of Prokaryotic Chromosome
15. Non-cyclic Photophosphorylation
16. Point mutation

SECTION - D

IV. Long Answer questions :

Answer any TWO of the following.

2X 10= 20 Marks

17. Describe Glycolysis
18. Explain the genetic code
19. Write note on :
 - a) Bacterial conjugation
 - b) Importance of carbohydrates

Fourth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & New Syllabus 2017-18)

MICROBIOLOGY

SSD800 : Paper IV: Microbial Physiology and Genetics

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

5X 1= 5 Marks

I. Multiple choice questions :

Select and write the correct answer.

1. _____ factor is not responsible for the denaturation of proteins
 - a) Heat
 - b) Charge
 - c) pH change
 - d) Organic solvents
2. _____ is produced with the combination of Apoenzyme and co-enzyme.
 - a) Holoenzyme
 - b) Enzyme substrate complex
 - c) Prosthetic group
 - d) Enzyme product complex
3. The study of energy relationships and conversions in biological system is called _____.
 - a) Biophysics
 - b) Biotechnology
 - c) Bioenergetics
 - d) Microbiology
4. Photosynthesis is a _____ process
 - a) Catebolic
 - b) Anabolic
 - c) Exothermic
 - d) Metabolic
5. Restriction enzymes are also called as _____.
 - a) Molecular glues
 - b) Molecular stitchers
 - c) Molecular scissors
 - d) Polymerases

Contd...2

SECTION - B

II. *Simple Answer questions :*
Answer in a word phrase or a sentence.

5X 1= 5 Marks

6. Ligases
7. Lysogenic cycle
8. B - DNA
9. Hfr strain
10. GEAC

SECTION - C

III. *Short Answer questions :*

4X 5= 20 Marks

Answer any FOUR of the following.

11. Inhibition of enzyme action
12. Entropy and free energy
13. Plasmid vectors
14. Structure of eukaryotic chromosome
15. Cyclic photophosphorylation
16. Spontaneous mutation

SECTION - D

IV. *Long Answer questions :*

2X 10= 20 Marks

Answer any TWO of the following.

17. Explain the electron transport chain.
18. Describe the transcription during protein synthesis
19. Write note on :
 - a) Transformation
 - b) Importance of lipids

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Fourth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & Old Syllabus 2011-12 Onwards)

MICROBIOLOGY

SSD800 : Paper IV: Microbial Physiology and Genetics

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. Multiple choice questions :

5X 1= 5 Marks

Select and write the correct answer.

1. Induced fit theory was proposed by _____
a) Koshland b) Fischer
c) Koch d) All the above
2. The process of gradual decline into disorder is called _____
a) Entropy b) Free energy
c) Enthalpy d) None of these
3. _____ is involved in conjugation
a) Cell free DNA b) Bacteriophage
c) Pilus d) All the above
4. An example for cloning vector is _____
a) Phage b) Plasmid
c) Cosmid d) All the above
5. Lac operon concept was proposed by _____
a) Jacob and Monad b) Watson and Crick
c) Hershey and Chase d) None of these

SECTION - B

II. Simple Answer questions :

5X 1= 5 Marks

Answer in a word phrase or a sentence.

6. Prosthetic group

Contd...4

7. Enthalpy
8. Kornberg enzyme
9. Palindrome
10. Anticodon

SECTION - C

III. Short Answer questions :

4X 5= 20 Marks

Answer any FOUR of the following.

11. Characteristics of genetic code
12. Composition of enzymes
13. Restriction enzymes
14. Anoxygenic photosynthesis
15. Induced mutation
16. ATP as high energy compound

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Explain different types of DNA.
18. Describe Kreb's cycle
19. Write note on :
 - a) Pros and Cons of genetic engineering
 - b) Steps in Transformation

Fifth Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme) 2017-18 Onwards

MICROBIOLOGY

SSE800 : Paper V: Environmental Microbiology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. Multiple choice questions :

5X 1= 5Marks

Select and write the correct answer.

1. An example for nitrifying bacteria is _____
a) Glomus b) Frankia c) Gigaspora d) Nitrosomonas
2. _____ is a non -volumetric air sampler
a) Anderson sampler b) Hirst trap
c) Rotorod sampler d) Vertical cylinder trap
3. Rice water stool is a symptom of _____
a) Cholera b) Diphtheria
c) Aspergillosis d) Typhoid
4. Zoogloal layer is formed in _____
a) Activated sludge process b) Septic tank
c) Imhoff tank d) Trickling filter
5. Microbes exhibit antagonism through the production of _____.
a) Hormones
b) Amino acids
c) Vitamins
d) Antibiotics

Contd...2

II. *Simple Answer questions :*

5X 1= 5Marks

Answer in a word phrase or a sentence.

6. Aspergillosis
7. Parasitism
8. VAM
9. MPN
10. Oxidation pond

SECTION - C

III. *Short Answer questions :*

4X 5= 20 Marks

Answer any FOUR of the following.

11. COD
12. Rhizosphere microorganisms
13. Significance of microorganisms in air
14. Characteristics of indicator organisms
15. Influenza
16. Commensalism

SECTION - D

IV. *Long Answer questions :*

2X 10= 20 Marks

Answer any TWO of the following.

17. Define biogeochemical cycle. Explain the role of microbes in carbon cycle.
18. Define air sampler. Add a note on Anderson sampler and Burkard sampler
19. Write note on :
 - a) Slow sand filter
 - b) Septic tank

Fifth Semester B.Sc., Degree Examinations

September / October 2022

(Semester Scheme 2017-18 Onwards)

MICROBIOLOGY

SSE801 : Paper VI: Agricultural Microbiology and Biotechnology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION – A

I. Multiple choice questions :

5X 1= 5Marks

Select and write the correct answer.

1. Downy mildew of grapes is caused by _____
a) TMV
b) *Cercospora personata*
c) *Mycoplasma mycoides*
d) *Plasmopara viticola*
2. _____ is an associative symbiotic nitrogen fixing bacteria
a) *Rhizobium*
b) *Azotobacter*
c) *Azospirillum*
d) Mycorrhiza
3. Pectinases and protopectinases are responsible for _____ symptom.
a) Chlorosis
b) Soft rot
c) Wilt
d) Stunting
4. Taq polymerase is used in _____
a) PCR
b) Blotting
c) Production of transgenic plants
d) Synthesis of recombinant insulin
5. During the production of recombinant humulin, the chain A and chain B are combined by _____
a) Oxidation
b) Reduction
c) Sulphonation
d) Carboxylation

SECTION – B

II. Simple Answer questions :

5X 1= 5Marks

Answer in a word phrase or a sentence.

6. Microbial inoculants

Contd...2

7. YEMA
8. Aetiology
9. Recombinant vaccine
10. Transgene

SECTION - C

III. Short Answer questions :

4X 5= 20 Marks

Answer any FOUR of the following.

11. Production of *Azotobacter* biofertilizers.
12. Role of growth regulators in plant disease development.
13. Correction of SCID.
14. *Bacillus thuringiensis* as biopesticide
15. Blast disease of rice
16. Advantages of microbial enzymes

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Explain post inflectional structural defense mechanisms in plants
18. Describe the production of monoclonal antibodies by hybridoma technology
19. Write note on :
 - a) Cyanobacterial biofertilizers
 - b) Isolation of Rhizobium

G.P. Code No. 15552

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Fifth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & New Syllabus 2017-18 Onwards)

MICROBIOLOGY

SSE801 : Paper VI: Agricultural Microbiology and Biotechnology

[Max.Marks:50

Time: 3 hrs.]

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

5X 1= 5Marks

I. Multiple choice questions :

Select and write the correct answer.

1. _____ is an example for non host specific toxin
a) Victrorin b) HM-t toxin c) Ten toxin d) HC toxin
2. Cellulases are responsible for _____ diseases
a) Curling b) Chlorosis
c) Soft rot d) Wilt
3. _____ among the following is a free living nitrogen fixing bacteria
a) *Rhizobium* b) *Azotobacter*
c) *Azospirillum* d) *E. Coli*
4. The term Biotechnology was coined by
a) Sanger b) Banting
c) Karl Ereky d) Kohler
5. Hybridoma cells are grown in _____ medium
a) Nutrient agar b) MS media
c) Potato dextrose agar d) HAT media

SECTION - B

5X 1= 5Marks

II. Simple Answer questions :

Answer in a word phrase or a sentence.

6. FYM

Contd...2

7. Gene Therapy
8. Disease triangle
9. Humulin
10. Microbial enzymes

SECTION - C

III. Short Answer questions :

4X 5= 20 Marks

Answer any FOUR of the following.

11. Production of Azospirillum biofertilizers
12. Role of cutinases and Cellulases in plant disease development
13. Southern blotting technique
14. NPV as biopesticide
15. Coffee rust
16. Structure Ti plasmid

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Describe the etiology, symptoms, epidemiology and control of Tikka disease of Ground nut.
18. Explain the technique and applications of PCR
19. Write note on :
 - a) Identification of *Rhizobium*
 - b) Methods of application of biofertilizers

Contd...3

Fifth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & Old Syllabus) 2011-12 Onwards

MICROBIOLOGY

SSE801 : Paper VI: Agricultural Microbiology and Biotechnology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. Multiple choice questions :

5X 1= 5Marks

Select and write the correct answer.

1. The formation of cysts can be observed in
a) Rhizobium b) Azatobacter c) Azospirillum d) None of these
2. Bordeaux mixture was originally used for
a) Downey mildew of grapes b) Kole Roga c) Tikka decrease d) TMV
3. Victorian is produced by
a) Bacteria b) Virus
c) Algae d) None of these
4. An example for recombinant vaccine is
a) OPV b) IPV c) Small pox vaccine d) None of these
5. Restriction enzymes are also called _____
b) Molecular glues b) Molecular markers c) Molecular Scissors
d) All of these

SECTION - B

II. Simple Answer questions :

5X 1= 5Marks

Answer in a word phrase or a sentence.

6. Rosette Spike
7. Congo red

Contd...4

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8. Transgene
9. Tyloses
10. Thuricide

SECTION - C

III. Short Answer questions :

4X 5= 20 Marks

Answer any FOUR of the following.

11. Role of growth regulators in plant disease development
12. Southern blotting technique
13. Azospirillum as biofertilizer
14. Production of recombinant insulin
15. Types and applications of gene therapy
16. TMV

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Describe principle, protocol and applications of PCR
18. Explain Tikka disease in detail
19. Write a note on :
 - a) Viral insecticides
 - b) ISI standards for biofertilizers

Fifth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & New Syllabus) 2017-18 Onwards

MICROBIOLOGY

SSE800 : Paper V: Environmental Microbiology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. Multiple choice questions :

5X 1= 5Marks

Select and write the correct answer.

1. Association in which one organisms feeds upon and digest another organism is called _____
a) Amensalism b) Parasitism c) Predatism d) Symbiosis
2. A spore trap unit which is built in vacuum pump and designed to trap fungal spores and pollen grains continuously for 7 days is _____
a) The Anderson sampler b) Rotorod sampler
c) Burkard trap d) Slit sampler
3. A water borne microorganism which colonize small and large intestine causing inflammation and mild ulcer _____
a) *Campylobacter Jejuni* b) *Vibrio cholerae*
c) *Escherichia coli* d) *Pseudomonas aerogenosa*
4. The predominant microorganisms responsible for the formation of Zooglea _____
a) *Achromobacter sp* b) *Zooglea ramigera*
c) *Bacillus subtilus* d) *Entamoeba histolytica*
5. The main disadvantage of oxidation and is that.
a) Large area is required for construction
b) Maintenance and operation cost are high
c) BOD removal is very low
d) COD removal is less

Contd...2

SECTION - B

II. Simple Answer questions :

5X 1 = 5Marks

Answer in a word phrase or a sentence.

6. Bioremediation
7. Orifice
8. Super chlorination
9. Sullage
10. Pyrolysis

SECTION - C

III. Short Answer questions :

4X 5 = 20 Marks

Answer any FOUR of the following.

11. Phosphorus cycle
12. Mechanism of nodule formation in root hairs.
13. Vertical cylinder trap
14. Agar plate techniques
15. Sludge digestion
16. Microorganisms present in domestic sewage

SECTION - D

IV. Long Answer questions :

2X 10 = 20 Marks

Answer any TWO of the following.

17. Describe the types and significance of mycorrhizae
18. Describe air borne diseases
19. Write a short note on :
 - a) Chemical sedimentation process
 - b) Activated sludge treatment process

Fifth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & New Syllabus 2011-12 Onwards)

MICROBIOLOGY

SSE800 : Paper V: Environmental Microbiology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. Multiple choice questions :

5X 1= 5Marks

Select and write the correct answer.

1. Diphtheria is a _____ disease
a) Air borne b) Water borne c) Food borne d) Secretions
2. Zooglea is found in _____
a) Septic tank b) Imhoff tank c) Trickling filter d) Bar filter
3. Indicator organism among the following is _____
a) *E. coli* b) *Aspergillus* c) *Saccharomyces* d) *Bacillus*
4. Diazotrophy is _____
a) Nitrogen fixation b) Phosphate solubilization c) Soil erosion d) Biomagnification
5. An example for water borne bacterial disease is _____
a) Amoebiasis b) Hepatitis - B c) Cholera d) Tuberculosis

SECTION - B

II. Simple Answer questions :

5X 1= 5 Marks

Answer in a word phrase or a sentence.

6. Bioremediation
7. Pollen calendar
8. Completed test

Contd...4

Q.P. Code No. 15551

9. Durham's tube
10. Sedimentation

SECTION - C

4X 5= 20 Marks

III. Short Answer questions :

Answer any FOUR of the following.

11. Antagonism
12. Anderson sampler
13. Septic tank
14. Hepatitis - A
15. COD
16. Influenza

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Explain Nitrogen cycle.
18. Describe microbiological analysis of water.
19. Write notes on :
 - a) Gravity plate
 - b) Microbial treatment of sewage

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Sixth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & New Syllabus 2017-18 onwards)

MICROBIOLOGY

SSF800 : Paper VII: Food, Dairy and Industrial Microbiology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. Multiple choice questions :

5X 1= 5 Marks

Select and write the correct answer.

1. One of the raw materials that is obtained from cheese industry is _____
 - a) Molasses
 - b) Corn Steep liquor
 - c) Whey
 - d) Pharmamedia
2. Resazurin reduction test is a _____ stage process
 - a) Two
 - b) Three
 - c) One
 - d) Four
3. During ethanol recovery, 95% ethanol is obtained by _____
 - a) Fractional sterilization
 - b) Azeotropic distillation
 - c) Fractional distillation
 - d) Centrifugation
4. Aflatoxin is a _____
 - a) Enterotoxin
 - b) Neurotoxin
 - c) Nephrotoxin
 - d) Endotoxin
5. The chemical that is listed under GRAS is _____
 - a) Sodium sulfite
 - b) Sulphur dioxide (SO₂)
 - c) Acetic acid
 - d) All of these

Contd...2

II. Simple Answer questions :

Answer in a word phrase or a sentence.

5X 1= 5 Marks

6. Crowded plate technique
7. Molasses
8. Milk stone
9. DMC
10. Enterotoxin

SECTION - C

III. Short Answer questions :

Answer any FOUR of the following.

4X 5= 20 Marks

11. HTST
12. Secondary screening
13. Role of Osmotic pressure in food preservation
14. Methylene blue reduction test
15. Principles of food spoilage
16. Continuous fermentation process

SECTION - D

IV. Long Answer questions :

Answer any TWO of the following.

2X 10= 20 Marks

17. Describe the industrial production of Penicillin
18. Explain various sources of contamination of milk
19. Write notes on :
 - a) Production of Paddy straw mushroom
 - b) Standard plate count

UP 1984-85

SIXTH SEMESTER B.Sc. (HONOURS) EXAMINATION

APRIL / MAY 2014

Time: 3 hours

BIOCHEMISTRY

EX-200: Paper VII, Food, Water and Nutritional Biochemistry

INSTRUCTIONS TO THE CANDIDATES:

1. All questions are compulsory.
2. Show neat and labelled diagrams wherever applicable.
3. Answer question 4 and 5 in the first and second part of their answer sheet.

SECTION - A

1. Answer the following questions:

Write one word or two word answers.

1. Factors which contribute to the growth of microorganisms in food are

| | |
|--------------------------|--------------------|
| a) pH | b) Redox potential |
| c) Inhibiting substances | d) All of these |
2. Biontin is not treated by

| | |
|--------------------------------|---------------------|
| a) Administration of sulphites | b) Acidic condition |
| c) Maintaining fluid balance | d) Vitamin B12 |
3. Carbon sources used in culture and production media are

| | |
|-----------------------|-----------------|
| a) Starch | b) Ethanol |
| c) Sugarcane molasses | d) All of these |
4. _____ is an optimal choice for fermenting

| | |
|-------------------|------------|
| a) Impeller | b) Paddle |
| c) Cooling jacket | d) Sparger |
5. Microorganisms used in industries

| | |
|-------------------------------------|--------------------------------|
| a) Natural occurring microorganisms | b) Laboratory selected mutants |
| c) Genetically modified organisms | d) All of these |

SECTION - B

II. Simple Answer questions :

5X 1= 5 Marks

Answer in a word phrase or a sentence.

6. Water activity
7. Spawn
8. Aflatoxin
9. Pasteurization
10. Secondary screening

SECTION - C

III. Short Answer questions :

4X 5= 20 Marks

Answer any FOUR of the following.

11. Irradiation
12. Salmonellosis
13. Types of microorganisms in milk
14. Gassy fermentation
15. Raw materials used in industrial fermentation
16. Citric acid production

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Describe the food preservation by chemical methods.
18. Explain microbial examination of milk.
19. Write notes on :
 - a) Batch fermentation
 - b) Pasteurization

Sixth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & New Syllabus 2017-18 onwards)

MICROBIOLOGY

SSF801 : Paper VIII: Immunology and Medical Microbiology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

I. Multiple choice questions :

5X 1= 5 Marks

Select and write the correct answer.

1. Hematopoietic stem cell is _____
 - a) Totipotent
 - b) Pluripotent
 - c) Both a) and b)
 - d) None of the above
2. _____ is the secondary lymphoid organ
 - a) Spleen
 - b) Bone marrow
 - c) Thymus
 - d) Tonsils
3. HIV infects _____ cells
 - a) T_H cells
 - b) T_C cells
 - c) B - cells
 - d) NK cells
4. Candidiasis is _____ disease
 - a) Bacterial
 - b) Protozoal
 - c) Viral
 - d) Fungal
5. Streptomycin inhibits _____
 - a) Protein synthesis
 - b) Cell wall synthesis
 - c) DNA synthesis
 - d) RNA synthesis

Contd...2

II. *Simple Answer questions :*

Answer in a word or phrase or a sentence.

6. Hinge region
7. Innate immunity
8. Tubercle
9. Narrow spectrum antibiotics
10. AIDS.

SECTION - C

III. *Short Answer questions :*

4X 5= 20 Marks

Answer any FOUR of the following.

11. Properties of antigens.
12. Types of Infections.
13. Autoimmunity
14. Diagnosis and control of syphilis
15. Classification of antibiotics
16. Toxoid vaccines

SECTION - D

IV. *Long Answer questions :*

2X 10= 20 Marks

Answer any TWO of the following.

17. Explain the structure and types of immunoglobulins.
18. Describe the etiology, pathogenesis, clinical features, laboratory diagnosis, prophylaxis and treatment of malaria.
19. Write note on :
 - a) Humoral immune response.
 - b) Mycotoxicosis

Q.P. Code No. 15652

Page No... 3

Sixth Semester B.Sc., Degree Examinations

April / May 2022

(Semester Scheme & New Syllabus 2011-12 onwards)

MICROBIOLOGY

SSF801 : Paper VIII: Immunology and Medical Microbiology

Time: 3 hrs.]

[Max.Marks:50

Instruction to the Candidates :

1. All Sections are compulsory.
2. Draw neat and labelled diagrams wherever necessary.
3. Answer Section A and B in the first two pages of main answer book.

SECTION - A

1. Multiple choice questions :

5X 1= 5 Marks

Select and write the correct answer.

1. Lattice hypothesis was proposed by _____
a) Syndry b) Marrach
c) Thomas Czlch d) Louis Pasteur.
2. _____ mediate allergic responses
a) IgE b) IgM c) IgA d) IgG
3. BCG vaccine is _____
a) Killed vaccine b) Live attenuated vaccine c) Toxoid vaccine
d) Recombinant vaccine.
4. Malaria is caused by _____
a) *Entamoeba histolytica* b) *Mycobacterium tuberculosis*
c) *Plasmodium vivax* d) *Candida albicans*
5. _____ inhibits protein synthesis
a) Penicillin b) Tetracycline
c) Sulfadrug d) Fluconazole

Contd...4

SECTION - B

II. Simple Answer questions :

5X 1= 5 Marks

Answer in a word or phrase or a sentence.

6. Active immunity
7. Secondary immune response
8. DPT
9. Mycotoxicosis
10. Broad spectrum antibiotics.

microbiology

SECTION - C

III. Short Answer questions :

4X 5= 20 Marks

Answer any FOUR of the following.

11. Thymus
12. Immunological memory
13. Structure of Immunoglobulin
14. Diagnosis of *Mycobacterium tuberculosis*
15. Diagnosis and prophylaxes of hepatitis B.
16. Penicillin

SECTION - D

IV. Long Answer questions :

2X 10= 20 Marks

Answer any TWO of the following.

17. Explain cells of the immune system
18. Describe the etology, symptoms, pathogenesis, labor along diagnosis and control of poliomyelitis
19. Write notes on :
 - a) Indirect ELISA
 - b) AIDS
