SM-8

Total No. of Pages :2

| Seat No. | |
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# B.Sc. (Part-III) (Semester-V) (CBCS) Examination, October - 2023

## MICROBIOLOGY

### Virology (Paper-IX)

### Sub. Code : 79708

Day and Date :Monday 23 - 10- 2023 Total Mark

Time : 10.30 a.m. to 12.30 p.m.

Instructions : 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw neat labeled diagrams wherever necessary.

Q1) Rewrite the following sentences by choosing correct alternative. [8]

a) One step growth experiment was designed for the first time by _____

i) Doermann ii) Hershey and Chase

iii) Ellis and Delbruck iv) Louis Pasteur

b) Genome of Adenovirus has _____

i) Palindrome ends ii) Cohesive ends

iii) Inverted terminal repeats iv) Redundant ends

c) Genome of tobacco mosaic virus is _____

i) Linear, Single Strained, Unsegmented, Infectious RNA

ii) Linear, Double Strained, Unsegmented, Infectious RNA

iii) Linear, Single Strained, Segmented, Infectious RNA

iv) Linear, Double Strained, Segmented, Infectious RNA

d) Viroids are _____

i) Very small viruses ii) Infectious circular RNA

iii) Infectious proteins iv) attenuated viruses



P.T.O.

e) Latex droplet method is used for _____
   i) purification of only animal viruses
   ii) enumeration of animal viruses
   iii) isolation of animal viruses
   iv) purification of any viruses

f) Continuous cell line isolated from carcinoma of cervix is _____
   i) HeLa ii) HEp-2
   iii) KB iv) Detroit 6

g) Gene N of lambda phage to producing a protein which functions as _____
   i) anti terminator ii) translation terminator
   iii) Transcription terminator iv) initiator of DNA replication

h) _____is process in which cells undergoes indefinite no of divisions.
   i) Immortalization ii) Metastasis
   iii) Apoptosis iv) Angiogenesis

Q2) Answer the following (Any two) [16]
   a) Describe in brief isolation and cultivation of animal viruses.
   b) Define oncogenesis explain the characteristics of cancerous cell.
   c) Describe in brief reproduction of Adenovirus.

Q3) Write short note on (Any four) [16]
   a) Structure of HIV.
   b) Viroids
   c) Reproduction of $T_4$ Bacteriophage.
   d) General features of viral envelope.
   e) Explain circularization of lambda genome.
   f) Latex droplet method

(9)

SM-50

Total No. of Pages :2

| Seat No. | |
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# B.Sc. (Part-III) (Semester-V) (CBCS) Examination, October - 2023

## MICROBIOLOGY

### Agricultural Microbiology (Paper-XII)

### Sub. Code : 79711

**Day and Date :Monday 30 - 10- 2023** **Total Marks : 40**

**Time : 10.30 a.m. to 12.30 p.m.**

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

**Q1)** Rewrite the following sentences by selecting correct alternative. [8]

a) Generally soil profile consists of _____master horizons.

i) Five ii) Two

iii) Three iv) Nine

b) _____cycle is a sedimentary type of biogeochemical cycle.

i) Carbon ii) Nitrogen

iii) Phosphorus iv) Oxygen

c) Phosphate solubilizing bacteria is isolated on _____.

i) Pikovskaya's medium ii) Jensen's medium

iii) CRYEMA iv) Nitrogen free mannitol agar

d) _____is opportunistic avirulent plant symbiont.

i) Lichen ii) Trichoderma

iii) Azotobacter iv) Aspergillus

e) _____of the following is not a type of manure.

i) Farmyard manure ii) Compost manure

iii) Platinum manure iv) Green manure



P.T.O.

f) A pinnata is the common example of _____.

i) Azolla ii) Rhizobium

iii) Blue Green Algae iv) Frankia

g) The common carrier used for the production of biofertilizer is _____.

i) rock Phosphate ii) jaggery

iii) gum Arabic iv) lignite

h) _____is the oldest and best example of known biological control method.

i) irrigation ii) Alteration of soil pH

iii) Crop rotation iv) Treatment of soil with fertilizers

**Q2)** Attempt any two of the following. **[16]**

a) Discuss the production, methods of application and uses of Azotobacter bio-inoculant.

b) Discuss in detail about the causative agent, symptoms, mode of transmission, prevention and control of citrus canker.

c) What are various types of microbiological interactions? Explain Symbiosis and Commensalism with suitable examples.

**Q3)** Write short notes on any four of the following. **[16]**

a) Green manure

b) *Bacillus thuringiensis*

c) Methods of vermicomposting

d) Phosphorous cycle

e) Parasitism

f) Phosphate solubilizing microorganisms



SM-22

Total No. of Pages : 2

| Seat No. | |
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# B.Sc. (Part - III) (Semester - V) (CBCS) Examination, October - 2023

## MICROBIOLOGY

## DSE-E-50:Immunology (Paper - X)

## Sub. Code : 79709

7748

**Day and Date : Wednesday, 25 - 10 - 2023** **Total Marks : 40**

**Time : 10.30 a.m. to 12.30 p.m.**

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

**Q1)** Choose the correct alternative and rewrite the statement. **[8]**

a) The most potent cell that present antigen and are distributed throughout the lymphoid and nonlymphoid tissues of the body are _____.

i) Dendritic cells ii) Natural Killer cells

iii) Macrophages iv) Monocytes

b) _____ the class of MHC which is recognized by CD4 TH cell.

i) MHC cannot recognize T cells

ii) MHC III

iii) MHC I

iv) MHC II

c) _____ mediate type I hypersensitivity.

i) IgE ii) IgD

iii) IgA iv) IgM

d) Cell lysis in complement pathway is initiated by _____.

i) membrane destruction complex

ii) membrane degradation complex

iii) membrane attacking complex

iv) membrane lysis complex

7748

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7748

*P.T.O.*

e) Hybridoma technology was developed by _____
   i) Kohler and Milstein  ii) Khorana and Nirenberg
   iii) Khorana and Korenberg  iv) Beedle and Tautum

f) Cytokines are chemical messengers which _____
   i) kill microorganisms  ii) promote inflammation
   iii) cause severe pain  iv) produce antibodies

g) _____ type of hypersensitivity reaction is known as a delayed hypersensitivity reaction.
   i) Type I  ii) Type II
   iii) Type III  iv) Type IV

h) During an allergic immune response, histamine is released from _____
   i) B lymphocytes  ii) T lymphocytes
   iii) mast cells  iv) Special lymphocytes

**Q2)** Attempt any <u>two</u> of the following: **[16]**

a) Explain in detail the activation of complement by alternate pathway

b) Describe the development of type I hypersensitivity reaction.

c) Explain in detail the activation of B cell by T cell dependant antigen

**Q3)** Write short notes on any <u>four</u> of the following: **[16]**

a) Macrophages

b) Structure and function of thymus

c) Activation of B cell by antigen presenting cell

d) Properties of complements

e) Types of Monoclonal.

f) Properties of Interferons

SM - 35

Total No. of Pages : 2

| Seat No. | |
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# B.Sc. (Part - III) (Semester - V) Examination, October - 2023
## MICROBIOLOGY
## DSE-E51 : Food and Industrial Microbiology (Paper - XI)
## Sub. Code : 79710

7922

**Day and Date : Friday, 27 - 10 - 2023** **Total Marks : 40**

**Time : 10.30 a.m. to 12.30 p.m.**

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

**Q1)** Rewrite the following sentences by selecting correct alternative. [8]

a) Flocculation process uses_____ to settle the biomass from fermented broth.

i) Sodium hydroxide ii) Sodium chloride

iii) Alum iv) Hydrochloric acid

7922

b) The water activity of fresh fruits and vegetables is_____.

i) 0.98 ii) 1

iii) 9.9 iv) 1.9

c) Strain improvement is achieved by_____.

i) Mutation ii) Transformation

iii) Transduction iv) All of these

7922

d) The time required to cause 90% reduction in the count of viable spores at specific temperature is called as_____.

i) A value ii) B value

iii) C value iv) D value

Yashwantrao Chavan College of Science MICROBIOLOGY

*P.T.O.*

e) _____oil is most commonly used for preservation of cultures.

i) Paraffin ii) Sandal wood

iii) Castor iv) Soyabean

f) Wine flower defect is caused by the growth of_____.

i) Bacteria ii) Film yeast

iii) Viruses iv) Actinomycetes

g) Principal fermentation media used for production of alcohol at industrial level is called as_____.

i) Corn steep liquor ii) Mac conkeys agar

iii) Nutrient agar iv) Black strap molasses

h) The precursor used for the production of Penicillin G is_____.

i) Phenyl acetic acid ii) Hydroxyphenylacetic acid

iii) Phenoxy acetic acid iv) $CoCl_2$

**Q2)** Attempt any two of the following: **[16]**

a) Explain the factors determining food as a substrate for microorganisms.

b) What is bioassay? Explain various types of microbiological assays.

c) Explain Penicillin fermentation with reference to - Organisms used, Inoculum preparation, Fermentation media, Fermentation conditions, Extraction and Recovery.

**Q3)** Write short notes on any Four of the following: **[16]**

a) Microbial defects of wine

b) Pyrogen testing

c) Salmonellosis

d) Preservation of industrially important microorganisms

e) Probiotics

f) Scale up of fermentations

SW - 398

Total No. of Pages : 2

Seat No. _____

B.Sc. (Part - III) (Semester - V) Examination, November - 2019

MICROBIOLOGY

Food and Industrial Microbiology (Paper - XI)

Sub. Code: 65893

Day and Date : Monday, 04 - 11 - 2019 Total Marks : 40

Time : 12.00 noon to 2.00 p.m.

Instructions : 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q1) Rewrite the following sentences by selecting correct alternatives. [8]

a) In penicillin G production, _____ is used as precurssor.
i) phenyl acetic acid ii) acetic acid
iii) phenoxy acetic acid iv) hydroxyphenyl acetic acid

b) In India, biogas is commonly known as _____.
i) LPG gas ii) fire gas
iii) LG gas iv) gobar gas

c) Carcinogenicity is tested by _____ test.
i) MPN ii) allergen
iii) ames iv) toxicity

d) *Staphylococcus aureus* produces _____ toxin.
i) entero ii) cyto
iii) neuro iv) endo

e) The natural antimicrobial compound present in fresh milk is _____.
i) lactose ii) furfural
iii) benzoic acid iv) lactoferin

P.T.O.



SW - 398

f) _____ organisms exert a positive influence on host health after ingestion.
i) protótrophic ii) probiotic
iii) autotrophic iv) auxotrophic

g) For continuous filteration, _____ filters are used.
i) Plate & frame ii) Rotary vacuum
iii) Pressure leaf iv) Disc

h) End point determination assays are used for _____ substances.
i) stimulatory ii) Inhibitory
iii) Non reactive iv) Reactive

Q2) Attempt any two: [2 × 8 = 16]
a) Discuss in detail process of centrifugation used for recovery and purification of fermentation product
b) Discuss in detail industrial production of alcohol
c) Discuss the concept, methods of production and applications of probiotics.

Q3) Write short notes on any four: [4 × 4 = 16]
a) Production of vitamin B12.
b) Aflatoxin.
c) Methanogens.
d) Lyophilisation.
e) Microbial defects of wine.
f) Scale up of fermentation.

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SW - 398

Total No. of Pages : 2

Seat No.

B.Sc. (Part - III) (Semester - V) Examination, November - 2019

MICROBIOLOGY

Food and Industrial Microbiology (Paper - XI)

Sub. Code: 65893

Day and Date : Monday, 04 - 11 - 2019

Time : 12.00 noon to 2.00 p.m.

Total Marks : 40

Instructions : 1) All questions are compulsory.
2) Figures to the right indicate full marks.

Q1) Rewrite the following sentences by selecting correct alternatives. [8]

a) In penicillin G production, _____ is used as precurssor.
i) phenyl acetic acid ii) acetic acid
iii) phenoxy acetic acid iv) hydroxyphenyl acetic acid

b) In India, biogas is commonly known as _____.
i) LPG gas ii) fire gas
iii) LG gas iv) gobar gas

c) Carcinogenicity is tested by _____ test.
i) MPN ii) allergen
iii) ames iv) toxicity

d) *Staphylococcus aureus* produces _____ toxin.
i) entero ii) cyto
iii) neuro iv) endo

e) The natural antimicrobial compound present in fresh milk is _____.
i) lactose ii) furfural
iii) benzoic acid iv) lactoferin

f) _____ organisms exert a positive influence on host health after ingestion.
i) prototrophic ii) probiotic
iii) autotrophic iv) auxotrophic

g) For continuous filteration, _____ filters are used.
i) Plate & frame ii) Rotary vacuum
iii) Pressure leaf iv) Disc

h) End point determination assays are used for _____ substances.
i) stimulatory ii) Inhibitory
iii) Non reactive iv) Reactive

P.T.O.

SW - 398

Q2) Attempt any two: [2 × 8 = 16]

a) Discuss in detail process of centrifugation used for recovery and purification of fermentation product.
b) Discuss in detail industrial production of alcohol.
c) Discuss the concept, methods of production and applications of probiotics.

Q3) Write short notes on any four: [4 × 4 = 16]

a) Production of vitamin B12.
b) Aflatoxin.
c) Methanogens.
d) Lyophilisation.
e) Microbial defects of wine.
f) Scale up of fermentation.

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SW-414

Total No. of Pages : 2

Seat No. ____

# B.Sc. (Part-III) (Semester-V) Examination, November - 2019
## MICROBIOLOGY
## Agricultural Microbiology (Paper-XII)
### Sub. Code: 65894

Day and Date : Tuesday, 05 - 11 - 2019 Total Marks : 40

Time : 12.00 noon to 2.00 p.m.

Instructions : 1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Draw well neat labelled diagram wherever necessary.

Q1) Rewrite the sentences by choosing correct alternatives: [8]

a) Conversion of inorganic forms of elements to organic form is called _____.
i) mineralization ii) degradation
iii) immobilization iv) activation

b) A relationship between two organisms in which one engulfs and digest other organism is known as _____.
i) predation ii) parasitism
iii) ammensalism iv) commensalism

c) The attempt to make land suitable for farming is called _____.
i) recalcitration ii) reclamation
iii) ultisols iv) spododols

d) BT toxin acts by producing a protein that blocks _____ tract.
i) respiratory ii) excretory
iii) reproductive iv) gastrointestinal

e) $C_1$ enzume acts on _____ cellulose.
i) native ii) conjugated
iii) degraded iv) acidic

P.T.O.





f) Anemochory is an example of _____ transmission of plant pathogen.
i) direct ii) external
iii) indirect iv) internal

g) _____ degradation helps in environmental clean up.
i) Cellulose ii) Hemicellulose
iii) Lignin iv) Pesticide

h) _____ is a very effective biological mean for plant disease management.
i) Azotobacter ii) Rhizobium
iii) Azospirillum iv) Trichoderma

Q2) Answer any two: [16]

a) Explain in detail role of microorganisms in phosphorous cycle.

b) What is biofertilizer? Explain in detail Azotobactor biofertilizer.

c) Describe Tikka disease of groundnut with reference to causative agent. Symptons and control.

Q3) Write short notes (any four): [16]

a) Vermicompost.

b) Pit method for city compost.

c) Commensalism.

d) Humus.

e) Common symptoms Produced by plant pathogens.

f) Mechanism of pesticide degradation.

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