



BRAINWARE UNIVERSITY

Term End Examination 2020 - 21

Programme – Master of Science in Microbiology

Course Name – Microbial Ecology & Plant Microbe Interactions

Course Code - MMB303

Semester / Year - Semester III

Time allotted : 75 Minutes

Full Marks : 60

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 60=60

1. (*Answer any Sixty*)

(i) Lytic enzymes which destroy are secreted by which of the following microorganism?

- | | |
|-------------------|-----------------|
| a) Fungi | b) algae |
| c) staphylococcus | d) myxobacteria |

(ii) Which of the following comes under the category of positive association?

- | | |
|-----------------|----------------|
| a) neutralism | b) parasitism |
| c) commensalism | d) ammensalism |

(iii) Which of the following organisms are known to grow on the surfaces of freshly exposed rocks?

- | | |
|------------------|------------|
| a) green algae | b) diatoms |
| c) cyanobacteria | d) yeast |

(iv) Lipopolysaccharide in cell walls is characteristic of?

- | | |
|---------------------------|---------------------------|
| a) Gram-positive bacteria | b) Gram-negative bacteria |
| c) Fungi | d) Algae |

(v) Which microorganism(s) among the following perform photosynthesis by utilizing light?

- | | |
|------------------|----------|
| a) Cyanobacteria | b) Fungi |
|------------------|----------|

c) Viruses

d) All

(vi) Type strain is used for referring to?

a) species

b) genus

c) family

d) division

(vii) The correct order of taxonomic groups from higher to lower rank is?

a) Kingdom—Order—Class—Family

b) Order—Class—Division—Family—Genus
pecies

c) Kingdom—Order—Division—Family—Class—Genus—Species

d) Kingdom—Division—Class—Order—Family—Genus—Species

(viii) What are ribosomes composed of?

a) Proteins

b) DNA

c) RNA

d) Proteins and RNA

(ix) Which among the following kingdoms were proposed by Whittaker?

a) Monera

b) Protista, Fungi

c) Plantae, Animalia

d) Monera, Protista, Fungi, Plantae, Animalia

(x) Bacteria with less than a complete twist or comma shaped is known as?

a) spirilla

b) helical

c) vibrioid

d) spirochetes

(xi) The generation time for E.coli is

a) 20 minutes

b) 35 minutes

c) 2 minutes

d) 13 minutes

(xii) Infectious diseases occur as a result of interaction between

a) One host and the other

b) One microorganism and the other
microorganism.

c) Pathogenic microorganism and the host. d) None of the these

(xiii) The capability of microbial species to cause disease is termed

- a) Virulence
- b) Pathogenicity
- c) Acute infection
- d) Chronic infection

(xiv) Chronic infection

- a) Has long duration
- b) Has no long duration
- c) Restricted to limited area
- d) All of these

(xv) Who first discovered the insecticidal properties of DDT?

- a) Muller
- b) Kurt Alder
- c) Otto Diels
- d) Parker and Beacher

(xvi) Which one of the following is widely used in biological control of insects?

- a) Opuntia
- b) Gambusia
- c) Lady beetle
- d) All of these

(xvii) Chemicals regulating insect behaviour are called

- a) Semiochemicals
- b) Biocides
- c) Organo-chemicals
- d) None of these

(xviii) FGS stands for

- a) Full Genome Sequencing
- b) Factor of Genome Sequencing
- c) Foreign Gene System
- d) Factual Gross System

(xix) Component of biosphere related with soil is

- a) Lithosphere
- b) Hydrosphere
- c) Atmosphere
- d) None of these.

(xx) Non hybiological nitrogen fixation is

- a) Electrochemical and photochemical
- b) Rhizobial
- c) Cyanobacterial
- d) None of these

(xxi) Pseudomonous is an important component of nitrogen cycle which

- a) Fixes elemental nitrogen
- b) Produces elemental nitrogen
- c) Transfers nitrogen
- d) Changes ammonium nitrogen to nitrate state.

(xxii) The limiting factor in soil nutrification is

- a) Soil pH
- b) Light
- c) Temperature
- d) Air

(xxiii) Multiplication of slime mould occurs through

- a) Binary fission
- b) Plasmotomy
- c) Multiple fission
- d) Plasmotomy and Multiple fission

(xxiv) In cellular slime moulds, meiosis is

- a) Zygotic
- b) Gametic
- c) Sporic
- d) Variable

(xxv) Who discovered bacteria?

- a) Leeuwenhoek
- b) Lederberg
- c) Wolkman and Zinder
- d) None of these

(xxvi) Bunt disease of wheat is due to

- a) Telletia
- b) Puccinia
- c) Ustilago
- d) Cystopus

(xxvii) Bakanae disease is connected with discovery of

- a) GA
- b) IAA

c) ABA

d) 2,4-D

(xxviii) The most mutable virus is

a) Chicken pox virus

b) HIV

c) Influenza virus

d) Dengue virus

(xxix) Cauliflower mosaic viruses have

a) Double stranded DNA

b) Single stranded DNA

c) Single stranded RNA

d) Double stranded RNA

(xxx) Algal bloom results in

a) Global warming

b) Salination

c) Eutrophication

d) Biomagnification

(xxxii) Seed treatment is done to control

a) Soil borne disease

b) Air borne disease

c) Seed borne disease

d) None of these

(xxxiii) 'germ theory' of disease in plants was proved by

a) M. Berkeley

b) Anton de Bary

c) Louis Pasteur

d) None of them.

(xxxiv) The first significant DNA sequence to be obtained was that of

a) Lambda

b) Plasmid

c) Lactose

d) Mammals

(xxxv) Sequence of which of the following cannot be determined using the Maxam Gilbert method?

a) Bacteria

b) Plants

c) Bacteriophage T7

d) Plasmid

(xxxv) phylogenetic analysis of a set of sequences that aligns _____ is straightforward because the positions that correspond in the sequences can be readily identified in a _____ of the sequences.

- a) very well, multiple sequence alignment
- b) in a haphazard manner, multiple sequence alignment
- c) in a distorted way, multiple sequence alignment
- d) very well, self alignment

(xxxvi) Bacterial blight of rice is caused by

- a) *Xanthomonas oryzae* pv. *oryzae*
- b) *Pseudomonas oryzae*
- c) *Xanthomonas oryzae* pv. *Oryzicola*
- d) *Erwinia herbicola*

(xxxvii) Plant pathogenic bacteria are usually

- a) Rod-shaped
- b) Spherical
- c) Cubical
- d) Comma-shaped

(xxxviii) Which of the following cannot be cultured in vitro?

- a) Plant pathogenic bacteria
- b) *Spiroplasma*
- c) Fungi
- d) *Phytoplasma*

(xxxix) The most number of plant pathogenic bacteria belongs to

- a) Alphaproteobacteria
- b) Betaproteobacteria
- c) Gammaproteobacteria
- d) Deltaproteobacteria

(xl) The food reserve in bacteria volutin granule serves as a source of

- a) Carbon
- b) Nitrogen
- c) Carbon & nitrogen
- d) Nitrogen & Phosphorus

(xli) Endospore is not formed by the genus

- a) *Bacillus*
- b) *Clostridium*
- c) *Streptomyces*
- d) None of these

(xlii) 18S rRNA is present in

- a) 50S subunit of ribosome
- b) 30S subunit of ribosome
- c) 60S subunit of ribosome
- d) 40S subunit of ribosome

(xliii) Pigment responsible for fluorescens in the fluorescent *Pseudomonas* spp. is

- a) Pyoverdinin
- b) Xanthophyll
- c) Melanin
- d) Anthocyanin

(xliv) The best way of preserving plant pathogenic bacteria is

- a) Sterile water
- b) Lyophilization
- c) -20°C
- d) Agar slants with yeast-glucose-chalk

(xlv) Mummy disease in *Agaricus bisporus* is caused by

- a) Fungi
- b) Virus
- c) Nematode
- d) Bacteria

(xlvi) Mycoviruses contain

- a) ssRNA
- b) dsRNA
- c) ssDNA
- d) dsDNA

(xlvii) The length of Tobacco mosaic virus is about

- a) 10 nm
- b) 150 nm
- c) 300 nm
- d) 600 nm

(xlviii) In which part of the cell most viroids are located?

- a) Nucleus
- b) Chloroplast
- c) Cytoplasm
- d) Mitochondria

(xlix) Which one of the following can be called as phytoanticipin?

- a) Saponin
- b) 9-hexadecanoic acid

c) Catechin

d) All of these

(l) Which plant immune pathway is activated within minutes of attack by a pathogen?

a) Plantibody immunity

b) PAMP-triggered immunity (PTI)

c) The fight or flight response

d) Effector-triggered immunity (ETI)

(li) What is the genetic model called that describes Effector-triggered immunity?

a) Gene-for-gene model

b) The PTI model

c) The late blight model

d) Effector-for-protein model

(lii) What happens if Effector-triggered immunity is activated?

a) The plant dies

b) The plant is resistant to pathogen attack

c) The plant immediately falls over

d) The plant develops disease

(liii) What are the conditions that favor the growth of *Phytophthora infestans*?

a) Cold and dry weather

b) Snow

c) Moderate temperatures and wet weather

d) A lightening storm

(liv) What is not required in the innate immune responses?

a) antigen

b) strong immunity

c) pathogen

d) previous contact

(lv) The information which is represented by a signal is detected by specific receptors and converted to a cellular response; this conversion is called

a) Signal amplification

b) Signal transversion

c) Signal transduction

d) Signal integration

(lvi) Which of the following signal molecule is NOT used for extracellular signaling?

- a) Autocrine
- c) Paracrine

- b) Endocrine
- d) Cyclic AMP

(lvii) A neem product used as insect repellent is

- a) Azadirachtin
- c) Endrin

- b) Rotenone
- d) Parathion

(lviii) A plant effective in ensuring safe delivery and prevent abortions is

- a) Azadirachta
- c) Adhatoda

- b) Ocimum
- d) Asparagus

(lix) Major useful product obtained from microbes is

- a) Vitamin
- c) Antibiotic

- b) Single cell protein
- d) All of these

(lx) Soil microorganisms are most active at

- a) 15-20°C
- c) 34-36°C

- b) 20-25°C
- d) 40-45°C