

RAJE RAMRAO MAHAVIYALAYA, JATH

Choice Based Credit System (CBCS)

B.Sc. Part I: Subject: Botany

SEMESTER –I

Botany Paper I: DSC- 13 A: BIODIVERSITY OF MICROBES, ALGAE AND FUNGI

Q.1) Multiple Choice Questions

- 1) In E. coli, lysogenic infection is caused by ----- particles.
 - i) T phage
 - ii) Lambda
 - iii) ϕ x 174
 - iv) None of these
- 2) Viruses are ----- intracellular parasites.
 - i) Obligate
 - ii) Facultative
 - iii) Both Obligate & Facultative
 - iv) None of these
- 3) The central core of nucleic acid in ----- does not contain both DNA and RNA.
 - i) Yeast
 - ii) Virus
 - iii) Bacteria
 - iv) Mycoplasma
- 4) Adenovirus has ----- shape.
 - i) rod
 - ii) spherical
 - iii) polyhedral
 - iv) Tadpole
- 5) Double stranded RNA is present in -----.
 - i) Pox and Herpes Virus
 - ii) Penicillium Virus
 - iii) Wound tumour virus
 - iv) Coliphage
- 6) The positive single stranded RNA is present in -----.
 - i) Tobacco Mosaic Virus
 - ii) Rhado viruses
 - iii) Paramyxo viruses
 - iv) Rabies virus
- 7) -----are natural scavengers.
 - i) Algae
 - ii) Only Bacteria
 - iii) Only Fungi
 - iv) Both bacteria and fungi
- 8) Human T-cell Leukaemia Virus (HTLV) was discovered by -----.
 - i) Rowe (1935)
 - ii) Yori Hinuma (1981)
 - iii) Moore (1892)
 - iv) Prusiner (1930)
- 9) ----- first reported and described TMV (Tobacco Mosaic Virus) from Holland.
 - i) W.M. Stanley (1935)
 - ii) Adolf Mayer (1886)
 - iii) Iwanowski (1892)
 - iv) Erwin (1930)
- 10) Each capsid of the virus is made up of several repeating subunits called -----.

- | | |
|-----------------|----------------|
| i) Automers | ii) Heteromers |
| iii) Capsomeres | iv) Nanomeres |
- 11) Elongate proteinaceous projection eject out from the envelope are called -----.
- | | |
|--------------------------|---------------|
| i) Spikes | ii) Peplomers |
| iii) Spikes or peplomers | iv) Fibrils |
- 12) The naked single stranded RNA not associated with capsid or helper virus are known as -----.
- | | |
|----------------------------|---------------|
| i) Virioids | ii) Virusoids |
| iii) Virioids or Virusoids | iv) Prions |
- 13) Bacteria with flagella all over the body are known as -----.
- | | |
|--------------------|------------------|
| i) Monotrichous | ii) Peritrichous |
| iii) Lophotrichous | iv) Atrichous |
- 14) -----bacteria use inorganic compounds as source of carbon and get energy by oxidation and reduction process.
- | | |
|--------------------|--------------------|
| i) Photosynthetic | ii) Chemosynthetic |
| iii) Heterotrophic | iv) Saprophytic |
- 15) The genetic material of one bacterium is partially transferred to another bacterium by the formation of a tube-like structure in the process of -----.
- | | |
|-------------------|--------------------|
| i) Conjugation | ii) Transformation |
| iii) Transduction | iv) All the above |
- 16) The bacterium naturally present in human alimentary canal is -----.
- | | |
|----------------|-----------------------|
| i) Azotobacter | ii) Escherichia coli |
| iii) Rhizobium | iv) Bacillus subtilis |
- 17) Teichoic acid present in the bacterial wall binds ----- ions.
- | | |
|--------------|--------------|
| i) Magnesium | ii) Sulphate |
| iii) Iron | iv) Cobalt |
- 18) Citrus canker is caused by -----.
- | | |
|------------------------|-----------------------------|
| i) Xanthomonas citri | ii) Xanthomonas malvacearum |
| iii) Escherichia citri | iv) Eriwinia citri |
- 19) Bacteria which can survive in the absence of oxygen are called as -----.
- | | |
|-----------------------|---------------------------|
| i) Obligate anaerobes | ii) Facultative anaerobes |
| iii) Obligate aerobes | iv) Facultative aerobes |
- 20) ----- are smallest bacteria in size.
- | | |
|----------|-------------|
| i) Cocci | ii) Bacilli |
|----------|-------------|

- iii) Vibrio
iv) Spirilla
- 21) ----- are large sulphur bacteria.
- i) Chlorobium
ii) Beggiatoa
iii) Chromatium
iv) Thiobacillus
- 22) ----- is a rod-shaped bacterium.
- i) Bacillus subtilis
ii) Pneumococcus pneumoniae
iii) Vibrio cholerae
iv) Streptococcus nigricans
- 23) Curved or comma shaped bacterium of cholera is called as -----.
- i) Cocci
ii) Bacilli
iii) Vibrio
iv) Spirilla
- 24) The algae which produce agar-agar are -----.
- i) Volvox and Nostoc
ii) Sargassum and Polysiphonia
iii) Gelidium and Gracilaria
iv) Spirogyra and Nostoc
- 25) In Nostoc thallus ----- are good sites for fixation of nitrogen.
- i) heterocysts
ii) homocysts
iii) hormogonia
iv) akinetes
- 26) Haplontic type of life cycle is found in -----.
- i) Ulva
ii) Polysiphonia
iii) Batrachospermum
iv) Spirogyra
- 27) ----- is a parasitic alga causing Red Rust of Tea.
- i) Nostoc
ii) Spirogyra
iii) Ulothrix
iv) Cephaleuros
- 28) The algal members of ----- shows brown colour due to the presence of phycocyanin and fucoxanthin pigments.
- i) Chlorophyta
ii) Cyanophyta
iii) Chrysophyta
iv) Phaeophyta
- 28) In Nostoc----- takes part in asexual reproduction besides nitrogen fixation.
- i) Hormogonia
ii) Akinetes
iii) Heterocysts
iv) All the above
- 29) Floridian starch is the reserve food material in -----.
- i) Chlorophyta
ii) Cyanophyta
iii) Rhodophyta
iv) Phaeophyta
- 30) ----- acts as biofertilizer.
- i) Nostoc
ii) Cercospora

- iii) Mucor
iv) Cephaleuros
- 31) Sexual reproduction is absent in -----.
- i) Nostoc
ii) Oedogonium
iii) Saragassum
iv) Polysiphonia
- 32) Iodine is obtained from -----.
- i) Gelidium
ii) Oedogonium
iii) Fucus
iv) Nostoc
- 33) Laminaria is an important source of -----.
- i) Agar-agar
ii) Iodine
iii) Gelatin
iv) None of the above
- 34) Water blooms are produced by -----.
- i) Algae
ii) Fungi
iii) Water lily
iv) None of the above
- 35) The reserve food material in algae is -----.
- i) Protein
ii) Starch
iii) Glycogen
iv) None of the above
- 36) Perfect stage or sexual reproduction is not found in -----.
- i) Ascomycotina
ii) Basidiomycotina
iii) Zygomycotina
iv) Deuteromycotina
- 37) Plant growth hormone gibberellin (GA) is obtained from a ----- *Gibberella fujikuroi*.
- i) alga
ii) fungus
iii) bryophyte
iv) pteridophyte
- 38) Somatic mycelium of ----- is coenocytic, aseptate and branched.
- i) Mucor
ii) Cercospora
iii) Neurospora
iv) Aspergillus
- 39) The fruiting body in *Penicillium* is -----.
- i) Apothecium
ii) Cleistothecium
iii) Sclerotium
iv) Perithicium
- 40) Heterothallism occurs in -----.
- i) Nostoc
ii) Cercospora
iii) Mucor
iv) Cephaleuros
- 41) ----- fungus is used as a genetic tool.
- i) Aspergillus
ii) Neurospora
iii) Cercospora
iv) Mucor

- 42) In *Penicillium* conidia are developed on -----.
- | | |
|--------------|-------------------|
| i) germ tube | ii) sterigmata |
| iii) stalk | iv) None of these |
- 43) Asexual reproduction in ----- takes place by the formation of conidia on conidiophores.
- | | |
|-------------------------|-----------------------|
| i) Mucor | ii) Puccinia |
| iii) <i>Penicillium</i> | iv) <i>Cercospora</i> |
- 44) Fungi growing on cattle or animal dung are called as ----- fungi.
- | | |
|------------------|------------------|
| i) aquatic | ii) parasitic |
| ii) entomogenous | iv) coprophilous |
- 41) Fungi growing on insects are called as ----- fungi.
- | | |
|------------------|------------------|
| i) symbiotic | ii) terrestrial |
| ii) entomogenous | iv) coprophilous |
- 42) ----- fungi grow on cattle or animal dung.
- | | |
|------------------|------------------|
| i) symbiotic | ii) terrestrial |
| ii) entomogenous | iv) coprophilous |
- 43) The closed fruiting body (ascocarp) is also called -----.
- | | |
|---------------------|----------------|
| i) Perithecium | ii) Apothecium |
| iii) Cleistothecium | iv) Sclerotium |
- 44) ----- show symbiotic association between an alga and a fungus.
- | | |
|--------------|----------------|
| i) Bacteria | ii) Viruses |
| iii) Lichens | iv) Mycoplasma |
- 46) Polyporous and *Ganoderma* causes ----- to higher plants.
- | | |
|-------------|----------------|
| i) wood rot | ii) blight |
| iii) blast | iv) collar rot |
- 47) A flask shaped fruiting body of ascomycetes is called as -----.
- | | |
|-----------------|--------------------|
| i) Apothecium | ii) Cleistothecium |
| iii) Sclerotium | iv) Perithicium |
- 48) Zygosporangium of *Mucor* germinates to form -----.
- | | |
|----------------|--------------|
| i) Promycelium | ii) Mycelium |
| iii) Germ tube | iv) Hyphae |
- 49) In *Penicillium* conidia are developed on -----.
- | | |
|--------------|-------------------|
| i) germ tube | ii) sterigmata |
| iii) stalk | iv) None of these |

50) The disease ----- is caused by a fungus.

- i) Aspergillosis
- ii) Tuberculosis
- iii) Small Pox
- iv) Dengue

51) ----- is Commercial source of organic acids like citric acid, fumaric acid and oxalic acid.

- i) Penicillium
- ii) Neurospora
- iii) Cercospora
- iv) Mucor

Q.2 Broad Questions

- 1) Discuss general characters and structure of viruses.
- 2) Discuss in brief types of viruses.
- 3) Explain different modes of replication in common viruses.
- 4) Describe the structure of T₄ Bacteriophage. Add a note on its replication.
- 5) Describe the structure, transmission, replication of TMV.
- 6) Discuss economic importance of Viruses.
- 8) Explain sexual reproduction in Bacteria.
- 9) Explain the general characters of bacteria.
- 10) Explain in brief cell structure and function of bacteria.
- 11) Describe structure of typical bacterial cell. Add a note on types of bacteria.
- 12) Discuss salient features of Algae.
- 13) Give structure of thallus and reproduction in Spirogyra.
- 14) Describe structure of thallus and reproduction in Nostoc.
- 15) Discuss diversity in habitats of lower plants.
- 16) Give an account of classification of Algae.
- 17) Give an account of classification of Fungi.
- 18) Discuss life cycle of Penicillium.
- 19) Describe structure of thallus and sexual reproduction in Mucor.
- 20) Give structure of thallus and reproduction in Penicillium.

Q.3 Short Notes

- 1) Spikes and fibrils of Viruses.
- 2) Helical symmetry of viruses.
- 3) DNA viruses.

- 4) RNA viruses.
- 5) T₄ Bacteriophage.
- 6) TMV.
- 7) Replication of T₄ Bacteriophage.
- 8) Lysogenic Cycle
- 9) Management of TMV
- 10) Positive importance of viruses.
- 11) Negative importance of viruses.
- 12) Plasmid.
- 13) T₄ Bacteriophage.
- 14) Negative Importance of Bacteria.
- 15) Sexual reproduction in Bacteria.
- 16) Positive importance of Bacteria.
- 17) Negative importance of Bacteria.
- 18) Classification of Algae.
- 19) Lateral Conjugation in Spirogyra.
- 20) Positive Importance of Algae.
- 21) Thallus structure of Nostoc.
- 22) Reproduction in Nostoc.
- 23) Asexual reproduction in Nostoc.
- 24) Sexual reproduction in Spirogyra.
- 25) Positive Importance of Fungi.
- 26) Negative Economic Importance of Fungi.
- 27) Asexual Reproduction in Mucor.
- 28) Asexual reproduction in Penicillium.