Exercise-1

✍ **Marked Questions are for Revision Questions.**

ONLY ONE OPTION CORRECT TYPE

SECTION - A # KINGDOM - MONERA

1.✍ During conjugation, bacteria attach by means of.
(1) Flagella (2) Pili (3) Cilia (4) Hair

2. A parasite which becomes saprophytic in the absence of host is called
(1) Obligate parasite (2) Facultative parasite
(3) Obligate saprophyte (4) Facultative saprophyte.

3.✍ Ribosomes of Nostoc are
(1) 50 S (2) 60 S (3) 70 S (4) 80 S

4. All bacterial cells get stained with
(1) Mercuric chloride (2) Crystal violet
(3) Crystal violet + iodine (4) Safranin

5.✍ Mucopeptide is abundant in cell wall of
(1) Cyanobacteria (2) Gram (+) bacteria (3) Gram (-) bacteria (4) Bacteriophage

6.✍ Bacteria obtaining energy by oxidation of inorganic substances are
(1) Chemo-lithotrophs (2) Chemo-organotrophs (3) Photo-lithotrophs (4) Photo-organotrophs

7.✍ Which one does not evolve oxygen
(1) Photosynthetic bacteria (2) Blue Green algae
(3) Green algae (4) Autotrophic plants

8.✍ Peritrichous bacteria have flagella
(1) All over the body (2) At one end (3) Both ends (4) None

9.✍ Prokaryotic genetic material is
(1) Linear DNA + histones (2) Circular DNA + histones
(3) Linear DNA without histones (4) Circular DNA without histones

10.✍ Bacterial photosynthesis differs from photosynthesis of others in
(1) First product (2) Number of phases (3) Type of reductant (4) All the above

11.✍ Nitrogen fixation is performed by
(1) Green algae and fungi (2) Ferns and cycads
(3) Legumes and cereals (4) Blue-green algae and bacteria

12.✍ The bacterium (*Clostridium botulinum*) that causes botulism is
(1) Obligate aerobe (2) Facultative aerobe
(3) Facultative anaerobe (4) Obligate anaerobe

13. Bacterium associated with legume roots is
(1) Rhizobium (2) Nostoc (3) *Spirogyra* (4) Clostridium

14. Bt gene occurs in
(1) *Bacillus thuringiensis* (2) *Escherichia coli*
(3) *Agrobacterium tumefaciens* (4) *Rhizobium leguminosarum*

15. Which of the following statement is/are correct with respect to Bacteria
(a) Bacteria are the main members of the Kingdom Monera
(b) Bacteria occur almost everywhere
(c) Bacteria are the most abundant micro organism
(d) 80 S type of Ribosome are present in bacteria
(1) a & d (2) b & d (3) a, b, c (4) b, c, d

16. Which statement is/are wrong with respect to Archaebacteria.
(a) Archaebacteria differ from other bacteria in having a different cell wall structure.
(b) Feature of cell wall is responsible for their survival in extreme conditions.
(c) Methanogens are present in the guts of several ruminant animals such as cow & buffalo.
(d) These are oldest of the living fossils.
(e) Peptidoglycan & muramic acid are present in cell wall
(1) a and e (2) b and e (3) a, b and c (4) only e

SECTION - B # KINGDOM - PROTISTA

1. The diatomaceous earth is used for insulating boilers and steam pipes because
(1) The diatomaceous earth is very cheap (2) It is a good conductor of heat
(3) It is a bad conductor of heat (4) It is composed of calcium carbonate

2. Protists which are diploid reproduce sexually by the process of
(1) Zygotic meiosis (2) Cyst formation (3) Binary fission (4) Gametic meiosis

3. Diatoms are also known as
(1) Blue-green algae (2) Red algae (3) Golden brown algae (4) Green algae

4. Formation of diatomaceous earth has occured due to remains of the following part of diatoms
(1) Cell wall (2) Cytoplasm (3) Chloroplast (4) None of the above

5. The protists in which cell size decreases with each division are
(1) Dinoflagellates (2) Diatoms (3) Slime molds (4) Radiolarians

6. Bivalved siliceous shell of frustule occurs in
(1) Diatoms (2) Radiolarians (3) zooflagellates (4) Archaebacteria

7. Rejuvenescent cells (auxospores) occur in
(1) Diatoms (2) Radiolarians (3) Bacteria (4) Virus

8. Diatoms do not decay as readily as most other algae because
(1) They are non living cells (2) They have waterproof cell walls
(3) They have siliceous cell walls (4) They have mucilaginous cell walls

9. PSP (Paralytic shellfish poisoning) is connected with
(1) *Gonyaulax* (2) *Ceratium* (3) *Noctiluca* (4) *Glenodinium*

10. Fire algae are members of
(1) Phaeophyceae (2) Dinophyceae (3) Rhodophyceae (4) Bacillariophyceae.

11. Cod liver oil is derived from
(1) Diatoms (2) Dinoflagellates (3) Euglenoids (4) All the above

12. Mesokaryon is
(1) A nucleus like structure
(2) Nucleoid with condensed chromosomes
(3) A nucleus with condensed chromosomes
(4) A nucleoid with distinct chromosomes.

13. In dinophyceae the two flagella are
(1) Anterior
(2) One transverse and other vertical
(3) Lateral
(4) Posterior.

14. Photosynthetic protists belong to
(1) Bacillariophyceae
(2) Bacilariophyceae and euglenophyceae
(3) Bacillariophyceae, euglenophyceae and dinophyceae
(4) Zooflagellates.

15. Food reserve of diatoms is
(1) Starch (2) Chrysolaminarin (3) Paramylon (4) Glycogen

16. Mixotrophic nutrition is present in
(1) *Navicula* (2) *Amoeba* (3) *Paramecium* (4) *Euglena*

17. Protistans are connecting link between
(1) Plants and animals
(2) Fungi and plants
(3) Monoerans and kingdoms of multicellular organisms
(4) Fungi and animals.

18. Which statement is/are **wrong** with respect to kingdom protista.
(i) All single celled eukaryotes are placed under protista
(ii) The boundaries of this kingdom are not well defined.
(iii) Chrysophytes, dinoflagellated, Euglenoids, slimemoulds and protozoans are included under protista.
(iv) All protista are eukaryotic, achlorophyllous, heterotrophic, nonvascular organism.
(1) only (ii) (2) only (iii) (3) only (iv) (4) None of these

19. Match Column I with Column II

Column-I	**Column-II**
(i) Chrysophytes	(a) Absence of cell wall
(ii) Dinoflagellates	(b) Golden algae
(iii) Euglenoids	(c) *Gonyaulax*
(iv) Slime moulds	(d) Saprophytic protists.

(1) (i) a (ii) b, (iii) c, (iv) d
(2) (i) b (ii) c, (iii) a, (iv) d
(3) (i) b (ii) c, (iii) d, (iv) a
(4) (i) c (ii) a, (iii) b, (iv) d

20. Slime moulds are _____(i)_____protists. The body moves along decaying twigs and leaves engulfing organic material under suitable conditions, they form an aggregation called_____(ii)_____which may grow and spread over several feet.

In above question (i) & (ii) are respectively.

(1) (i) Autotrophic, (ii) *plasmodium*

(2) (i) Chemosynthetic autotrophic (ii) *plasmodium*

(3) (i) Saprophytic, (ii) Phycobiont

(4) (i) saprophytic, (ii) *plasmodium*

21. Majority of Euglenoids are Fresh water organisms found in stagnant water. Instead of cell wall, they have a protein rich layer called _____(a)_____which makes their body flexible. They have _____(b)_____flagella; (a) & (b) are respectively.

(1) (a) Pellicle (b) One

(2) (a) Pellicle, (b) Three

(3) (a) Gelatinous sheath, (b) Two

(4) (a)Pellicle (b) Two

22. Contractile vacuoles in protozoans primarily serve the function of

(1) Excretion (2) Water circulation

(3) Osmoregulation (4) Water absorption

23. Pseudopodia are commonly formed in

(1) *Amoeba* only (2) A variety of protozoans only

(3) A variety of protozoans and leucocytes (4) *Amoeba* and leucocytes only

24. Which class of Protozoa includes all parasitic forms?

(1) Mastigophora (2) Ciliata (3) Sporozoa (4) Sarcodina

25. Locomotory organs are absent in

(1) Sporozoa (2) Ciliates (3) Rhizopoda (4) Zooflagellates

26. While doing some experiment with *Amoeba proteus* in a culture medium, it was found that the contractile vacuole of the protozoan disappeared although the other organelles showed normal activity. This must have happened most probably due to

(1) Change in the temperature of the medium

(2) Change in the pH of the medium

(3) Dilution of the medium with tap water

(4) Dilution of the medium with sea water

27. In *Amoeba*, the reproduction in unfavourable condition, three-layered cyst structure formed. This is called

(1) Sporulation (2) Encystment (3) Conjugation (4) Regeneration

28. *Entamoeba histolytica* is found in man in

(1) Colon (2) Small intestine (3) Oral cavity (4) Stomach

29. Protozoa reproduce by several methods. Which protozoan reproduces both by binary fission and conjugation?

(1) *Amoeba* (2) *Euglena* (3) *Monocystis* (4) *Paramoecium*

30. Macro and micronuclei are the characteristic feature of
(1) *Paramoecium* and *Vorticella* (2) *Opalina* and *Nyctotherus*
(3) *Hydra* and *Balantidium* (4) *Vorticella* and *Plasmodium*

31. Which one of the following is not involved in the nutrition of *Amoeba*?
(1) exocytosis (2) phagocytosis (3) saprotrophy (4) intracellular digestion

32. Common feature of *Euglena*, *Amoeba*, *Trypanosoma* and *Entamoeba* is
(1) binary fission (2) multiple fission (3) holozoic nutrition (4) contractile vacuole

33. Which one of the following statements is correct?
(1) Tse-tse fly spreads Kala-azar
(2) Sand fly spreads sleeping sickness
(3) *Trichonympha* a symbiotic protozoan is found in the gut of termite
(4) *Pediculus humanus* corporis is an endoparasite

34. Slipper animalcule is
(1) *Paramoecium* (2) *Trypanosoma* (3) *Entamoeba* (4) Protozoa

SECTION - C # KINGDOM-FUNGI

1. The fungi growing on faecal matter are called
(1) Coprophilous (2) Saprophyte (3) Parasite (4) Symbiont

2. Which of these is unicellular fungi
(1) *Yeast* (2) *Synchytrium* (3) (1) and (2) both (4) None of these

3. Absorptive nutrition is found in
(1) Plants (2) Fungi (3) Bacteria (4) All the above

4. What happens in dikaryotisation
(1) Fusion of two nuclei in cell
(2) Separation of two nuclei in cell
(3) Transfer of nucelus from one type of cell to another type of cell
(4) Each cell of the hyphae becoming dikaryotic

5. The ascospores are the type of spores
(1) Asexual (2) Sexual (3) Vegetative (4) None of these

6. Sex organs of advanced fungi are -
(1) Well developed (2) Under developed (3) Absent (4) Very complex

7. Where the basidiospores are formed
(1) In basidium (Endogenous) (2) On basidium (exogenous)
(3) In basidiocarp (4) On basidiocarp

8. Which of the following statement is false about conidia
(1) Conidia are formed in basipetal/acropetal succession
(2) Conidia are non motile
(3) Conidia are generally unicellular sometimes multicelled
(4) Conidia are sexual reproductive structures

9. The classification of fungi is mainly based on
(1) Septation in mycelium (2) Fruiting body
(3) Types of spores (4) All the above

10. In which of the following fungal groups the cell wall is made up of cellulose
(1) Zygomycetes (2) Basidiomycetes (3) Oomycetes (4) Ascomycetes

11. The existence of *Pinus* plants is due to
(1) *Boletus* (2) *Agaricus* (3) *Aspergillus* (4) None of these

12.^ Which of these are poisonous fungi
(1) *Helvella* (2) *Amanita* (3) *Agaricus* (4) *Fusarium*

13. What is the characterstic feature of imperfect fungus
(1) Absence of true necleus (2) Absence of cell wall
(3) Absence of sexual reproduction (4) Absence of fructification

14. Which fungus is important for making bread
(1) *Rhizopus* (2) *Mucor* (3) *Yeast* (4) *Neurospora*

15. Which of these is used in making wine
(1) *Yeast* (2) Bacteria (3) Both of above (4) False *yeast*

16. Which enzyme in *Yeast* is responsible for fermentation
(1) Zymase (2) Protease (3) Lipase (4) Invertase

17. Penicillin is obtained from
(1) *Penicillium notatum* (2) *P. griseofulvum* (3) *P. fumigatus* (4) All the above

18. Late blight of potato disease is caused by
(1) *Peranospora* (2) *Phytophthora infestans*
(3) *Synchytrium endobioticum* (4) *Alternaria solani*

19. Rust of Wheat is due to
(1) *Albugo candida* (2) *Puccinia graminis*
(3) *Cephaleuros viriscence* (4) None of the above

20. Which of these is called polymorphic fungus
(1) *Puccinia* (2) *Ustilago* (3) *Agaricus* (4) *Claviceps*

21. Which fungus and destruction of which crop caused the severe famine of Ireland
(1) *Alternaria* solani - Early blight of potato
(2) *Phytophthora infestans* - Late blight of potato
(3) *Helminthosporium oryzae* - Brown leaf spot of rice
(4) *Puccinia graminis tritici* - Black rust wheat

22. Due to which disease the famous Bengal famine occured
(1) Black rust of wheat (2) Smut of wheat
(3) Brown leaf spot of rice (4) Black wart disease of potato

23. In which fungal group clamp connections are found
(1) Ascomycetes (2) Basidiomycetes (3) Both of above (4) Deuteromycetes

24. Which fungus is called as puff ball

(1) *Lycoperdon* (2) *Lycopodium* (3) *Polyporus* (4) *Lycopersicum*

25. Which is called as the weed of laboratory

(1) *Penicillium* (2) *Rhizopus* (3) *Mucor* (4) *Aspergillus niger*

26. What is wrong about *Neurospora crassa*

(1) Genetic fungus (2) Drosophila of plant kingdom

(3) Bakery fungus (4) None of the above

27. Which is called as budding fungus

(1) *Synchytrium* (2) *Yeast*

(3) *Schizosaccaromyces* (4) *Neurospora*

28. Which are the pioneers of rock vegetation

(1) Lichen (2) Algae (3) Herbs (4) Grasses

29. Read the following statement (A-D)

(A) Cell wall of Fungi consists of chitin or fungal cellulose.

(B) Most fungi are heterotrophic

(C) Fungi can also live as symbionts in association with algae as lichens and with roots of higher plants as mycorrhiza

(D) Fusion of two nuclei called plasmogamy

How many of the above statement are correct?

(1) Two (2) Three (3) Four (4) one

30. The sexual cycle in fungi involves three steps, which statement is/are correct

(A) Fusion of protoplasm between two motile or nonmotile gamete called karyogamy

(B) Fusion of two nuclei called plasmogamy

(C) Meiosis in zygote resulting in haploid spores–

(1) A & B (2) B & C (3) A & C (4) only C

31. Match the classes of fungi given in **Column I** with their common names given in **Column II**

Column I	Column II
(i) Phycomycetes	(a) Imperfect fungi
(ii) Ascomycetes	(b) Club fungi
(iii) Basidiomycetes	(c) Sac fungi
(iv) Deuteromycetes	(d) Algal fungi

Options -

(1) (i) a (ii) b (iii) c (iv) d

(2) (i) d (ii) c (iii) b (iv) a

(3) (i) c (ii) b (iii) d (iv) a

(4) (i) b (ii) a (iii) c (iv) d

SECTION - D # VIRUS

1. Which of the following is acellular organism without cell organisation
(1) Porifers (2) Bacteria (3) Viruses (4) Rickettsia

2. TMV has
(1) dsDNA + Protein (2) ssRNA + Protein (3) ssDNA + Protein (4) dsRNA + Protein

3. Chemically viruses are
(1) carbohydrates (2) glycoproteins (3) lipopolysaccharides (4) nucleoproteins

4. Pick up the correct statement about viruses.
(1) They are neither living nor non living and transitional/midway between non livings and livings.
(2) They resemble the living organisms in the intracellular state and non living chemicals in the extracellular state.
(3) They are obligate intracellular parasites at genetic level, have either DNA or RNA and reproduce inside the host only.
(4) All are correct.

5. Mycoplasma differs from viruses in
(1) lacking cell wall
(2) occurring in nature
(3) filterable through Chamberland's bacteria proof filters
(4) having both DNA and RNA

6. Who is considered to be the father of virology?
(1) Ivanowski (2) Stanley (3) Beijerinck (4) Pasteur

7. What is absent in viruses?
(1) DNA (2) RNA
(3) Proteins and enzymes (4) Cytoplasm & membranes

8. Viruses usually infect all parts of plants except
(1) shoot appendages (2) root apex (3) shoot apex (4) phloem

9. HIV (Human immunodeficiency virus) causing AIDS contains a protein coat and genetic material in the form of two molecules of
(1) dsDNA (2) ssRNA (3) ssDNA (4) dsRNA

10. TMV has a size of
(1) 50 x 10 nm (2) 100 x 20 nm (3) 300 x 18 nm (4) 300 x 10 nm

11. Viruses cannot multiply of their own or be grown in vitro on artificial medium because they
(1) are dead
(2) donot have sex organs and gametes
(3) lack genetic material
(4) lack cellular machinery to use their own genetic material

12. TMV is a rod like largest plant ribovirus. The number of capsomeres in its capsid is
(1)12 (2) 2130 (3) 6500 (4) 16

13. An enzyme found at the tip of tail of bacteriophages is
(1) protease (2) lysozyme (3) replicase (4) reverse transcriptase

14. DNA in bacteriophages is double stranded (ds) and linear and lies in
(1) head (2) tail (3) head and tail both (4) tail tube

15. In phage culture
(1) whole virion enters in the bacterial cell
(2) only DNA of the phage virus enters in bacterial cell
(3) only protein part of phage virus enters in host cell
(4) only tail part enters in the host cell

16. Viruses are haploid having only one genome. Which group of viruses is diploid and have two genomes
(1) retroviruses (2) reoviruses (3) riboviruses (4) zoophages.

17. A retrovirus on injecting its RNA into host cell starts synthesing a single (–) ve strand of DNA which is called
(1) cDNA(copy DNA) (2) sDNA (synthetic DNA)
(3) r-DNA (reverse DNA) (4) reverse RNA

18. Double stranded DNA as genetic material is found in some plant viruses like
(1) TMV (2) Potato virus X and Y
(3) Banana bunchy top virus (4) Cauliflower and Dahlia mosaic virus

19. A viral DNA can be made radioactive
(1) by culturing the virus on a medium containing p_{32}
(2) by culturing a virus on medium containing potato, dextrose and p_{32}
(3) by providing the p_{32} to bacterium which is to be infected by a virus
(4) by providing p_{32} to virus when it is about to attack the bacteria.

20. Animal virus mostly contains
(1) RNA (2) DNA (3) RNA or DNA (4) both RNA and DNA

21. Rous Sarcoma virus, the first oncogenic virus discovered by Peyton Rous, contains
(1) DNA (1) (2) DNA (2) (3) RNA (1) (4) RNA (2)

22. Plant viruses mostly have
(1) DNA (2) RNA (3) DNA or RNA (4) coiled DNA

23. Bacteriophage T_2 contains
(1) ds DNA (2) ss DNA (3) ss RNA (4) ds RNA

24. Transfer of genetic material from one bacterium to another through a bacteriophage virus is called
(1) transformation (2) transduction (3) sexduction (4) conjugation

25. The enzyme needed for the production of cDNA from RNA is
(1) RNA polymerase (2) RNA helicase
(3) Reverse transcriptase (4) DNA polymerase

26. A prophage is formed in
(1) lytic cycle (2) lysogenic cycle (3) both (1) and (2) (4) neither (1) nor (2)

27. Prions are viruses that have only
(1) protein coat and no nucleic acid (2) core of nucleic acid
(3) lipoprotein coat (4) few genes

28. Prions are composed largely of
(1) ssRNA (2) P_rP-protein (3) ssDNA (4) P_rP-lipoprotein

29. Which of the following is plant viral disease
(1) Tristeza (root rot) of *Citrus* (2) Banana bunchy top
(3) Yellow vein mosaic of Bhindi (4) All of the above

30. Viruses are not affected by antibiotics because
(1) They have no metabolism of their own (2) They have no cytoplasm and genetic material
(3) They are nonliving entities (4) They are obligate superparasites.

MISCELLANEOUS QUESTIONS

1. Which one is prokaryote
(1) *Chlorella* (2) *Prosopis* (3) *Paramecium* (4) *Nostoc*

2. Flagella are absent in
(1) Chlorophyta (2) Cyanophyta (3) Phaeophyta (4) Euglenophyta

3. Multicellular fragment of a blue green alga capable of growth into new plant is
(1) Hormocyst (2) Trichome (3) Trichogyne (4) Hormogonium

4. Bacteria have cell membrane made of
(1) Chitin (2) Cellulose
(3) Proteins and phospholipids (4) Fats.

5. Which one is autotrophic.
(1) *Clostridium* (2) *Rhizobium* (3) *Anabaena* (4) *Azotobacter*.

6. Bacteria that survive high salt concentration and temperature are
(1) Cyanobacteria (2) Archaebacteria (3) Eubacteria (4) Actinomycetes

7. Inner wall of Gram (–) bacteria is formed of
(1) Lipoprotein (2) Mucopeptide (3) Chromoprotein (4) Glycoprotein.

8. Feeding on dead and decaying organisms is a nutrition called
(1) Autotrophic (2) Saprotrophic (3) Parasitic (4) Holozoic.

9. A bacterial cell divides once every minute. It takes one hour to fill a cup. How much time will it take to fill half the cup?
(1) 59 minute (2) 30 minutes (3) 29 minutes (4) 20 minutes.

10. Extrachromosomal DNA of bacteria is
(1) Mesosome (2) Micrososme (3) Plasmid (4) Chromosome.

11. PPLO is
(1) Virus (2) Viroid (3) Mycoplasma (4) bacteria

12. Which is source of Vitamin B_{12}

(1) *Pseudomonas* (2) *Spirulina* (3) *Nostoc* (4) *Oscillatoria*

13. Match the columns and choose the correct combination

	Column I		**Column II**
(a)	*Escherichia coli*	(i)	nif gene
(b)	*Rhizobium meliloti*	(ii)	Digest hydrocarbons of crude oil
(c)	*Bacillus thuringiensis*	(iii)	Human insulin production
(d)	*Pseudomonas putida*	(iv)	Biocontrol of fungal disease
		(v)	Biodegradable insecticide.

(1) (a)–(iii), (b) – (i), (c)–(v), (d)–(iv) (2) (a)–(i), (b) – (ii), (c)–(iii), (d)–(iv)

(3) (a)–(iii), (b) – (i), (c)–(v), (d)–(ii) (4) (a)–(ii), (b) – (i), (c)–(iii), (d)–(iv)

14. Pigments phycocyanin and phycoerythrin occur in

(1) Bacillariophyceae (2) Archaebacteria (3) Eubacteria (4) Cyanophyceae

15. Photosynthetic pigments of bacteria are located in

(1) Cytoplasm (2) Thylakoid membranes

(3) Ribosomes (4) Chloroplast membrane

16. Penicillin has inhibitory effect over bacteria by

(1) Destruction of nucleus (2) Inhibition of cell wall synthesis

(3) Stopping entrance of antibody (4) None of the above

17. Sexual reproduction is absent in

(1) Xanthophyta (2) Cyanophyta (3) Chloropohyta (4) Rhodophyta

18. Which amino acid in present only in bacteria and cyanobacteria

(1) Glycine (2) Tyrosine

(3) Glutamic acid (4) Diaminopimellic acid

19. Teichoic acid is present in

(1) Cell wall of Gram positive bacteria (2) Cell wall of Gram negative bacteria

(3) Capsid of virus (4) Protoplasm of mycoplasma

20. Blue green algae belong to this kingdom

(1) Plantae (2) Protista (3) Fungi (4) Monera

21. Mycoplasmas are sensitive to

(1) Tetracyclines (2) Penicillin (3) Sugars (4) Amino acids

22. The capsid of virus is synthesized on

(1) Nucleus of the virus (2) Ribosomes of the host

(3) Mitochondria of the host (4) Plasma membrane of the host

23. In paddy fields biological nitrogen fixation is chiefly brought by

(1) Cyanobacteria (2) Green algae (3) Mycorrhiza (4) Rhizobium

24. Chlorophyll containing euglenoid species are
(1) Facultative autotrophs (2) Obligate autotrophs
(3) Obligate heterotrophs (4) Facultative heterotrophs.

25. Kingdom protists includes
(1) Life cycle showing sporic meiosis (2) Life cycle showing zygotic meiosis
(3) Life cycle showing gametic meisosis (4) Both 2 and 3.

26. Progressive diminishing size of diatoms is prevented by production of
(1) Auxospores (2) Arthrospores (3) Zoospores (4) Basidiospores.

27. The thalloid body of slime mould (myxomycetes) is known as
(1) *Plasmodium* (2) Protonema (3) Fruiting body (4) Mycelium.

28. Which of the following is not a protist
(1) *Amoeba* (2) *Taenia* (3) *Paramecium* (4) *Euglena*

29. Which is correct about cell wall of bacteria and fungi both have
(1) Glycopeptide (2) N-acetylglucosamine
(3) N-acetylglucosamine and cellulose (4) Chitin.

30. Mushroom is
(1) Saprophyte (2) Facultative parasite (3) Obligate parasite (4) Phagotroph.

31. *Yeast* is important source of
(1) Proteins (2) Riboflavin (3) Vitamin C (4) Sugars.

32. In an ascus of ascomycetes, number and arrangement of ascopores are
(1) 8 in linear order (2) 4 in linear order
(3) both 1 and 2 (4) 8 or 4, linear order or unordered.

33. In *Agaricus*, the largest phase of nuclear conditions is
(1) n (2) 2 n (3) n + n (4) 3 n

34. Fungi differ from other kingdoms in being
(1) Unicellular consumers (2) Unicellular decomposers
(3) Multicellular consumers (4) Multicellular decompsers.

35. Match the columns

(a)	Early Blight of Potato	(i)	*Puccinia graminis*
(b)	Late Blight of Potato	(ii)	*Ustilago tritici*
(c)	Smut of Wheat	(iii)	*Phytophthora infestans*
(d)	Rust of Wheat	(iv)	*Alternaria solani*

(1) (a) – (i), (b) – (ii), (c)– (iii), (d) – (iv) (2) (a) – (iv), (b) – (iii), (c) – (ii), (d) – (i)
(3) (a) – (ii), (b) – (iii), (c)– (i), (d) – (i) (4) (a) – (iv), (b) – (ii), (c)– (iii), (d) – (i)

36. The deadlist mushroom is
(1) *Agaricus* (2) *Amanita* (3) *Pleurotus* (4) *Volvariella*.

37. Zygospore is formed from
(1) Gametangial copulation (2) Gametic union
(3) Zygote (4) Oogamy

38. Which is not found in mushroom
(1) Eukaryotic structure (2) Dikaryotic mycelium
(3) Basidiospores (4) Ascospores.

39. *Puccinia* infection from Barberry to Wheat occurs through
(1) Teleutospores (2) Uredospores (3) Aeciospores (4) Pycniospores

40. A fungus which grows on a host but can also subsist on organic matter is
(1) Obligate parasite (2) Obligate saprophyte
(3) Facultative saprophyte (4) Facultative parasite.

41. Mycorrhiza generally occurs in
(1) Alkaline soils (2) Acidic soils (3) Oligotrophic soils (4) Eutrophic soils.

42. Clamp connections are found in
(1) Phycomycetes (2) Ascomycetes (3) Basidiomycetes (4) Deuteromycetes

43. Which one of the following is not commercially produced by *Yeast*?
(1) Enzyme (2) Vitamin (3) Hormone (4) Riboflavin

44. This fungus is not edible
(1) *Agaricus* (2) Toadstool (3) Puffballs (4) *Morchella*

45. Powdery mildew of wheat is caused by a species of
(1) *Puccinia* (2) *Erysiphe* (3) *Ustilago* (4) *Albugo*

46. Mycorrhizal association is must for growth of
(1) Mushrooms (2) Orchids (3) Sal and Teak (4) None of these

47. Viral genome incorporated and integrates with bacterial genome is refer to as
(1) Prophages (2) RNA (3) DNA (4) Both (2) and (3)

Exercise-2

1. Which of the following is true about the phytosynthetic protista? **(5th NSO I L)**
(1) Dinophyta often have cell wall made up of armor plates
(2) Bacillariophyta are commonly found as phytoplankton
(3) All of them have chlorophyll
(4) All of the above

2. The principle pigment imparting distinctive brown or olive brown colouration to the thallus of Phaeophyta is **(5th NSO I L)**
(1) Siphonoxanthin (2) Fucoxanthin (3) Necoxanthin (4) Flavoxanthin

Exercise-3

PART - I : NEET / AIPMT QUESTION (PREVIOUS YEARS)

1. Organisms which obtain energy by oxidation of reduced inorganic compounds are **(AIPMT-2002)**
(1) Photoautotrophs (2) Saprotrophs (3) Chemoautotrophs (4) Chemoheterotrophs.

2. A fungal disease that spreads by seeds and flowers is **(AIPMT-2002)**
(1) Loose smut of Wheat (2) Corn smut
(3) Covered smut of Barley (4) Soft rot of Potato.

3. Toxin is secreted during storage condition by **(AIPMT-2002)**
(1) *Fusarium* (2) *Colletotrichum* (3) *Penicillium* (4) *Aspergillus*

4. In lichen, fungus has **(AIPMT-2003,4)**
(1) Symbiotic relationship with alga (2) Epiphytic relationship with alga
(3) Saprophytic relationship with alga (4) Parasitic relationship with alga.

5. *Azolla* has a symbiotic relationship with **(AIPMT-2004)**
(1) *Chlorella* (2) *Anabaena* (3) *Nostoc* (4) *Tolypothrix*

6. Which of the following statements about viruses is correct? **(AIPMT-2004)**
(1) Viruses contain either DNA or RNA
(2) Viruses possess their own metabolic system
(3) Viruses are facultative parasites
(4) Viruses are readily killed by antibiotics

7. The most well studied bacterial-plant relationship is that of. **(AIPMT-2004)**
(1) Cyanobacterial symbiosis with some aquatic ferns
(2) Nodulation in *Sesbania* stem
(3) Gall formation by *Agrobacterium*
(4) Growth stimulation by phosphate bacteria.

8. Bacterial flagella are formed of. **(AIPMT-2004)**
(1) Amines (2) Proteins (3) Lipids (4) Carbohydrates.

9. Barophilic prokaryotes **(AIPMT-2005)**
(1) Occur in water containing high concentration of barium hydroxide
(2) Grow slowly in alkaline frozen lakes at high altitude
(3) Grow and multiply in very deep marine sediments
(4) Readily grow and divide in sea water enriched with soluble salt of barium

10. For retting of Jute, the fermenting microbe is **(AIPMT-2005)**
(1) Methanophilic bacteria (2) Butyric acid bacteria
(3) *Helicobacter pylori* (4) *Streptococcus lactin*.

11. Crown gall disease of plants is caused by **(AIPMT-2005)**
(1) Ti-plasmid (2) Pi-plasmid (3) Virus (4) Protozoan

12. Auxospores and hormocysts are formed respectively by **(AIPMT-2005)**

(1) Some diatoms and several cyanobacteria (2) Some cyanobacteria and several diatoms

(3) Several cyanobacteria and several diatoms (4) Serveral diatoms and few cyanobacteria.

13. Curing of Tea leaves is brought about by the activity of **(AIPMT-2005)**

(1) Fungi (2) Bacteria (3) Viruses (4) Mycorrhiza.

14. Which pair belongs to basidiomycetes **(AIPMT-2006)**

(1) Puffball and *Claviceps* (2) *Peziza* and Stink Horn

(3) *Morchella* and Mushroom (4) Bird Nest Fungus and Puffball

15. A filamentous nitrogen fixing bacterium is present in root nodules of non-leguminous plant **(AIPMT-2007)**

(1) *Cicer arietinum* (2) *Casurina equisetifolia*

(3) *Cycas revoluta* (4) *Crotalaria juncea.*

16. Which is wrong about mycoplasma **(AIPMT-2007)**

(1) They are called PPLO (2) They are pleomorphic

(3) They are sensitive to penicillin (4) They cause diseases in plants.

17. In the light of recent classification of living organisms into three domains of life (bacteria, archaea and eukarya), which one of the following statements is true about archaea **(AIPMT - 2008)**

(1) Archaea completely differ from both prokaryotes and eukaryotes

(2) Archaea completely differ from prokaryotes

(3) Archaea resemble eukarya in all respects

(4) Archaea have some novel features that are absent in both prokaryotes and eukaryotes.

18. *Thermococcus, Methanococcus* and *Methanobacterium* exemplify **(AIPMT-2008)**

(1) Bacteria whose DNA is relaxed or positively supercoiled but which have a cytoskeleton as well as mitochondria

(2) Bacteria that contain a cytoskeleton and ribosomes

(3) Archaebacteria that contain protein homologous to eukaryotic core histones

(4) Archaebacteria that lack any histones resembling those found in eukaryotes but whose DNA is negatively supercoiled.

19. Phylogenetic system of classification is based on **(AIPMT-2009)**

(1) Floral Characters (2) Evolutionary relationships

(3) Morphological features (4) Chemical constituents

20. Semiconservative replication of DNA was first demonstrated in **(AIPMT-2009)**

(1) *Salmonella typhimurium* (2) *Drosophila melanogaster*

(3) *Escherichia coli* (4) *Streptocccus pneumoniae*

21. The common nitrogen-fixer in paddy fields is **(AIPMT-2010)**

(1) *Azospirillum* (2) *Oscillatoria* (3) *Frankia* (4) *Rhizobium*

22. Membrane-bound organelles are absent in **(AIPMT-2010)**

(1) *Streptococcus* (2) *Chlamydomonas* (3) *Plasmodium* (4) *Saccharomyces*

23. Ringworm in humans in caused by **(AIPMT-2010)**
(1) Fungi (2) Nematodes (3) Viruses (4) Bacteria

24. Single-celled eukaryotes are included in **(AIPMT-2010)**
(1) Fungi (2) Archaea (3) Monera (4) Protista

25. A prokaryotic autotrophic nitrogen fixing symbiont is found in: **(AIPMT-Pre.-2011)**
(1) *Alnus* (2) *Cycas* (3) *Cicer* (4) *Pisum*

26. Ethanol is commercially produced through a particular species of: **(AIPMT Pre.-2011)**
(1) *Saccharomyces* (2) *Clostridium* (3) *Trichoderma* (4) *Aspergillus*

27. Which one of the following is a wrong matching of a microbe and its industrial product, while the remaining three are correct? **(AIPMT Mains-2011)**
(1) *Yeast* - statins (2) *Acetobacter aceti* - acetic acid
(3) *Clostridium butylicum* - lactic acid (4) *Aspergillus niger* - citric acid

28. The Cyanobacteria are also referred to as **(AIPMT-2012)**
(1) Proists (2) Golden algae (3) Slime moulds (4) Blue green algae

29. Maximum nutritional diversity is found in the group. **(AIPMT-2012)**
(1) Fungi (2) Animalia (3) Monera (4) Plantae

30. A nitrogen-fixing microbe associated with *Azolla* in rice fields is: **(AIPMT-2012)**
(1) *Spirulina* (2) *Anabaena* (3) *Frankia* (4) *Tolypothrix*

31. Nuclear membrane is absent in **(AIPMT-2012)**
(1) *Penicillium* (2) *Agaricus* (3) *Volvox* (4) *Nostoc*

32. Which one single organism or the pair of organisms is **correctly** assigned ot its or their named taxonomic group **(AIPMT-2012)**
(1) *Paramecium* and *Plasmodium* belong to the same kingdom as that of *Penicillium*
(2) Lichen is a composite organism formed form the symbiotic association of an algae and a protozoan
(3) *Yeast* used in making bread and beer is a fungus
(4) *Nostoc* and *Anabaena* are examples of protista

33. Which statement is **wrong** for viruses **(AIPMT-2012)**
(1) All are parasites
(2) All of them have helical symmetry
(3) They have ability ot synthesize nucleic acids and proteins
(4) Antibiotics have no effect on them

34. Select the wrong statement: **(AIPMT-2013)**
(1) Anisogametes differ either in structure, function or behaviour
(2) In Oomycetes female gamete is smaller and motile, while male gamete is larger and non-motile
(3) *Chlamydomonas* exhibits both isogamy and anisogamy and *Fucus* shows oogamy
(4) Isogametes are similar in structure, function and behaviour

35. Pigment-containing membranous extensions in some cyanobacteria are: **(NEET-2013)**
(1) Basal bodies (2) Pneumatophores (3) Chromatophores (4) Heterocysts

36. Besides paddy fields, cyanobacteria are also found inside vegetative part of: **(NEET-2013)**
(1) *Cycas* (2) *Equisetum* (3) *Psilotum* (4) *Pinus*

37. Archaebacteria differ from eubacteria in: **(AIPMT-2014)**
(1) Cell membrane structure (2) Mode of nutrition
(3) Cell shape (4) Mode of reproduction

38. Five kingdom system of classification suggested by R.H. Whittaker is not based on: **(AIPMT-2014)**
(1) Presence or absence of a well defined nucleus
(2) Mode of reproduction
(3) Mode of nutrition.
(4) Complexity of body organisation

39. The motile bacteria are able to move by: **(AIPMT-2014)**
(1) fimbriae (2) flagella (3) cilia (4) pili

40. Which of the following shows coiled RNA strand and capsomeres? **(AIPMT-2014)**
(1) Polio virus (2) Tobacco mosaic virus
(3) Measles virus (4) Retro virus

41. Viruses have: **(AIPMT-2014)**
(1) DNA enclosed in a protein coat (2) Prokaryotic nucleus
(3) Single Chromosome (4) Both DNA and RNA

42. Which one of the following matches is **correct**? **(AIPMT-2015)**

(1)	Alternaria	Sexual reproduction absent	Deuteromycetes
(2)	Mucor	Reproduction by Conjugation	Ascomycetes
(3)	Agaricus	Parasitic funus	Basidiomycetes
(4)	Phytophthora	Aseptate mycelium	Basidiomycetes

43. True nucleus is absent in : **(AIPMT-2015)**
(1) Mucor (2) Vaucheria (3) Volvox (4) Anabaena

44. The guts of cow and buffalo possess: **(AIPMT-2015)**
(1) *Chlorella* spp. (2) Methanogens (3) Cyanobacteria (4) *Fucus* spp.

45. Pick up the wrong statement: **(Re-AIPMT-2015)**
(1) Protista have photosynthetic and heterotrophic modes of nutrition
(2) Some fungi are edible
(3) Nuclear membrane is present in Monera
(4) Cell wall is absent in Animalia

46. Cell wall is absent in: **(Re-AIPMT-2015)**
(1) Funaria (2) Mycoplasma (3) Nostoc (4) Aspergillus

47. Which one is wrong statement? **(Re-AIPMT-2015)**
(1) *Mucor* has biflagellate zoospores
(2) Haploid endosperm is typical feature of gymnosperms
(3) Brown algae have chlorophyll a and c and fucoxanthin
(4) Archegonia are found in Bryophyta, Pteridophyta and Gymnosperms.

48. The imperfect fungi which are decomposer of litter and help in mineral cycling belong to: **(Re-AIPMT-2015)**

(1) Basidiomycetes (2) Phycomycetes (3) Ascomycetes (4) Deuteromycetes

49. Choose the wrong statements: **(Re-AIPMT-2015)**

(1) *Neurospora* is used in the study of biochemical genetics

(2) Morels and truffles are poisonoues mushrooms

(3) Yeast is unicellular and useful in fermentation

(4) *Penicillium* is multicellular and produces antibiotics

50. Which of the following is not a feature of the plasmids? **(NEET-I-2016)**

(1) Single – stranded (2) Independent replication

(3) Circular structure (4) Transferable

51. Which one of the following statements is wrong? **(NEET-I-2016)**

(1) Phycomycetes are also called algal fungi.

(2) Cyanobacteria are also called blue-green algae.

(3) Golden algae are also called desmids.

(4) Eubacteria are also called false bacteria.

52. Chrysophytes, Euglenoids, Dinoflagellates and slime moulds are included in the kingdom: **(NEET-I-2016)**

(1) Animalia (2) Monera (3) Protista (4) Fungi

53. One of the major components of cell wall of most fungi is : **(NEET-I-2016)**

(1) Hemicelluloses (2) Chitin (3) Peptidoglycan (4) Cellulose

54. The primitive prokaryotes responsible for the production of biogas from the dung of ruminant animals, include the: **(NEET-I-2016)**

(1) Eubacteria (2) Halophiles (3) Thermoacidophiles (4) Methanogens

55. Which of the following statements is wrong for viroids? **(NEET-I-2016)**

(1) Their RNA is of high molecular weight (2) They lack a protein coat

(3) They are smaller than viruses (4) They cause infections

56. Methanogens belong to **(NEET-II-2016)**

(1) Slime moulds (2) Eubacteria (3) Archaebacteria (4) Dinoflagellates

57. Select the wrong statement. **(NEET-II-2016)**

(1) Diatoms are microscopic and float passively in water.

(2) The walls of diatoms are easily destructible.

(3) 'Diatomaceous earth' is formed by the cell walls of diatoms.

(4) Diatoms are chief producers in the oceans.

58. Select the mismatch. **(NEET-II-2016)**

(1) Methanogens-Prokaryotes (2) Gas vacuoles-Green bacteria

(3) Large central vacuoles-Animal cells (4) Protists-Eukaryotes

59. Select the wrong statement. **(NEET-II-2016)**

(1) *Mycoplasma* is a a wall-less microorganism

(2) Bacterial cell wall is made up of peptidoglycan

(3) Pili and fimbriae are mainly involved in motility of bacterial cells

(4) Cyanobacteria lack flagellated cells

60. Which of the following rRNAs acts as structural RNA as well as ribozyme in bacterial? **(NEET-II-2016)**

(1) 5·8s rRNA (2) 5S rRNA (3) 18 S rRNA (4) 23S rRNA

61. Study the four statements (A - D) given below and select the two correct ones out of them: **(NEET-II-2016)**

A. Definition of biological species was given by Ernst Mayr.

B. Photoperiod does not affect reproduction in plants.

C. Binomial nomenclature system was given by R. H. Whittaker.

D. In unicellular organisms, reproduction is synonymous with growth.

The two correct statements are

(1) A and B (2) B and C (3) C and D (4) A and D

62. Which among the following are the smallest living cells, known without a definite cell wall, pathogenic to plants as well as animals and can survive without oxygen? **(NEET-2017)**

(1) Bacillus (2) Pseudomonas (3) Mycoplasma (4) Nostoc

63. Which of the following are found in extreme saline conditions? **(NEET-2017)**

(1) Archaebacteria (2) Eubacteria (3) Cyanobacteria (4) Mycobacteria

64. Viroids differ from viruses in having **(NEET-2017)**

(1) DNA molecules with protein coat (2) DNA molecules without protein coat

(3) RNA molecules with protein coat (4) RNA molecules without protein coat

65. Which of the following components provides sticky character to the bacterial cell? **(NEET-2017)**

(1) Cell wall (2) Nuclear membrane

(3) Plasma membrane (4) Glycocalyx

66._ Ciliates differ from all other protozoans in **(NEET-2018)**

(1) using flagella for locomotion

(2) having two types of nuclei

(3) using pseudopodia for capturing prey

(4) having a contractile vacuole for removing excess water

67._ Which of the following organisms are known as chief producers in the oceans? **(NEET-2018)**

(1) Dinoflagellates (2) Euglenoids (3) Cyanobacteria (4) Diatoms

68._ Which among the following is *not* a prokaryote? **(NEET-2018)**

(1) *Saccharomyces* (2) *Oscillatoria*

(3) *Nostoc* (4) *Mycobacterium*

69._ After karyogamy followed by meiosis, spores are produced exogenously in **(NEET-2018)**

(1) Neurospora *(2) Saccharomyces*

(3) Agaricus *(4) Alternaria*

70._ Which one is ***wrongly*** matched? **(NEET-2018)**

(1) Uniflagellate gametes – *Polysiphonia*
(2) Unicellular organism – *Chlorella*
(3) Gemmacups – *Marchantia*
(4) Biflagellate zoospores – Brown algae

71._ Select the ***wrong*** statement: **(NEET-2018)**

(1) Cell wall is present in members of Fungi and Plantae.
(2) Mitochondria are the powerhouse of the cell in all kingdoms except Monera.
(3) Pseudopodia are locomotory and feeding structures in Sporozoans.
(4) Mushrooms belong to Basidiomycetes.

72. Which of the following statements is incorrect **(NEET-1-2019)**

(1) Yeasts have filamentous bodies with Iong thread-like hyphae.
(2) Morels and truffles are edible delicacies
(3) Clabiceps is a source of many alkaloids and LSD.
(4) Conidia are produced exogenously and ascospores endogenously.

73. Which of the following statements is incorrect? **(NEET-1-2019)**

(1) Prions consist of abnormally folded proteins.
(2) Viroids lack a protein coat.
(3) Viruses are obligate parasites.
(4) Infective constituent in viruses is the protein coat

74. Which of the following is against the rules of ICBN? **(NEET-2-2019)**

(1) Hand written scientific names should be underlined.
(2) Every species should have a generic name and a specific epithet.
(3) Scientific names are in Latin and should be italized.
(4) Generic and specific names should be written starting with small letters.

75. Mad cow disease in cattle is caused by an organism which has: **(NEET-2-2019)**

(1) Inert crystalline
(2) Abnormally folded protein
(3) Free RNA without protein coat
(4) Free DNA without protein coat

76. Which of the following statements is correct? **(NEET-2-2019)**

(1) Lichens do not grow in polluted areas.
(2) Algal component of lichens is called mycobiont.
(3) Fungal component of lichens is called phycobiont.
(4) Lichens are not good pollution indicators.

77. Match the organisms in column I with habitats in column II. **(NEET-2-2019)**

Column I	**Column II**
(a) Halophiles	(i) Hot springs
(b)Thermoacidophiles	(ii) Aquatic environment
(c) Methanogens	(iii) Guts of ruminants
(d) Cyanobacteria	(iv) Salty areas

Select the correct answer from the options given below :

(1) (a)-(iv), (b)-(i), (c)-(iii), (d)-(ii)

(2) (a)-(i), (b)-(ii), (c)-(iii), (d)-(iv)

(3) (a)-(iii), (b)-(iv), (c)-(i), (d)-(i)

(4) (a)-(ii). (b)-(iv), (c)-(iii), (d)-(i)

78. Which of the following statements about methanogens is not correct? **(NEET-2-2019)**

(1) The can be used to produce biogas,

(2) They are found in the rumen of cattle and their excreta.

(3) They grow aerobically and breakdown cellulose-rich food.

(4) They produce methane gas.

PART - II : AIIMS QUESTION (PREVIOUS YEARS)

1. Structure helping lichens in respiration is **(AIIMS-2002)**

(1) Isidium (2) Soredium (3) Cephalodium (4) Cyphella.

2. Bacterium *Pseudomonas* is useful as it can. **(AIIMS-2004)**

(1) Transfer genes from one plant to other (2) Fix atmospheric nitrogen

(3) Produce several antibiotics (4) Decompose a variety of organic compounds.

3. Among rust, smut and mushroom, all the three **(AIIMS-2006)**

(1)Are pathogens (2) Are saprobes (3) Bear ascocarps (4) Bear basidiocarps.

4. In prokaryotes, chromatophores are **(AIIMS-2006)**

(1) Specialised granules responsible for colouration of cells

(2) Structures responsible for determining shape of the organism

(3) Inclusion bodies lying free in the cells for carrying out various metablic activites

(4) Internal membrane system that may become extensive and complex in photosynthetic bacteria.

5. Myxomycetes are **(AIIMS-2006)**

(1) Saprobes or parasites having mycelia, asexual reproduction by fragementation, sexual reproduction by fusion of gametes

(2) Slimy mass of multinucleate protoplasm having pseudopodia-like structures for engulphing food, reproduction through fragmentation or zoospores

(3) Prokaryotic organisms, cellular or acellular, saprobes or autotrophic, reproduce by binary fission

(4) Eukaryotic single-celled or filamatous saprobes or autotrophs, asexual reproduction by division of haploid individuals, sexual reproduction by fusion of two cells or their nuclei.

6. "Ordines Anomali" of Bentham and Hooker includes **(AIIMS-2006)**
(1) Seed plants showing abnormal forms of growth and development
(2) Plants represented only in fossil state
(3) Plants described in the literature but which Bentham and Hooker did not see in original
(4) Few orders which could not be placed satisfactorily in classification.

7. By all of the following ways bacteria become resistant to antibiotic except **(AIIMS-2009)**
(1) Making enzymes that inactivate the drug
(2) Becoming impermeable to the drug
(3) Modifying the target of the drug
(4) Moving away from the drug.

8. The outer most limiting layer of mycoplasma is made up of **(AIIMS-2009)**
(1) Cell wall (2) Cell membrane (3) Mucilaginous sheath (4) Slime layer

9. Protista differs from monera in having **(AIIMS-2010)**
(1) cell wall (2) autotrophic nutrition (3) flagella (4) nuclear membrane

10. Select the correct statement. **(AIIMS-2010)**
(1)*Acetobacter aceti* produces citric acid
(2) *Saccharomyces cerevisiae* is used as clot buster
(3) *Penicillium notatum* restrict the growth of *Staphylococci*
(4) Methanogens are found in aerobic conditions

11. Which of the following is correct? **(AIIMS-2010)**
(1) all fungi are filamentous
(2) transfer of DNA from one bacteria to another bacteria cannot take place
(3) virus cannot have both DNA and RNA
(4) protists reproduce asexually only

12. Protists obtain their food as **(AIIMS-2011)**
(1) Photosynthesizers only (2) Chemosynthesizers
(3) Heterotrophs only (4) Both (1) and (3)

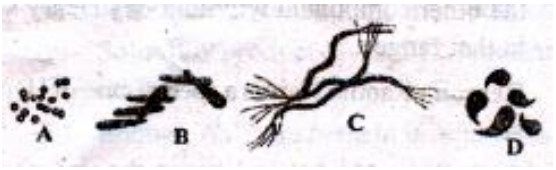
13. Photosynthetic bacteria have **(AIIMS-2011)**
(1) pigment system I (2) pigment system II
(3) Both (1) and (2) (4) some other kind of pigments, B_{890}

14. Diatoms do not decay easily because **(AIIMS-2011)**
(1) they have siliceous walls (2) their body is impervious to water
(3) they are chitinous (4) they are abundant in saline soil

15. The classification of Linnaeus was mainly based on **(AIIMS-2012)**
(1) Sepals (2) Carpels (3) Petals (4) Stamens

16. Which of the following is less general in characters as compared to genus? **(AIIMS-2013)**
(1) Species (b) Division (3) Class (4) Family

17. Choose the correct names of the different bacteria according to their shapes. **(AIIMS-2013)**



(1) A–Cocci, B–Bacilli, C– Spirilla, D–Vibrio

(2) A–Bacilli, B–Cocci, C– Spirilla, D–Vibrio

(3) A–Spirilla, B–Bacilli, C– Cocci, D–Vibrio

(4) A–Spirilla, B–Vibrio, C– Cocci, D–Bacilli

18. Which pair of the following belongs to Basidiomycetes? **(AIIMS-2013)**

(1) Puffballs and *Claviceps* (2) *Peziza* and *Alternaria*

(3) *Morchella* and Mushrooms (4) Birds fungi and Puffballs

19. Which ofthe following is correct about the slime mould? **(AIIMS-2015)**

(i) Its thalloid body, *Plasmodium* has pseudopodia for locomotion and engulfing organic matter.

(ii) During unfavourable conditions *Plasmodium* differentiates and produces fruiting bodies, sporangium.

(iii) Spores posses no true cell wall.

(iv) They are dispersed by air current.

(v) Being extremely resistant, spores survive for many years.

(vi) *Plasmodium* can grow upto several feet.

Choose the answer from the following options

(1) (i),(ii),(iv),(v) and (vi) (2) (i),(ii) and (iii)

(3) (i),(ii), (ii) and (vi) (4) (ii),(iii) and (vi)

20. Yeast is not included in protozoans but in fungi because **(AIIMS-2016)**

(1) It has chlorophyll

(2) It shows saprotrophic mode of nutrition

(3) It has eukaryotic organisation

(4) Cell wall is made up of cellulose and reserve food material is starch

21. Read the following statement regarding bacteria. **(AIIMS-2017)**

I. Bacteria exchange their genetic matter through conjugation which involve cell to cell contact.

II. Transduction in *'Salmonella* is reported by Tatum and Lederberg in 1952.

III. Citrus canker disease is caused by bacteria *Xanthomonas citri.*

IV. Hans Christian gram's staining method is based on cell wall composition of bacteria.

Choose the correct option with true statements

(1) I and III (2) I, III and IV (3) I, II and. III (4) II and IV

22. **Classical Taxonomy** is based on **(AIIMS-2017)**

(1) morphological traits (2) habitat of organisms

(3) similarities and dissimilarities of behaviour (4) phylogeny

23. Heterocyst present in *Nostoc* is specialised for **(AIIMS-2017)**

(1) fragmentation (2) nitrogen-fixation (3) symbiotic relation (4) food storage

24._ Citrus canker is caused by **(AIIMS-I-2018)**

(1) Virus (2) Fungi (3) Bacteria (4) None

25._ Match the column **(AIIMS-I-2018)**

(a) Virus	(i) Schwann
(b) Viroid	(ii) T.O. diener
(c) Cell	(iii) Pasteur
(d) Ribosome	(iv) Palade

(1) a–iii, b–ii, c–i, d–iv (2) a–ii, b–i, c–iv, d–iii

(3) a–i, b–ii, c–iii, d–iv (4) a–iv, b–iii, c–i, d–ii

26._ Which is incorrect about E.coli **(AIIMS-IV-2018)**

(1) It is diploid

(2) It is found in human intestine

(3) Transformation, Transduction, Conjugation can show

(4) Can be used in Recombinant DNA technology

27._ The genetic material of ϕ ×174 is **(AIIMS-IV-2018)**

(1) SSDNA (2) SSRNA (3) DSDNA (4) DSRNA

Answers

EXERCISE - 1

SECTION - A

1.	(2)	**2.**	(4)	**3.**	(3)	**4.**	(3)	**5.**	(2)	**6.**	(1)	**7.**	(1)
8.	(1)	**9.**	(4)	**10.**	(3)	**11.**	(4)	**12.**	(4)	**13.**	(1)	**14.**	(1)
15.	(3)	**16.**	(4)										

SECTION - B

1.	(3)	**2.**	(4)	**3.**	(3)	**4.**	(1)	**5.**	(2)	**6.**	(1)	**7.**	(1)
8.	(3)	**9.**	(1)	**10.**	(2)	**11.**	(1)	**12.**	(3)	**13.**	(2)	**14.**	(3)
15.	(2)	**16.**	(4)	**17.**	(3)	**18.**	(3)	**19.**	(2)	**20.**	(4)	**21.**	(4)
22.	(3)	**23.**	(3)	**24.**	(3)	**25.**	(1)	**26.**	(4)	**27.**	(2)	**28.**	(1)
29.	(4)	**30.**	(1)	**31.**	(3)	**32.**	(1)	**33.**	(3)	**34.**	(1)		

SECTION - C

1.	(1)	**2.**	(3)	**3.**	(4)	**4.**	(4)	**5.**	(2)	**6.**	(3)	**7.**	(2)
8.	(4)	**9.**	(3)	**10.**	(3)	**11.**	(1)	**12.**	(2)	**13.**	(3)	**14.**	(3)
15.	(1)	**16.**	(1)	**17.**	(1)	**18.**	(2)	**19.**	(2)	**20.**	(1)	**21.**	(2)
22.	(3)	**23.**	(2)	**24.**	(1)	**25.**	(4)	**26.**	(4)	**27.**	(2)	**28.**	(1)
29.	(2)	**30.**	(4)	**31.**	(2)								

SECTION - D

1.	(3)	**2.**	(2)	**3.**	(4)	**4.**	(4)	**5.**	(4)	**6.**	(2)	**7.**	(4)
8.	(3)	**9.**	(2)	**10.**	(3)	**11.**	(4)	**12.**	(2)	**13.**	(2)	**14.**	(1)
15.	(2)	**16.**	(1)	**17.**	(1)	**18.**	(4)	**19.**	(3)	**20.**	(2)	**21.**	(3)
22.	(2)	**23.**	(1)	**24.**	(2)	**25.**	(3)	**26.**	(2)	**27.**	(1)	**28.**	(2)
29.	(4)	**30.**	(1)										

MISCELLANEOUS QUESTIONS

1.	(4)	**2.**	(2)	**3.**	(4)	**4.**	(3)	**5.**	(3)	**6.**	(2)	**7.**	(2)
8.	(2)	**9.**	(1)	**10.**	(3)	**11.**	(3)	**12.**	(2)	**13.**	(3)	**14.**	(4)
15.	(2)	**16.**	(2)	**17.**	(2)	**18.**	(4)	**19.**	(1)	**20.**	(4)	**21.**	(1)
22.	(2)	**23.**	(1)	**24.**	(4)	**25.**	(4)	**26.**	(1)	**27.**	(1)	**28.**	(2)
29.	(2)	**30.**	(1)	**31.**	(2)	**32.**	(4)	**33.**	(3)	**34.**	(4)	**35.**	(2)
36.	(2)	**37.**	(1)	**38.**	(4)	**39.**	(3)	**40.**	(3)	**41.**	(3)	**42.**	(3)
43.	(3)	**44.**	(2)	**45.**	(2)	**46.**	(2)	**47.**	(1)				

EXERCISE - 2

1.	(4)	**2.**	(2)

EXERCISE - 3

PART- I

1.	(4)	**2.**	(1)	**3.**	(4)	**4.**	(1)	**5.**	(2)	**6.**	(1)	**7.**	(3)
8.	(2)	**9.**	(3)	**10.**	(2)	**11.**	(1)	**12.**	(4)	**13.**	(2)	**14.**	(4)
15.	(2)	**16.**	(3)	**17.**	(4)	**18.**	(3)	**19.**	(2)	**20.**	(3)	**21.**	(1)
22.	(1)	**23.**	(1)	**24.**	(4)	**25.**	(2)	**26.**	(1)	**27.**	(3)	**28.**	(4)
29.	(3)	**30.**	(2)	**31.**	(4)	**32.**	(3)	**33.**	(2)	**34.**	(2)	**35.**	(3)
36.	(1)	**37.**	(1)	**38.**	(2)	**39.**	(2)	**40.**	(2)	**41.**	(1)	**42.**	(1)
43.	(4)	**44.**	(2)	**45.**	(3)	**46.**	(2)	**47.**	(1)	**48.**	(4)	**49.**	(2)
50.	(1)	**51.**	(4)	**52.**	(3)	**53.**	(2)	**54.**	(4)	**55.**	(1)	**56.**	(3)
57.	(2)	**58.**	(3)	**59.**	(3)	**60.**	(4)	**61.**	(4)	**62.**	(3)	**63.**	(1)
64.	(4)	**65.**	(4)	**66.**	(2)	**67.**	(4)	**68.**	(1)	**69**	(3)	**70.**	(1)
71.	(3)	**72.**	(1)	**73.**	(4)	**74.**	(4)	**75.**	(2)	**76.**	(1)	**77.**	(1)
78.	(3)												

PART- II

1.	(3)	**2.**	(4)	**3.**	(4)	**4.**	(4)	**5.**	(2)	**6.**	(4)	**7.**	(4)
8.	(2)	**9.**	(4)	**10.**	(3)	**11.**	(3)	**12.**	(4)	**13.**	(4)	**14.**	(1)
15.	(4)	**16.**	(4)	**17.**	(1)	**18.**	(4)	**19.**	(1)	**20.**	(2)	**21.**	(2)
22.	(1)	**23.**	(2)	**24.**	(3)	**25.**	(1)	**26.**	(1)	**27.**	(1)		

Self Practice Paper (SPP)

1. Genetic recombination in bacteria mediated by a virus is known as
(1) Transformation (2) Transduction
(3) Sexduction (4) None of these

2. Members of phycomycetes are found in
i. Aquatic habitats
ii. On decaying wood
iii. Moist and damp places
iv. As obligate parasite on plants
Choose from the following options
(1) None of the above (2) i and iv
(3) ii and iii (4) All of the above

3. Citrus canker is caused by?
(1) Bacteria (2) Virus (3) Fungi (4) Algae

4. Match the following and choose the correct combination from the options given –

	Column I (Group Protista)		Column II (Example)
A.	Chrysophytes	i.	Paramaecium
B.	Dinoflagellates	ii.	Euglena
C.	Euglenoids	iii.	Gonyaulax
D.	Protozoans	iv.	Diatoms

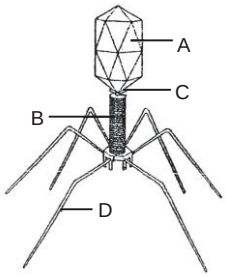
(1) A - i, B - iii, C - ii, D - iv
(2) A - ii, B - iv, C - iii, D - i
(3) A - iv, B - ii, C - iii, D - i
(4) A - iv, B - iii, C - ii, D - i

5. In which of the following the cell wall has stiff cellulose plate on the outer surface
(1) Dinoflagellates (2) Desmids (3) Diatoms (4) Euglenoids

6. Which one is autotrophic?
(1) Clostridium (2) Rhizobium (3) Anabaena (4) Azotobacter

7. Dikaryophase / Dikaryon formation is a specific characteristic of
(1) All fungi
(2) Phycomycetes and ascomycetes
(3) Only basidiomycetes
(4) Ascomycetes and basidiomycetes

8.# Given below is the diagram of a bacteriophage. In which of the options all the four parts A,B,C and D are correct



	A	B	C	D
(1)	Tail fibres	Head	Sheath	Collar
(2)	Sheath	Collar	Head	Tail fibres
(3)	Head	Sheath	Collar	Tail fibres
(4)	Collar	Tail fibres	Head	Sheath

9. Reproduction in fungi can take place by all of the following vegetative methods except

(1) Gemmae (2) Fragmentation (3) Fission (4) Budding

10. Where does meiosis occur in mushroom?

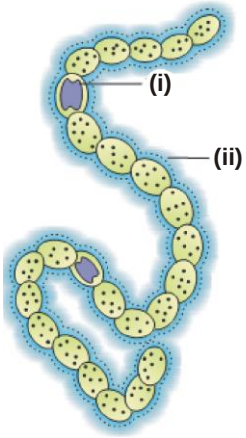
(1) Basidiospore (2) Basidium (3) Basidiocarp (4) Ascus mother cell

11. Halophiles grow in concentrated salt solution due to

(1) Bacteriorhodopsin (2) Branched hydrocarbon chain in phospholipids

(3) Active absorption (4) Accumulation of KCl

12.#



Given below the following statements about labelling (i) and (ii)

(a) Labelling (i) can fix atmospheric nitrogen even in the presence of O_2

(b) Labelling (ii) is also found around pollen grains of hydrophilous plants

(c) Labelling (i) is found is Nostoc & anabaena

(d) Labelling (i) & (ii) are features of photosynthetic autotrophs & chemosynthetic autotrophs.

In the above statements, pick up the incorrect statements about labelling (i) & (ii)

(1) a, b, c (2) b, d (3) a, d (4) b, c, d

13. In the five-kingdom classification, *Chlamydomonas* and *Chlorella* have been included in:
(1) Protista (2) Algae (3) Plantae (4) Monera

14.

Column I	**Column II**
A. Ulothrix	I. Unicellular
B. Spirogyra	II. Filamentous
C. Chlamydomonas	III. Colonial form
D. Volvox	IV. Kelps
E. Some giant marine forms	

Which combination is correct?

	A	**B**	**C**	**D**	**E**
(1)	II	II	I	III	IV
(2)	I	II	III	IV	IV
(3)	I	I	II	III	IV
(4)	IV	IV	III	II	I

15. Fungus used in genetic experiments is
(1) Rhizopus (2) Mucor (3) Neurospora (4) Claviceps

16. Eubacteria do not posses:
(1) Plasma membrane (2) cell wall (3) Mitochondria (4) Peptidoglycan

17. TMV has
(1) dsDNA + Protein (2) ssRNA + Protein (3) ssDNA + Protein (4) dsRNA + Protein

18. T.O. Diener discovered a
(1) Bacteriophage (2) Free infectious RNA
(3) Free infectious DNA (4) Infectious protein

19. Choose the correct set of bacterial disease:
(1) Mumps, Cholera, dengue (2) Chicken Pox, typhoid, mumps
(3) Mumps, tetanus, chicken pox (4) Cholera, typhoid, tetanus

20. Which among the following group of organisms show a great diversity in morphology and habitat.
(1) Chrysophytes (2) Dinoflagellates (3) Protozoan Protists (4) Fungi

21. Which place bacteria are not found–
(1) Soil (2) Ice (3) Sea (4) Distilled water

22. In 5-kingdom classification, the kingdom that includes the blue-green algae, nitrogen fixing bacteria and methanogenic archaebacteria, is.
(1) Plantae (2) Fungi (3) Protista (4) Monera

23. In the five-kingdom classification, *Chlamydomonas* and *Chlorella* have been included in:
(1) Protista (2) Algae (3) Plantae (4) Monera

24. In Brassica oleracea capitata, the term capitata represents
(1) Subspecies (2) Variety (3) Sub - variety (4) Species

25. In Taxonomic hairarchy, the less common features from order will present in

(1) Family (2) Class (3) Genus (4) Species

26. Match the column I with Column II

Column-I		**Column-II**	
(i)	presence of branched chain lipids in cell membrane	(a)	Thermo acidophiles
(ii)	Homopolar bond in protein	(b)	Methanogens
(iii)	Found in marshy habitats, swamps, ruminants, sewage treatment plants	(c)	Halophiles

(1) (i) a, (ii) b, (iii) c

(2) (i) a, (ii) c, (iii) a

(3) (i) b, (ii) c, (iii) a

(4) (i) c, (ii) a, (iii) b

27.

Kingdom	**Organism**
(i) Monera	Archaebacteria, Eubacteria, BGA, Euglenoids
(ii) Protista	Diatoms, Dinoflagellates, Euglenoids
(iii) Fungi	*Albugo*, *Mucor*, Penicillium, Slime-moulds

Which one is/are correct match?

(1) Only (i) (2) Only (ii) (3) Only (iii) (4) All are correct

28. Organisms living in salty areas are called as

(1) Methanogens (2) Halophiles (3) Heliophytes (4) Thermoacidophiles

29. Organisms which are found in fresh water as well as in marine environment, they are microscopic and float passively in water current (plankton). Most of them are photosynthetic. The cell wall form two thin overlapping shell, which fit together as in a soap box.

Organisms which possess above characters are

(1) Dinoflagellates (2) Chrysophytes (3) Diatoms (4) 2 & 3 both

30. Read statements A to D

(A) Golden Algae are classified under chrysophytes.

(B) *Gonyaulax* & Diatoms are classified under Dinoflagellates

(C) In Diatoms the cell wall form thin overlapping shell, which fit together as in soap box.

(D) Most of the Dinoflagellates have two flagella.

How many statement are wrong.

(1) one (2) two (3) three (4) four

31. Read the following four statements (A-D) and answer as asked next to them.

(A) All single celled eukaryotes are placed under protista

(B) Most of the organism of chrysophytes are photosynthetic.

(C) Dinoflagellates appear yellow, green brown, blue or red depend on the main pigments present in their cells.

(D) Chloroplast absent in *Euglena*

How many of the above statement are correct?

(1) Two (2) Three (3) Four (4) one

32. As compared to slime moulds, Euglenoids has:

(A) Presence of chloroplast (B) Holophytic nutrition

(C) Presence of proteinaceous pellicle (D) Presence of contractile vacuole

(1) A & B, (2) B & C (3) A, B & C (4) A, B, C & D

33. *Euglena* is considered as connecting link between plant Kingdom & animal kingdom because it shows features of both plants & animals which of the following is/are plant character of *Euglena*.

(A) Presence of chlorophyll pigment (B) Holozoic nutrition

(C) Holophytic nutrition (D) Presence of sexual reproduction.

(1) A & B (2) B & C (3) C & D (4) A & C

34. Select the wrong pair

(1) Red tide – *Gonyaulax*

(2) Cellulosic cell wall – Archeobacteria

(3) Saprophytic protist – Slime moulds

(4) Mycoplasma – Cell wall less & can survive without oxygen.

35. Read the following statement (A-D) regarding the class phycomycetes & select wrong statement

(A) In phycomycetes mycelium is multinucleate (Coenocytic) and septate

(B) Wall of hyphae is composed of cellulose

(C) A sexual reproduction take place through sporangia.

(D) Sexual reproduction take place by gametangial contact.

(1) only A (2) only B (3) only C (4) A & D

36. Match column I with column II

Disease	Causal organism
(A) Late blight of potato	(i) *Colletotrichum falcatum*
(B) Damping off of seedling	(ii) *Alternaria solani*
(C) Early blight of potato	(iii) *Pythium debaryanum*
(D) Red rot of sugarcane	(iv) *Phytophthora infestans*

Options :-

(1) A (iv), B (ii), C (iii), D (i)

(2) A (iii), B (ii), C (iv), D (i)

(3) A (i), B (ii), C (iii), D (iv)

(4) A (iv), B (iii), C (ii), D (i)

37. A dikaryon is formed when

(1) Meiosis is arrersted (2) Nuclei of fusing cells do not fuse immediately

(3) Cytoplasm does not fuse (4) None of the above

38. Members of phycomycetes are found in

i. Aquatic habitats ii. On decaying wood

iii. Moist and damp places iv. As obligate parasite on plants

Choose from the following options

(1) (i) and (iii) (2) i and iv (3) ii and iii (4) All of the above

39. Give below the following statements

(a) Cell wall in many members of phycomycetes is composed of cellulose.

(b) The mycelium of deuteromycetes is aseptate & unbranched and Asexual reproduction is performed by conidia.

(c) In ascomycetes, conidia are produced exogenously on conidiophores.

(d) *Trichoderma* is used to control fungal diseases in plants.

(e) Bread and beer are manufactured by *Yeast*

How many statements are correct?

(1) 2 (2) 5 (3) 3 (4) 4

40. The enzymes involved in viral replication are synthesized

(1) On the viral ribosomes (2) On interior surface of the viral membrane

(3) On the interior surface of the viral coat (4) By the host cell.

41. Which of the following viral disease widely spread in China in 2003

(1) Severe acute respiratory syndrome (2) Severe combined immuno deficiency.

(3) Anthrax (4) Hepatitis

42. SARS virus is

(1) Ribovirus (2) Human corona virus (3) Enveloped virus (4) All of these

43. Bird flu (Fowl Plague or Avian Influenza) is a contagious disease in humans and poultry. It is caused by a mutant H_5N_1 of influenza virus. This virus is

(1) Ribovirus

(2) Arthromyxovirus

(3) Spreads by feathers and faeces of in fected migratory birds

(4) All of the above

44. Which one is absent in viruses?

(1) Replication (2) Protein synthesis (3) Energy liberation (4) Mutation

45. Nucleic acid is absent in

(1) Virus (2) Viroid (3) Prion (4) Mycoplasma

SPP Answers

1.	(2)	**2.**	(4)	**3.**	(1)	**4.**	(4)	**5.**	(1)	**6.**	(3)	**7.**	(4)
8.	(3)	**9.**	(1)	**10.**	(2)	**11.**	(2)	**12.**	(3)	**13.**	(1)	**14.**	(1)
15.	(3)	**16.**	(3)	**17.**	(2)	**18.**	(2)	**19.**	(4)	**20.**	(4)	**21.**	(4)
22.	(4)	**23.**	(1)	**24.**	(2)	**25.**	(2)	**26.**	(4)	**27.**	(2)	**28.**	(2)
29.	(4)	**30.**	(1)	**31.**	(2)	**32.**	(4)	**33.**	(4)	**34.**	(2)	**35.**	(1)
36.	(4)	**37.**	(2)	**38.**	(4)	**39.**	(4)	**40.**	(4)	**41.**	(1)	**42.**	(4)
43.	(4)	**44.**	(3)	**45.**	(3)								