SOLVED EXAMPLE

THE LIVING WORLD

Ex.1 As we go from species to kingdom in a taxonomic hierarchy, the number of common characteristics

(A) Will decrease

(B) Will increase

(C) Remain same

(D) May increase or decrease

Sol. **(A)** Will decrease

Ex.2 Which of the following 'suffixes' used for units of classification in plants indicates a taxonomic category of 'family'.

(A) – Ales **(B)** – Onae

(C) – Aceae **(D)** – Ae

Sol. **(C)** Aceae

Ex.3 The term 'systematics' refers to:

(A) Identification and classification of plants and animals

(B) Nomenclature and identification of plants and animals

(C) Diversity of kinds of organisms and their relationship

(D) Different kinds of organisms and their classification

Sol. **(C)** Diversity of kinds of organisms and their relationship

Ex.4 Genus represents

(A) An individual plant or animal

(B) A collection of plants or animals

(C) Group of closely related species of plants or animals

(D) None of these

Sol. **(C)** Group of closely related species of plants or animals

Ex.5 Botanical gardens and zoological parks have

(A) Collection of endemic living species only

(B) Collection of exotic living species only

(C) Collection of endemic and exotic living species

(D) Collection of only local plants and animals

Sol. **(C)** Collection of endemic and exotic living species

Ex.6 Taxonomic key is one of the taxonomic tools in the identification and classification of plants and animals. It is used in the preparation of

(A) Monographs **(B)** Flora

(C) Both a & b **(D)** None of these

Sol. **(C)** Both a & b

Ex.7 Which of the following is a defining characteristic of living organisms?

(A) Growth

(B) Ability to make sound

(C) Reproduction

(D) Response to external stimuli

Sol. **(D)** Response to external stimuli

Ex.8 The term "biology" was introduced by

(A) Aristotle

(B) Darwin

(C) Lamarck and Treviranus

(D) Linnaeus

Sol. **(C)**

Ex.9 'Father of Bioloy' is

(A) Curvier **(B)** Aristotle

(C) Lamarck **(D)** Theophrastus

Sol. **(B)**

Ex.10 Who is called 'Father of Zoology'

(A) Aristotle **(B)** Darwin

(C) Hippocrates **(D)** Theophrastus

Sol. **(A)**

Ex.11. 'Father of Botany' is

(A) Brunfels **(B)** Aristotle

(C) Theophrastus **(D)** Linnaeus

Sol. **(C)**

Ex.12 Crick, one of the discoverer of DNA double helical structure, was the man of

(A) Physics **(B)** Chemistry

(C) Zoology **(D)** Botany

Sol. **(A)**

Ex.13 Which one of the following aspects is an exclusive characteristic of living things.

(A) Perception of events happening in the environment and their memory

(B) Increase in mass by accumulation of material both on surface as well as internally

(C) Isolated metabolic reactions occurs in vitro

(D) Increase in mass from inside only

Sol. **(A)**

Ex.14 Organisms which display properties of both living and nonliving

(A) Viruses **(B)** Diatoms

(C) Lichens **(D)** Bacteria

Sol. **(A)**

Ex.15 Anabolism is

(A) Endergonic process

(B) Exergonic process

(C) Bidirectional process

(D) Destructive process

Sol. **(A)** : In endergonic reactions, the product have more energy than the reactants, So the reaction requires an input of energy.

Ex.16 Some plants having pleasant odour and attractive colours for

(A) Hydrophily **(B)** Anemorphily **(C)** Entomophily **(D)** None of these

Sol. **(C)**

Ex.17 The total heat content of a system is

(A) Entropy **(B)** Free energy

(C) Enthalpy **(D)** Kinetic energy

Sol. **(C)**

Ex.18 The living organisms can be unexceptionally distinguished from the non - living things on the basis of thier ability for

(A) Responsiveness to touch

(B) Interaction with the environment and progressive evolution

(C) Reproduction

(D) Growth and movement

Sol. **(C)** : Reproduction capacity found only in living being.

Ex.19 A person who studies about the origin, evolution and variations in plants and also about the classification of plants, is called as

(A) Classical taxonomist **(B)** Herbal taxonomist

(C) a-taxonomist **(D)** b-taxonomist

Sol. **(A)** : Taxonomy based on all available information and attempting to classify organisms, according to their origin, evolution and variation is called classical taxonomy. A taxonomist engaged in studying origin, evolution variations and classification of organisms is called classification taxonomist.

Ex.20 In a hiearachical system of plant classification, which one of the following taxonomic ranks generally ends in 'ceae'

(A) Family **(B)** Genus

(C) Order **(D)** Class

Sol. **(A)** : Family is a taxonomic category between the division and order. It includes one or more genera. Its suffix is 'aceae'.

Ex.21 New systematics introduced by Sir Julian Huxley is also called

(A) Phenetics **(B)** Cladistics

(C) Biosystematics **(D)** Numerical taxonomy

Sol. **(C)**

Ex.22 Linnaeus system of plant classification is

(A) Artificial **(B)** Natural

(C) Phylogenetic **(D)** None of the above

Sol. **(A)** : Linnaeus system of classification is considered as artificial beacuse it is based only on one or two character of plants.

Ex.23 In Whittaker's Five Kingdom Classification' eukaryotes were assigned to

(A) Only two of the five kingdoms

(B) Only three of the five kingdoms

(C) Only four of the five kingdoms

(D) All the five kingdoms

Sol. **(C)** : In five kingdom classification of Whittaker eukaryotes were assigned to only four of the five kingdom. Prokaryotes are included in kingdom - monera.

Ex.24 The non-nucleated, unicellular organisms of Whittaker's (1969) classification are included in the kingdom

(A) Protista **(B)** Monera

(C) Animalia **(D)** Plantae

Sol. **(B)** Monera contains the most primitive living forms which are basically unicellular prokaryotes.

Ex.25 Read the statements given below and identify the incorrect statement

(A) Scientific names are used all over the world

(B) Scientific names are often descriptive and tell us some important character of an organism

(C) Scientific names indicate relationship between species

(D) Scientific names favour multiple naming for the same kind of an organism

Sol. **(D)**

Ex.26 The third name o the "bionomial nomenclature is of

(A) Sub-genus **(B)** Species

(C) Sub-species **(D)** Type

Sol. **(C)** : Sometimes organisms of same species differe from each other as they are adapted for different kinds of environment. In such cases species are again divided into subspecies.

Ex.27 In the five-kingdom classification, Chlamydomonas and chlorella have been included in

(A) Protista **(B)** Algae

(C) Plantae **(D)** Monera

Sol. **(A)**

Ex.28 Five kingdom system of classification suggested by R.H. Whittaker is not based on

(A) Mode of nutrition

(B) Complexity of body organization

(C) Presence or absence of a well defined nucleus

(D) Mode of reproduction

Sol. **(C)** : The main criteria of Whittaker's system are :- Cell type, Thallus organization. Nutrition Reproduction and Phylogenetic relationship.

Ex.29 Which of the following statements regarding universal rules on nomenclature is wrong

(A) The first word in a biological name represents the genus

(B) The first word denoting the genus starts with a capital letter

(C) Both the words in a biological name, when handwritten, are separately underlined

(D) Biological names are generally in Greek and can be written in any language

(E) The second component in a biological name denotes the specific epithet

Sol. **(D)**

Ex.30 Plant classification proposed by Carolus Linnaeus was artificial because it was based on

(A) Only a few morphological characters

(B) Evolutionary tendencies which are diverse

(C) Anatomical which are adaptive in nature.

(D) Physiological traits alongwith morphological characters

Sol. **(A)**

Ex.31 Species are considered as

(A) Real units of classification devised by taxonomists

(B) Real basic units of classification

(C) The lowest units of classification

(D) Artificial concept of human mind which cannot be defined in absolute terms.

Sol. **(B)**

Ex.32 Phenetic classification of organisms is based on

(A) Dendogram based on DNA characteristic

(B) Sexual characteristics

(C) Observable characteristics of existing organisms

(D) The ancestral lineage of existing organisms

Sol. **(C)**

Ex.33 What doe we learn from identification of indiciduals and populations ?

Sol. The knowledge of characteristics of an individual or its entire population helps in the identification of similarities and dissimilarities among the individuals of same kind or between different types of organisms. It helps the scientists to classify organisms in various categories.

Ex.34 Given below is the scientific name of Mango. Identify the correctly written name,

Mangifera Inica

Mangifera indica

Sol. In binomial system of nomenclature, the genetic name of a species always starts with a capital letter whereas the speific name starts with a small letter. Therefore, the correct scientific name of Mango is Mangifera indica.

Ex.35 Can you identify the correct sequence of taxonomical categories ?

(A) Species → Order → Phylum → Kingdom

(B) Genus → Species → Order → Kingdom

(C) Species → Genus → Order → Phylum

Sol. The correct hierarchical arrangement of taxonomic categories in ascending order is

Species → Genus → Family → Order → Class → Phylum → Kingdom

Therefore, both **(A)** and **(C)** represent correct sequence of taxonomic categories.

In sequence **(B)**, species should be followed by genus. Therefore, it does not represent the correct sequence.

Ex.36 What does ICZN stand for?

Sol. ICZN stands for International Code of Zoological Nomenclature.

Ex.37 *Amoeba* multiplies by mitotic cell division. Is this phenomena growth or reproduction? Explain.

Sol. Amoeba (unicellular organism) multi-plies by simple mitotic cell division giving rise to two daughter Amoebae. Here reproduction is synonymous with growth i.e., increase in number of cells.'

Ex.38 International Code of Botanical nomenclature (ICBN) has provided a code for classification of plants. Give hierarchy of units of classification botanists follow while classifying plants and mention different 'Suffixes'used for the units.

Sol. ICBN has specified certain rules and principles in order to facilitate the study of plants by botanists. Hierarchy of units of classification botanists follow while classifying plants and different 'Suffixes' used for the units are as follows:

Category	Standard Suffix
Kingdom	Plantae (No fixed Suffix)
Division	–phyta
Class	–ae
Order	–ales
Family	–aceae
Genus	No fixed Suffix
Species	No fixed Suffix

Ex.39 Metabolism is a defining feature of all living organisms without exception. Isolated metabolic reactions in *vitro* are not living things but surely living reactions. Comment.

Sol. All organisms operate a network of thousands of chemical reactions. The sum total of all chemical reactions occurring in an organism due to specfic interactions amongst different types of molecules within the interior of cells is called metabolism (Gk. metabole -change). Metabolism is defIning property of living beings because all activities of an organism including growth, movements, development, responsiveness, reproduction, etc. are due to metabolism. No nonliving object shows metabolism. However, metabolic reactions can be carried out outside the body of an organism in cell free systems. Such reactions are neither living nor nonliving. The isolated in vitro metabolic reactions can, however, be called biological reactions or living reactions as they involve biochemicals

Ex.40 Match the following and choose the correct option:

A. Family	i. *tuberosum*
B. Kingdom	ii. Polymoniales
C. Order	iii. *Solanum*
D. Species	iv. Plantae
E. Genus	v. Solanacea

Options

(A) i-D, ii-C, iii-E, iv-B, v-A

(B) i-E, ii-D, iii-B, iv-A, v-C

(C) i-D, ii-E, iii-B, iv-A, v-C

(D) i-E, ii-C, iii-B, iv-A, v-D

Sol. **(A)** i-D, ii-C, iii-E, iv-B, v-A

Biological Classification

Ex.41 The five kingdom classification was proposed by

(A) R.H. Whittaker **(B)** C. Linnaeus

(C) A. Roxberg **(D)** Virchow.

Sol. **(A)**: In order to develop phylogenetic classlficetion, RH. Whittaker (1969) divided all the> organisms into ftve kingdoms on the basis of complexity of cell structure, body structure, mode of nutrition. eoological Itfestyle and phylogenetic relationships. Whittaker's f,ve kingdoms are Monera, Protista. Fungi, Plantae and Animalia.

Ex.42 Members of Phycomycetes are found in

(i) Aquatic habitats

(ii) On decaying wood

(iii) Moist and damp places

(iv) AS obligate parasites on plants Choose from the following options.

(A) None of the above **(B)** (i) and (iv)

(C) (ii) and (iii) **(D)** All of the above

Sol. **(D)**: Phycomycetes is lhe group of fungi which is characterized by eseptete and coenocytic mycelium. **They can live in a wide variety of habitat They can be aquatic** or saprotrophic or parasitic or could be living in moist and damp places. Some examples of phycomycetes are Rhizopns (black bread mcuid), Mucor (dung mould), Albugo (peresittc fungi).

Ex.43 Which of the following statement is correct :

(A) All bacteria are heterotrophic

(B) Bacteria are either heterotrophic or chemoautotrophic

(C) Bacteria can also either photoautotrophic

(D) Bacteria are either photoautotrophic or chemoautotrophic

Sol. **(C)**

Ex.44 Bacteria were first discovered by :

(A) Robert Koch **(B)** L. Pasteur
(C) Robert Hooke **(D)** A.V. Leeuwenhoek

Sol. **(D)**

Ex.45 How many organisms in the list given below are autotrophs Lactobacillus, Nostoc, Chara Nitrosomonas, Nitrobacter, Streptomyces, Sacharomyces, Trypanosoma, Porphyra, Wolfia

(A) Four **(B)** Five
(C) Six **(D)** Three

Sol. **(C)** : Mostoc, Chara, Porphyra and Wolfia are Photoautrophs while Nitrosomonas and Nitrobacter are chemoautotrophs.

Ex.46 The shape of the cocci bacteria is

(A) Rod shaped **(B)** Spherical
(C) Comma shaped **(D)** Spiral

Sol.. **(B)**

Ex.47 Match the following pairs correctly and choose the right combination

Column - I	Column - II
A. Escherichia coli	i. 'nif' gene
B Rhizobium melilotae	ii. Digests hydrocarbon of crude oil
C. Bacillus thurigiensis	iii. Production of human insulin
D.Pseudomonas putida	iv. Biological controlof fungal disease
	v.Bio-decomposed insectiside

(A) A = iii, B = i, C = v, D = iv
(B) A = i, B = ii, C = iii, D = iv
(C) A = ii, B = i, C = iii, D = iv
(D) A = iv, B = iii, C = i, D = ii
(E) A = iii, B = i, C = v, D = ii

Sol. **(E)**

Ex.48 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

(A) Archaea completely differ from both prokaryotes and eukaryotes
(B) Archaea completely differ from prokaryotes
(C) Archaea resemble eukarya in all respects
(D) Archaea have some novel features that are absent in other prokaryotes and eukaryotes

Sol. **(D)**

Ex.49 Teichoic acid is found in

(A) Gram (+ve) bacteria **(B)** Gram (-ve) bacteria
(C) Cyanobacteria **(D)** Mycoplasma

Sol. **(A)**

Ex.50 When a bacterium is provided with flagella arising from two opposite ends, it is called

(A) Monotrichous **(B)** Lophotrichous
(C) Amphitrichous **(D)** Polytrichous

Sol. **(C)**

Ex.51 'Peptidoglycan' is a characteristic constituent of the cell wall of

(A) Eubacteria and unicellular eukaryotes
(B) Bacteria and cyanobacteria
(C) Archaebacteria and eukaryotes
(D) All members of 'monera' and 'protista'

Sol. **(B)**

Ex.52 Identify the bacterium that appears violet after Gram staining

(A) Salmonella enterica
(B) Escherichia coli
(C) Mycobacterium tuberculosis
(D) Rhizobium meliloti

Sol. **(C)**

Ex.53 Circular DNA molecular occurs in

(A) Viruses
(B) Bacteria, chloroplasts and mitochondria
(C) Bacteria and chloroplasts only
(D) Bacteria only

Sol. **(B)**

Ex.54 According to the shapes the names of the different bacteria are given below. Identify them :

(A) A - Spirilla, B - Vibrio, C - Cocci, D - Bacilli
(B) A - Spirilla, B - Bacilli, C - Cocci, D - Vibrio
(C) A - Bacilli, B - Cocci, C -Spirilla, D - Vibrio
(D) A - Cocci, B - Bacilli, C - Spirilla, D - Vibrio,

Sol. **(D)**

Ex.55 Archaebacteria differ from eubacteria in

(A) Cell shape
(B) Mode of reproduction
(C) Cell membrane structure
(D) Mode of nutrition

Sol. **(C)** : Cell membrane of archaebacteria possesses branched chain lipids.

Ex.56 Which structures perform the function of mitochondria in bacteria

(A) Cell wall **(B)** Mesosomes

(C) Nucleoid **(D)** Ribosomes

Sol. **(B)** : Mesosomes helps in respiration, secretion processes, to increase the surface area of the plasma membrane and enzymatic contact.

Ex.57 Consider the following four statement (1-4) and select the option which includes all the correct ones only

(1) Single cell Spirulina can produce large quantities of food rich in protein, minerals, vitamins etc.

(2) Body weight-wise the microorganisms Methylophilus methylotrophus may be able to produce several times more proteins then the cows per day

(3) Common button mushrooms are very rich source of vitamins C.

(4) A rice variety has been developed which is very rich in calcium.

Options :

(A) Statement (3), (4)

(B) Statement (1), (3) and (4)

(C) Statement (2), (3) and (4)

(D) Statement (1), (2)

Sol. **(D)** : Spirulina is SCP rich in protein, vitamins and minerals and rice variety rich in iron content, 250 gram biomass of Methylophilus methylotrophus produce 25 tonn protein/day while cow of 250 kg produces only 200 gm protein/day.

Ex.58 State two economically important uses of

(A) Heterotrophic bacteria

(B) Archaebacteria

Sol. **(A)** Heterotrophic bacteria

(1) They act as decomposers and help in the formation of humus.

(2) They help in the production of curd from milk.

(3) Many antibiotics are obtained from some species of bacteria.

(4) Many soil bacteria help in fixation of atmospheric nitrogen.

(B) Archaebacteria

(1) Methane gas is produced from the dung of ruminants by the methanogens.

(2) Methanogens are also involved in the formation of biogas and sewage treatment.

Ex.59 How are viroids different from viruses?

Sol. Viroids were discovered in 1917 by T.O. Denier. They cause potato spindle tuber disease. They are smaller in size than viruses. They also lack the protein coat and contain free RNA of low molecular weight.

Ex.60 Describe briefly the four major groups of Protozoa.

Sol. Protozoa are microscopic unicellular protists with heterotrophic mode of nutrition. They may be holozoic, saprobic, or parasitic. These are divided into four major groups.

(1) Amoeboid protozoa or sarcodines

They are unicellular, jelly-like protozoa found in fresh or sea water and in moist soil. Their body lacks a periplast.

Therefore, they may be naked or covered by a calcareous shell. They usually lack flagella and have temporary protoplasmic outgrowths called pseudopodia. These pseudopodia or false feet help in movement and capturing prey.

They include free living forms such as *Amoeba* or parasitic forms such as *Entamoeba.*

(2) Flagellated protozoa or zooflagellates

They are free living, non-photosynthetic flagellates without a cell wall. They possess flagella for locomotion and capturing prey. They include parasitic forms such as *Trypanosoma*, which causes sleeping sickness in human beings.

(3) Ciliated protozoa or ciliates

They are aquatic individuals that form a large group of protozoa. Their characteristic features are the presence of numerous cilia on the entire body surface and the presence of two types of nuclei. All the cilia beat in the same direction to move the water laden food inside a cavity called gullet. They include organisms such as *Paramoecium*, *Vorticella*,etc.

(4) Sporozoans They include disease causing endoparasites and other pathogens. They are uninucleate and their body is covered by a pellicle. They do not possess cilia or flagella. They include the malaria causing parasite *Plasmodium*.

Exercise # 1 SINGLE OBJECTIVE NEET LEVEL

1. Most acceptable concept of species is :-
(A) Static concept (B) Biological concept
(C) Typological concept (D) Genetic concept

2. Artificial system of classification classifies plants on the basis of :-
(A) One or two characters
(B) Phylogenetic trends
(C) Many naturally existing characters
(D) None of the above

3. The term new systematics was introduced by :-
(A) Linnaeus (B) Bentham
(C) Hutchinson (D) Huxley

4. Group of organisms that closely resemble each other and freely interbreed in nature, constitute a:-
(A) Species (B) Genus
(C) Family (D) Taxon

5. ICBN was first revised in :-
(A) 1961 (B) 1964
(C) 1975 (D) 1753

6. The term taxon refers to :-
(A) Name of a species
(B) Name of genus
(C) Name of family
(D) A taxonomic group of any rank

7. The herbarium specimen on whose basis a new species is described for the first time is called as :-
(A) Syntype (B) Holotype
(C) Paratype (D) Neotype

8. The scientific naming of plants begain with publication of Linnaeus book :-
(A) Genera plantarum (B) Systema naturae
(C) Species plantarum (D) Charaka sanhita

9. Which book most impressed the opinion of taxonomists :-
(A) Enquiry into plants (B) Origin of life
(C) Genera plantarum (D) Origin of species

10. The basic smallest unit of classifications is :-
(A) Genus (B) Species
(C) Order (D) All of the above

11. Suffix for sub species is :-
(A) Phytina (B) Oideae
(C) Ineae (D) None

12. Individuals of same species having non-genetic differences due to environment are called :-
(A) Biotypes (B) Ecotype
(C) Ecophenes (D) None

13. Morphologically simillar but reproductively isolated species are called :-
(A) Neontological species (B) Sibling species
(C) Allopatric species (D) Morpho-species

14. Plant nomenclature means :-
(A) To give names to plants without any rules
(B) Nomenclature of plants under the international rules
(C) Nomenclature of plants in local language
(D) Nomenclature of plants in english language

15. Taxonomy refers to :-
(A) Plant classification (B) Plant nomenclature
(C) Plant affinity (D) All the above

16. Which of the following is a correct name :-
(A) Solanum tuberosum
(B) Solanum Tuberosum
(C) Solanum tuberosum Linn.
(D) All the above

17. Systematics deals with :-
(A) Classification (B) Nomenclature
(C) Plant description (D) Identification

18. Scientific name of Mango plant is *Mangifera indica* (Linn.) Santapau in the above name Santapau refers to :-
(A) Variety of Mango
(B) A taxonomist who proposed the present nomenclature in honour of linnaeus
(C) A scientist who for the first time described Mango plant
(D) A scientist who changed the name proposed by Linnaeus and proposed present name

19. Type specimen selected from the original material in case the holotype is missing, is called :-
(A) Lectotype (B) Neotype
(C) Syntype (D) Paratype

20. Phylogeny refers to :-
(A) Natural classification
(B) Evolutionary classification
(C) Evolutionary history
(D) Origin of algae

21. Eichler divided plant kingdom in :-
(A) Two divisions (B) Four divisions
(C) Five divisions (D) Ten divisions

22. Embryophyta includes :-
(A) Angiosperms only
(B) Algae and fungi
(C) Bryophyta & Pteridophyta
(D) All plants except thallophyta

23. According to Tippo, BGA are included in :-
(A) Chrysophyta (B) Pyrrophyta
(C) Chlorophyta (D) Cyanophyta

24. Oswald Tippo placed slime molds in :-
(A) Cyanophyta (B) Chlorophyta
(C) Phaeophyta (D) Myxomycophyta

25. "Genera Plantarum" was written by :-
(A) Engler and Prantal (B) Hutchinson
(C) Bentham & Hooker (D) Bessey

26. Angiosperms (dicotyledons) were distinguished into archichlamydae and metachlamydae by :-
(A) Candolle (B) Hutchinson
(C) Engler and Prantl (D) None

27. Chief merit of Bentham and Hooker's classification is that :-
(A) It is a system mostly based on evalutionary concepts
(B) It is a natural systems of classification of all groups of plants
(C) The description of the taxa are based on actual observation of the specimen
(D) It also considers the phylogenetic aspects

28. Bantham and Hooker classified dicots into :-
(A) Polypetalae, gamopetalae and glumiflorae
(B) Polypetalae, gamopetalae and monochlamydae
(C) Achlamydae, diclamydeae and metachlamydae
(D) Archichlamydae, sympetalae & apetalae

29. Zoodiogama includes :-
(A) Gymnosperms and pteridophyta
(B) Dicots, monocots, gymnosperm
(C) Bryophyta and pteridophyta
(D) Only thallophyta

30. Four kingdom system of classification was proposed by :-
(A) Whittaker (B) Copeland
(C) Linnaeus (D) Oswald Tippo

31. The system of classification porposed by Bentham and Hooker is :-
(A) Artificial (B) Natural
(C) Phylogenetic (D) Numerical

32. The classification of Linnaeus was mainly based on :-
(A) Sepals (B) Steam
(C) Petals (D) Stamens

33. Kingdom monera comprises the :-
(A) Plants of economic importance
(B) All the plants studied in botany
(C) Prokaryotic organisms
(D) Plants of Thallophyta group

34. Embryophyta includes :-
(A) Algae (B) Fungi
(C) Bryophyta (D) All of these

35. Whittaker is famous for :-
(A) Two kingdom classification
(B) Four kingdom classification
(C) Five kingdom classification
(D) Distinguishing in Bacteria & blue gree Algae

36. First phylogenetic system of plant classification was given by :-
(A) Engler and Prantl (B) Eichler
(C) Ostwald Tippo (D) Bentham & Hooker

37. System of classification proposed by Linnaeus was:-
(A) Artificial (B) Natural
(C) Sexual (D) (A) and (C) both

38. "Die Naturlichen Pflanzen familien" wrote by :-
(A) Eichler
(B) Linnaeus
(C) Engler and Prantl
(D) Bentham and Hooker

39. Engler and Prantl created metachlamydae to include :-
(A) Polypetalous dicots
(B) Gamopetalous dicots
(C) Gamopetalous monocots
(D) Gymnosperm

40. In which of the following systems, plants are classified in geneological order :-
(A) Artificial (B) Natural
(C) Phylogenetic (D) Nonphylogenetic

41. Halophiles, methanogens and thermoacidophils are-
(A) Cyanobacteria (B) Eubacteria
(C) Actinomycetes (D) Archaebacteria

42. In blue green algae photosynthesis occurs at :-
(A) Chromatophore
(B) Chloroplast
(C) Photosynthetic lamellae or thylakoids
(D) Chromoplast

43. Causes of water bloom is :-
(A) Green algae (B) Blue green algae
(C) Bacteria (D) Hydrilla

44. Streptomyces is included in :-
(A) Fungi (B) Actinomycetes
(C) Eubacteriales (D) Virus

45. Cyanobacteria is the new name of :-
(A) Mycoplasma (B) Green algae
(C) Blue green algae (D) Red algae

46. Cyanobacteria resemble bacteria in having :-
(A) Ribosomes (B) Naked DNA
(C) Peptidoglycan wall (D) All the above

47. Muramic acid is present in cell walls of :-
(A) Bacteria (B) Green algae
(C) Yeast (D) All fungi

48. Infoldings of plasma membrane in bacteria are called as :-
(A) Episomes (B) Plasmid
(C) Pili (D) Mesosomes

49. The organisms participating most actively in nitrogen cycle in nature are :-
(A) Bacteria (B) Legumes
(C) Parasitic algae (D) Fungi

50. Heterocyst is a structure which is associated with
(A) Reproduction (B) Respiration
(C) Nitrogen fixation (D) Locomotion

51. Procaryotic cell is characterized by :-
(A) Presence of nucleus, mitochondria and plastids
(B) Absence of cell wall, DNA fibrils and plastids
(C) Presence of spindle fibres, DNA fibrils and golgi bodies
(D) Absence of endoplasmic reticulum, golgi bodies and spindle fibres.

52. Electron microscopic observation reveals the absence of intracellular membranes in the cell of
(A) Eucaryota (B) Mycota
(C) Thallophyta (D) Procaryota

53. *Trichodesmium erythrium* which imparts red colour to sea water of red sea is a :

(A) Cyanobacterium **(B)** Red Algae
(C) Diatom **(D)** Red Coral

54. Archaebacterial cell lacks :-

(A) Peptidoglycan
(B) DNA
(C) Ribosomes
(D) Branched Chain Lipids

55. Ribosomes of prokaryotes are :-

(A) 10 s **(B)** 20 s
(C) 70 s **(D)** 80 s

56. Photosynthetic prokaryotic organism is:-

(A) *Rhizobium* **(B)** *Nostoc*
(C) *Pseudomonas* **(D)** *Staphylococcus*

57. Which of the following are wall less procaryotes:-

(A) Mycoplasma **(B)** Bacteria
(C) Cyanobacteria **(D)** Slime molds

58. Which enzyme specifically occurs in Heterocyst of blue green Algae :–

(A) Cytochrome oxidase **(B)** Nitrogenase
(C) Zymase **(D)** Peptidyl transferase

59. Most common method of reproduction in procaryotes :-

(A) Budding **(B)** Binary fission
(C) Transduction **(D)** Conjugation

60. Bacterial cell wall is mainly composed of :-

(A) Cellulose **(B)** Lipid
(C) Peptidoglycon **(D)** Chitin

61. Mycelial bacteria are :-

(A) Eubacteria **(B)** Actinomycetes
(C) Cyanobacteria **(D)** Fungi

62. Which of the following is a character of prokaryotes:-

(A) Presence of membrane bound cell organelles
(B) Presence of distinct nucleus
(C) Nucleus is not distinct and cell wall is composed of mucopeptide
(D) Cytoplasm contain 80s ribosomes

63. Chlorophyll 'a', C - phycocyanin and C - phycoerythrin are pigments of :-

(A) Red algae **(B)** Blue green algae
(C) Brown algae **(D)** Green algae

64. Harmful activity of Blue green algae is:-

(A) Denitrification
(B) Water - bloom
(C) Increase alkalinity of soil
(D) Decrease fertility of soil

65. The function of mesosome in prokaryotes is:-

(A) Aerobic respiration
(B) Cell wall formation
(C) Both **(A)** and **(B)**
(D) N_2 - fixation

66. Symbiotic prokaryotic organism which fixes atmospheric N_2 :-

(A) Spirogyra **(B)** Anabaena
(C) Cladophora **(D)** Slime-mold

67. Which of the following is not a character of prokaryote :-

(A) Lack of well organized nucleus
(B) Presence of 70 s ribosome
(C) Presence of E.R
(D) Presence of plasmamembrane

68. During the rainy season ground surface become slippery due to:-

(A) Fungi **(B)** Blue green algae
(C) Bryophytes **(D)** Slime molds

69. Photosynthesis of Blue green algae is:-

(A) Oxygenic
(B) Non oxygenic
(C) Both oxygenic and non oxygenic
(D) None

70. No sexual reproduction occurs in the algal forms belonging to :-

(A) Chlorophyceae **(B)** Myxophyceae
(C) Rhodophyceae **(D)** Phaeophyceae

Exercise # 2 SINGLE OBJECTIVE AIIMS LEVEL

1. Static concept of species is given by :-
(A) Linnaeus (B) Bentham
(C) Koch (D) Mayr

2. In taxonomy the first step is :-
(A) Identification (B) Nomenclature
(C) Classification (D) Affinities

3. The suffix – inae signifies the rank :–
(A) Tribe (B) Subtribe
(C) Suborder (D) Sub family

4. Species living in different geographical areas are called
(A) Allochronic (B) Allopatric
(C) Sympatric (D) Siblings

5. A large number of unknown species of plants and animals are believed to be present in :-
(A) Temperate forests (B) Antarctica
(C) Taiga (D) Tropical forest

6. Biological concept of species proposed by :-
(A) Linnaeus (B) Mayr
(C) John Ray (D) De Candolle

7. For higher plants, flowers are chiefly used as a basis of classification, because :–
(A) These show a great variety in colour
(B) It can be preserved easily
(C) Reproductive parts are more conservative than vegetative parts
(D) None of these

8. Individuals of same species having genetic variation and occur in same environment are called:–
(A) Biotypes (B) Ecotype
(C) Ecophenes (D) Ecads

9. The binomial system of nomenclature was initially proposed by :–
(A) Magnus (B) Bauhin
(C) Caesalpinno (D) Discorides

10. Biochemical resemblances are used in the identification of :–
(A) Protistan species (B) Moneran species
(C) Fungal species (D) Higher plants

11. Concept of phylogeny was proposed by :–
(A) John Ray (B) Lamarck
(C) Ernest Haeckel (D) Darwin

12. A division is formed by combining several :–
(A) Orders (B) Families
(C) Classes (D) Tribes

13. An international code of botanical nomenclature was first proposed in the year :–
(A) 1930 (B) 1830
(C) 1913 (D) 1813

14. For declaration of new species of higher plants what characters are used :–
(A) Floral character of new species
(B) Anatomical characters of new species
(C) Physiological character of new species
(D) Character of endosperm

15. The standared size of herbarium sheets is :–
(A) 11.5" × 16.5" (B) 15.5" × 16.5"
(C) 18.5" × 10.5" (D) 20.5" × 21.5"

16. Which statement is true :–
(A) Tautonyms are not allowed in plants
(B) Tautonyms are not allowed in animals
(C) Tautonyms normally allowed in animals and some time allowed in plants
(D) Tautonyms allowed only in bacteria

17. Trinomial nomenclature of classification was proposed by :–
(A) Linneaus
(B) Huxley and Stricklandt
(C) John–Ray
(D) Theophrastus

18. Most of the botanical names are drawn from the following language :–

(A) German **(B)** Greek
(C) Latin **(D)** Spanish

19. Evolutionary classification is called :–

(A) Artificial system **(B)** Natural system
(C) Phylogenetic system **(D)** None of the above

20. Which of the following statements regarding nomenclature is correct :–

(A) Generic name always begins with capital letter whereas specific name with small letter
(B) Scientific name should be printed in italics
(C) Scientific name when typed or handwritten should be underlined
(D) All the above

21. The systematic arrangement of taxa is called :–

(A) Key **(B)** Taxonomy
(C) Geneology **(D)** Hierarchy

22. Which is the most important but generally not used criteria for the identification of the species–

(A) Interbreeding **(B)** Morphology
(C) Genetic material **(D)** None

23. Number of obligatory categories in taxonomy are :–

(A) 7 **(B)** 8
(C) 9 **(D)** 5

24. Herbarium is :–

(A) A garden where medicinal plants are grown
(B) Garden where herbaceous plants are grown
(C) Dry garden
(D) Chemical to kill plants

25. The year of publication of "Species plantarum" :-

(A) 1853 **(B)** 1857
(C) 1753 **(D)** 1786

26. The biological concept of species is mainly based on :–

(A) Morphological features
(B) Morphology and method of reproduction
(C) Method of reproduction only
(D) Reproductive isolation

27. A duplicate of holotype is called :–

(A) Isotype **(B)** Syntype
(C) Neotype **(D)** Paratype

28. Term taxon was given by :

(A) Adolf Mayer **(B)** Linnaeus
(C) Darwin **(D)** Koch

29. Which of the following is a species :–

(A) *Tamarindus* **(B)** *Indicus*
(C) *Indica* **(D)** *Tamarindus indicus*

30. Tautonyms are valid names according to :–

(A) ICBN **(B)** Species plantarum
(C) Genera plantarum **(D)** ICZN

31. Practical significance of taxonomy is :–

(A) Classification
(B) To understand diversity
(C) To understand evolution
(D) Identification of organisms

32. Which name is invalid :–

(A) Name not published in species plantarum
(B) Name proposed prior to 1961
(C) Name which is not in latin
(D) Name for which holotype is not designated

33. Which system classifies a plant in more than one groups :–

(A) Practical classification
(B) Artificial classification
(C) Natural classification
(D) Phylogenetic classification

34. Author of book *"Flora British Indica"* :–

(A) Father Santapau
(B) J.D. Hooker
(C) William Rouxburgh
(D) G. Bentham

35. Oswald–Tippo included how many divisions in sub kingdom thallophyta :–

(A) 20 – divisions **(B)** 10 – divisions
(C) 7 – divisions **(D)** 2 – divisions

36. First plant classification was given by :–
(A) Linneaus (B) John–Ray
(C) Theophrastus (D) Darwin

37. Division "Tracheophyta" includes :–
(A) Bryophyta
(B) All vascular plants
(C) All non–vascular plants
(D) All non–vascular and vascular plants

38. Which group of plant have embryo but not vascular tissue :–
(A) Cyanophyta (B) Tracheophyta
(C) Bryophyta (D) Chlorophyta

39. According to Benthum & Hooker total families of real flowering plants :–
(A) 202 (B) 199
(C) 34 (D) 85

40. Who gave importance of serology in taxonomy :
(A) Willis (B) Karl Menz
(C) Hutchinson (D) Whittaker

41. The word Cryptogamia was coined by :–
(A) Theophrastus (B) Linnaeus
(C) Benthum & Hooker (D) John–Ray

42. Siphonogama includes :–
(A) Bryophyta and thallophyta
(B) Pteridophyta & Bryophyta
(C) Gymnosperm & angiosperm
(D) Thallophyta and gymnosperm

43. The phylogenetic relation ship among organisms can be established by the technique :–
(A) Autoradiography
(B) X–ray crystallography
(C) Serology
(D) Geneology

44. According to four kingdom system of Copeland, the fungi belong to kingdom :–
(A) Protista (B) Mychota
(C) Mycota (D) Plantae

45. According to Oswald Tippo Angiosperms are placed under:-
(A) Atracheata (B) Thallophyta
(C) Tracheophyta (D) Spermatophyta

46. "Systema Naturae" book was written by:-
(A) Angler and prantle (B) Darwin
(C) Linnaeus (D) Oswald & Tippo

47. According to Eichler cryptogamia includes :-
(A) Gymnosperm and Angiosperm
(B) Thallophyta and Gymnosperm
(C) Thallophyta, Bryophyta and Pteridophyta
(D) Only angiosperm

48. According to Whittaker kingdom monera includes:-
(A) Unicellular eukaryotes
(B) Prokaryotes
(C) Slime molds & protozoa
(D) Multicellular & eukaryotes

49. "Cellular plants" and "Vascular plants" are the groups created by:-
(A) Tippo (B) Eichler
(C) Takhtajan (D) De candolle

50. According to Copeland the "Red algae" belongs to :-
(A) Monera (B) Protista
(C) Plantae (D) Animalia

51. Linnaeus proposed an outline of plant classification in :
(A) Genera Plantarum
(B) Species Plantarum
(C) Systema Naturae
(D) Philosophia Botanica

52. Who classified the Embryophyta on the basis of fertilization -
(A) Eichler (B) Tippo
(C) Takhtajan (D) Engler & Prantl

53. The earliest serious efforts to classify the living things were made by :-
(A) Greek philosophers
(B) Latin American scientist
(C) British herbalists
(D) Indian Hakims

54. Classification proposed by Bentham and Hooker is mainly based on :–
(A) Embryological characters
(B) Floral characters
(C) Vegetative characters
(D) Phylogenetic characters

55. The separation of living beings into five kingdoms is based on :–
(A) Complexity of cell structure
(B) Complexity of organism's body
(C) Mode nutrition
(D) All the above

56. Which of the following organisms were never included in protista :–
(A) Bacteria **(B)** Red algae
(C) Slimemolds **(D)** Mosses

57. In which book, Linnaeus proposed the principles of nomenclature :–
(A) Species plantarum
(B) Systema Naturae
(C) Flora lapponica
(D) Philosophia botanica

58. Which of the two groups include the similar plants
(A) Siphonogama and spermatophyta
(B) Siphonogama and zoodiogama
(C) Metachlamydae and monochlamydae
(D) Polypetalae and gamopetalae

59. In Tippo's classification the group atracheata includes :–
(A) Thallophyta
(B) Bryophyta
(C) All the vascular plants
(D) All the non-vascular plants

60. Phylogenetic relationship of plants can be established by :–
(A) Plantserum **(B)** Animal serum
(C) Chromatography **(D)** Autoradiography

61. Fertilization by zoodiogamy occurs in :–
(A) Cryptogams **(B)** Phanerogams
(C) Only bryophyta **(D)** Only pteridophyta

62. Swedish botanist who proposed the artificial system of classification on the basis of floral morphology was :–
(A) De–Jussieu
(B) Bentham and Hooker
(C) John Ray
(D) Carl von linne

63. Kingdom of unicellular eucaryotes :-
(A) Monera **(B)** Protista
(C) Fungi **(D)** Plantae

64. Who among the following proposed a classification in which plants with one stamen were placed under the class *Monandria*, with two in *Diandria* and with many stamens in polyandria:-
(A) Hutchinson
(B) Bentham and Hooker
(C) Cronquist
(D) Linnaeus

65. Free living nitrogen-fixing bacteria are found in-
(A) Air **(B)** Soil
(C) Root nodules **(D)** None of above

66. Tuberculosis (T.B.) is caused by-
(A) *Mycobacterium tabuerculosis*
(B) *Mycobacterium leprae*
(C) *Clostridium tetani*
(D) *Vibrio cholerae*

67. "Transformation" experiments using Pneumococus bacteria led to hypothesis that -
(A) DNA is genetic material
(B) Bacteria have sexual reproduction
(C) Chromosomes are made up of DNA
(D) RNA is a transfer link

68. Cell membrane of bacteria is made up of -
(A) Cellulose and lipid
(B) Chitin
(C) Lipid + Protein
(D) Protein and Cellulose

69. The habitat of E.coli is-
(A) Water **(B)** Colon (intestine)
(C) Soil **(D)** Stomach

70. Shape of E.coli is-
(A) Rod shaped **(B)** Round
(C) Spiral **(D)** Comma shaped

Exercise # 3 PART - 1 MATRIX MATCH COLUMN

1. Match Column - I with column - II and select the correct option from codes given below :

Column - I		Column - II	
A.	Planaria	i.	Binary fission
B.	Fungi	ii.	Asexual spores
C.	Yeast	iii.	Budding
D.	Amoeba	iv.	True regeneration
		v.	Fragmentation

(A) A-i, B-ii, C-iii, D-iv **(B)** A-iv, B-ii,v, C-iii, D-i
(C) A-ii, B-v, C-i, D-iv **(D)** A-v, B-ii,i, C-iii, D-iv

2. Match Column - I with Column - II and select the correct option from the codes given below.

Column - I		Column - II	
A.	Binomial nomenclature	i.	Hippocrates
B.	The Darwin of the 20th century	ii.	Earnst Mayr
C.	Father of Botany	iii.	Linnaeus
D.	Father of medicine	iv.	Theopharastus

(A) A-iii, B-ii, C-iv, D-i **(B)** A-iii, B-ii, C-i, D-iv
(C) A-i, B-ii, C-iii, D-iv **(D)** A-ii, B-iii, C-iv, D-i

3. Match column - I with column - II and select the correct option from codes given below.

Column - I		Column - II	
A.	John Ray	i.	Gave the concept of new systematics
B.	C. Linnaeus	ii.	First described species as a unit of classifi cation
C.	Aristotle	iii.	Father of Zoology
D.	Julian	iv.	Introduced binomial nomenclature

(A) A - i, B - ii, C - iii, D - iv **(B)** A - iv, B -iii, C - ii, D - i
(C) A - ii, B - iii, C - i, D - iv **(D)** A - ii, B - iv, C - iii, D - i

4. Match Column - I with Column - II and select the correct option from codes given below.

Column - I		Column - II	
A.	Royal botanical garden,	i.	Lucknow
B.	Indian botanical garden,	ii.	England
C.	National Botanical Research Institute	iii.	Howrah
D.	Llyord Botanical garden	iv.	Darjeeling

(A) A - ii, B - iii, C - i, D - iv **(B)** A - i, B - iii, C - ii, D - iv
(C) A - iv, B - ii, C - i, D - iii **(D)** A - iv, B - iii, C - ii, D - i

5. Match Column - I with Column - II and select the correct option from codes given below.

Column - I		Column - II	
A.	Botanical garden	i.	Preserved plant specimens
B.	Zoogical park	ii.	Preserved plant and animal specimens
C.	Museum	iii.	Living plants
D.	Herbarium	iv.	Living wild animals

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

6. Match Column - I with Column - II and select the correct option from the codes given below :

Column - I		Column - II	
A.	Ecology	**i.**	Relationships of organisms
B.	Herbarium	**ii.**	Original specimen cited by an author
C.	Holotype	**iii.**	A hierarchial unit
D.	Taxon	**iv.**	Collection of wild and domestic plants

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

7. A 'type' is one particular specimen (or a group of specimens) of an organism to which the scientific name of that organism is formally attached. Match column - I (type) with column - II (description) and select the correct option from codes given below.

Column - I		Column - II	
A.	Holotype	**i.**	A specimen cited with original description other than the holotype or isotype
B.	Isotype	**ii.**	A duplicate of the holotype
C.	Paratype	**iii.**	A specimen designated in the original descrition
D.	Lectotype	**iv.**	A specimen selected from original material to serve as nomenclatural type when the holo type was not designated.

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

8. Match the following

Column - I		Column - II	
A.	Genera Plantarum	**i.**	Aristotle
B.	Species Plantarum	**ii.**	Linnaeus
C.	Historia Generalis	**iii.**	Bentham and Hooker
D.	Scala Naturae	**iv.**	Pliny
		v.	John Ray

(A) A - iv, B - ii, C - v, D - iii
(B) A - iv, B - ii, C - i, D - iii
(C) A - iv, B - ii, C - iii, D - i
(D) A - iii, B - ii, C - v, D - i

9. Match the following and choose the correct combination from the options given

Column - I (Common name)		Column - II (Taxonomic category Order)	
A.	Wheat	**i.**	Primata
B.	Mango	**ii.**	Diptera
C.	Housefly	**iii.**	Sapindales
D.	Man	**iv.**	Poales

(A) A - i, B - ii, C - iv, D - iii
(B) A - iv, B - iii, C - ii, D - i
(C) A - ii, B - iv, C - i, D - iii
(D) A - iii, B - iv, C - ii, D - i
(E) A - iv, B - ii, C - iii, D - i

10. Match the following and select the correct combination from the option given below

	Column - I (Kingdom)		Column - II (Class)
A.	Plantae	**i.**	Archaebacteria
B.	Fungi	**ii.**	Euglenoids
C.	Protista	**iii.**	Phycomycetes
D.	Monera	**iv.**	Algae

(A) A - iv, B - iii, C - ii, D - i
(B) A - i, B - ii, C - iii, D - iv
(C) A - iii, B - iv, C - ii, D - i
(D) A - iv, B - ii, C - iii, D - i
(E) A - ii, B - iii, C - iv, D - i

11. Match the following and choose the correct option :

A.	Family	**i.**	tuberosum
B.	Kingdom	**ii.**	Polymoniales
C.	Order	**iii.**	Solanum
D.	Species	**iv.**	Plantae
E.	Genus	**v.**	Solanacea

(A) i - D, ii - C, iii - E, iv - B, v - A
(B) i - E, ii - D, iii - B, iv - A, v - C
(C) i - D, ii - E, iii - B, iv - A, v - C
(D) i - E, ii - C, iii - B, iv - A, v - D

Biological Classification

12. Match Column - I with Column - II and select the correct option from the codes given below.

	Column - I		Column - II
A.	Chief producers in oceans	**i.**	Euglenoids
B.	Red tides	**ii.**	Diatoms
C.	Mixotrophic nutrition	**iii.**	Slime moulds
D.	Plasmodium	**iv.**	Dinoflagellates

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

13. Match Column - I with Column - II and select the correct option from the codes given below.

	Column - I		Column - II
A.	Phycomycetes	**i.**	Sac fungi
B.	Ascomycetes	**ii.**	Algal fungi
C.	Basidiomycetes	**iii.**	Fungi imperfecti
D.	Deuteromycetes	**iv**	Club fungi

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

14. Match Column - I with Column - II and select the correct option from the codes given below.

	Column - I		Column - II
A.	Edible delicacies	**i.**	Penicillium, Streptomyces
B.	Experimental genetics	**ii.**	Neurospora crassa
C.	Source of antibiotics	**iii.**	Puccinia, Ustilago
D.	Rust and smut diseases	**iv.**	Morels and truffles

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

15. Match Column - I with Column - II and select the correct option from the codes given below.

	Column - I		Column - II
A.	Monera	**i.**	Chlamydomonas, Solanum
B.	Protista	**ii.**	Bacillus, Oscillatoria
C.	Fungi	**iii.**	Euglena, Trypanosoma
D.	Plantae	**iv.**	Mucor, Penicillium
E.	Animalia	v	Felis, Panthera

(A) A-iii, B - ii, C - iv, D - i, E -v
(B) A-ii, B - iii, C - iv, D - i, E -v
(C) A-ii, B - iii, C - i, D - iv, E - v
(D) A-ii, B - v, C - i, D - iv, E - iii

16. Match Column - I with Column - II and select the correct option from the codes given below.

	Column -I		Column -II
A.	Plant virus	i	kuru disease
B.	Animal virus	ii	Potato spindle tuber
C.	Viroids	**iii**	Polio
D.	Prions	**iv**	Tobacco mosaic

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

Exercise # 3 PART - 2 ASSERTION & REASONING

The Living World

Directions : In the following questions, a statements of assertion is followed by a statement of reason. Mark the correct choice as :

(A) If both assertion and reason are true and reason are true and reason is the correct explanation of assertion

(B) If both assertion and reason are true but reason is not the correct explanation of assertion.

(C) If assertion is true but reason is false.

(D) If both assertion and reason are false.

1. **Assertion** : Systematics is defined as the science of diversity of organsims in evolutionary context.

   Reason : Systematic include inter-relationship between organisms.

2. **Assertion** : Living organisms show internal as well as external growth.

   Reason : Living organisms undergo the process known as accretion.

3. **Assertion** : Metabolism refers to the sum of chemical reactions that occur within living organisms.

   Reason : Metabolic reactions occur simultaneously inside living organisms.

4. **Assertion** : New names in bionomial nomenclature are derived from Latin or are latinsed.

   Reason : Latin is a technical language.

5. **Assertion** : Species is a group of individuals with fundamental similarities.

   Reason : indica, leo, tuberosum represent such group of individuals.

6. **Assertion** : Consciousness is a defining property of living organisms.

   Reason : Human being is the only organisms that has self consciousness.

7. **Assertion** : In binomial nomenclature, both words are separately underlined

   Reason : Underlining indicates their Latin origin.

8. **Assertion** : Cats and dogs have some similarities.

   Reason : Cats and dogs belong to the same family canidae.

9. **Assertion** : Order is a taxonomic category that includes one or more genera.

   Reason : All the genera in an order have some similar features

10. **Assertion** : Living organisms are self replicating, evolving and self regulating unit.

    Reason : Living organisms are capable of responding to external stimuli,

11. **Assertion** : All organisms reproduce for perpetuation of a population.

    Reason : Reproduction is an all inclusive characteristic of living organisms.

12. **Assertion** : Keys are analytical in anture.

    Reason : Keys are based on couplet.

13. **Assertion** : Classification is necessary to study all living organisms.

    Reason : In classification, individuals are grouped into categories.

14. **Assertion** : Monographs are useful in providing information for identification of names of species.

Reason : Monographs contains information on omre than one taxon.

15. **Assertion** : System of providing name with two components is called binomial nomenclature.

Reason : Each name consists first of a specific name and second of a generic name.

16. **Assertion :** Phylogeny is the developmental history of a species.

Reason : Species is the basic unit of taxonomy.

17. **Assertion :** Whittaker's classification for algae is not acceptable.

Reason : Whittaker grouped algae in different kingdom.

18. **Assertion :** Chemotaxonomy is classifying organism at molecular level.

Reason : Cytotaxonomy is classifying organisms at cellular level.

19. **Assertion :** Whittaker's did not include unicellular green algae in protista

Reason : Distinction between unicellular and multicellular organisms is not possible in case of algae.

20. **Assertion :** Systematics is the branch of biology that deals with classification of living organisms.

Reason : The aim of classification is to group the organisms.

21. **Assertion :** Acraniata is a group of organism which do not have distinct cranium.

Reason : It includes small marine forms without head.

22. **Assertion :** To give scientific name to plant, there is ICBN.

Reason : It uses articles, photographs and recommendations to name a plant.

23. **Assertion :** Taxon and category are same things.

Reason : Category shows hierarchical classification.

24. **Assertion :** The hierarchy includes seven obligate categories.

Reason : Intermediate categories are used to make taxonomic position more informative.

25. **Assertion :** The species is reproductively isolated natural population.

Reason : Prokaryotes cannot be kept under different species on the basis of reproductive isolation.

26. **Assertion :** Bacteria, Protista do not have circulatory system.

Reason : These organisms live in moist and watery environment.

27. **Assertion :** Living organisms possess specific individuality with the definite shape and size.

Reason : Both living and non living entities resemble each other at the lower level of organization.

Biological Classification

28. **Assertion :** Two kingdom classification was insufficient.

Reason : Majority of organisms did not fall into either of the categories in two kingdom classification.

29. **Assertion :** Archaebacteria are able to survive in harsh habitats.

Reason : Presence of peptidoglycan in cell wall help archaebacteria to survive in extreme condition.

30. **Assertion :** Mycoplasmas are pathogenic in animals and plants.

Reason : Mycoplasmas lack cell wall and can survive without oxygen.

31. **Assertion :** Phycomycetes, are commonly known as sac-fungi.

Reason : In phycomycetes, ascospore (sexual spores) are produced endogenously in sac like asci.

32. **Assertion :** Methanogens are present in the gut of several ruminant animals.

Reason : Methanogens help in the production of methane from dung of ruminants.

33. **Assertion :** Pasteur coined Contagium Vivum Fluidum.

Reason : Pasteur found that virus infected plant of tobacco can cause infection in healty plant.

34. **Assertion :** Cyanobacteria are photosynthetic autotrophs.

Reason : Cyanobacteria have chlorophyll a and b similar to green plants.

35. **Assertion :** Virus is an obligate parasite.

Reason : Virus is host specific .

36. **Assertion :** Cell wall of chrysophytes are indestructible.

Reason : Cell walls ofchrysophytes have layer of magnesium pectate embedded in it.

37. **Assertion :** The protoplasm of plasmodial slime mould is considered pirest in the world.

Reason : Protoplasm of plasmodium is differentiated into an outer enucleated and central nucleated portions.

38. **Assertion :** Sporozoan amy have silica shells on their surface.

Reason : Shells of sporozoans help in protection from acidic environment of the host.

39. **Assertion :** Deuteromycetes is known as fungi imperfecti.

Reason : In Deuteromycetes, only the asexual phase is known.

40. **Assertion :** In lichens, mycobiont and phycobiont are symbiotically associated in which algae is predominant and fungi from unfavourable conditions.

Reason : The fungus provides food and alga protects the fungus from unfavourable conditions.

41. **Assertion :** Euglena is called as plant animal.

Reason : Pellicle of Euglena is made up of cellulose and not protein.

42. **Assertion :** Chemosynthetic autotrophic bacteria oxidise various inorganic substances.

Reason : Energy released during oxidation is used in ATP production.

43. **Assertion** : Bacteria are prokaryotic.

Reason : Bacteria do not possess true nucleus and membrane bound cell organelles.

44. **Assertion** : Bacteria have three basic shapes, i.e., round, rod, spiral

Reason : Cocci and Bacilli may form clusters or chain of a definite length.

45. **Assertion** : Bacterial photosynthesis occurs by utilizing wavelength longer than 700 nm.

Reason : Here reaction centre is B-890.

46. **Assertion** : The nitrogen-fixing bacteria in leguminous plant nodules live as symbionts.

Reason : Leg-haemoglobin synthesized by leguminous plants protect bacteria.

47. **Assertion** : Bacteria are classified among plants.

Reason : They have cell walls.

48. **Assertion** : Bacteria do not always move with the help of flagella.

Reason : Flagellated bacteria employs rotary motion of glagellum when it moves.

49. **Assertion** : Some bacteria have the capacity to retain Gram stain after treatment with acid alcohol.

Reason : They are known as Gram positive pole under influence of electric current.

50. **Assertion** : None autotrophic bacteria carry out chemosynthesis.

Reason : Chemosynthetic bacteria trap the small amount of energy released from inorganic compound's oxidation to use in the reactions that synthesize carbohydrates.

51. **Assertion** : Exotoxins are released by Gram +ve bacteria causing diseases to animals.

Reason : Exotoxins are proteins to whose response WBC of animals react.

52. **Assertion** : All food chains will come to stand still if bacteria disappear from earth.

Reason : Bacteria are only associated with the soil fertility and hardly any role for food chain.

53. **Assertion** : Broad specturm antibiotics are produced by streptomyces.

Reason : They can destory microorganisms by inhibiting DNA replication or protein synthesis.

54. **Assertion** : Bacterial cell wall is characterised by having mucopolysaccharides.

Reason : Acetyl muramic acid is an example of mucopolysaccharides.

55. **Assertion** : Root nodules in legminous plants are inhabited by Anabaena.

Reason : Leguminous plants are an example of symbiotic nitrogen fixation.

56. **Assertion** : Bacillus butchli is true bacterium.

Reason : Its cell wall is composed of acetyl muramic acid.

57. **Assertion** : Plasmids are double-stranded extra chromosomal DNA.

Reason : Plasmids are possessed by eukaryotic cells.

58. **Assertion** : Pili are motile appendages of bacteria.

Reason : Pili participate in conjugation.

59. **Assertion** : Cell secretion does not occur in bacteria.

Reason : Golgi complex is absent in bacteria.

60. **Assertion** : Agrobacterium tumefaciens is the causative agent of crown gall disease of dicots.

Reason : Agrobacterium tumefaciens causes infection by entering the plant through wounds and injuries .

61. **Assertion** : Slime moulds show alternation of generation.

Reason : The sporangia bearing slime moulds represent haplophase.

62. **Assertion** : Sandfly transmits Kala-azar.

Reason : In Kala-azar, the parasite damages the brain.

63. **Assertion** : Trichomonas vaginalis causes infection only in women.

Reason : Trichomonas buccalis lives in the buccal cavity.

64. **Assertion** : Euglena is studies as an animal as well as a plant.

Reason : Euglena is more an animal than a plant.

65. **Assertion** : Amoeba contains a contractile vacuole.

Reason : It helps in both digestion and osmoregulation.

66. **Assertion** : Amoebiasis is caused by Amoeba

Reason : The protist feeds on red blood corpuscles.

67. **Assertion** : Erythrocytic merozoites form gametocytes.

Reason : Gametocytes are of two types - male and female.

68. **Assertion** : Plasmodium causes disease in female Anopheles mosquitoes

Reason : Female Anopheles mosquitoes feed on human blood.

69. **Assertion** : Malarial fever appear at merozoite stage of Plasmodium.

Reason : The infective stage of Plasmodium is sporozoite.

70. **Assertion** : Schizogony is an asexual reproduction of female Anopheles mosquito.

Reason : It takes place only in human in liver cells.

71. **Assertion** : Symbiosis is furnished by mycorrhiza.

Reason : In mycorrhiza, symbiosis is established between fungus and alga.

72. **Assertion** : Fruticose are well branched leafy lichens.

Reason : These lichens are upright and have pendulous organisation and are attached to substratum by a discoid structure.

73. **Assertion** : Aflatoxins are produced by Aspergillus flavus.

Reason : These toxins are useful to mankind.

74. **Assertion** : Deuteromycetes lack sexual reproduction.

Reason : Fungi show three type of reproduction asexual, sexual and vegetative.

75. **Assertion** : "Fungi imperfecti" does not show alternation of generation.

Reason : The dipoid phase is present in only zygote.

76. **Assertion** : Rhizopus and Mucor are used in liquor industry.

Reason : They cause fermentation.

77. **Assertion** : Morels and Truffles are edible fungi.

Reason : Ascocarps are edible.

78. **Assertion** : Saccharomyces ellipsoidens is Baker's yeast and Saccharomyces cerevisiae is Wine yeast.

Reason : Yeast is used to make dry ice.

79. **Assertion** : Yeast are the best source of vitamin B complex.

Reason : Ashbya gossypii is a filamentous yeast.

80. **Assertion** : Claviceps produces lysergic acid.

Reason : It is carcinogenic.

81. **Assertion** : Mushrooms are called fairy rings.

Reason : Mushroom consists of two parts-stipe and pileus.

82. **Assertion** : Basidiocarps are called fungus flowers.

Reason : The beautiful fruit bodies are found in Basidiomycotina.

83. **Assertion** : Fruticose lichens have the simplest thallus.

Reason : The thallus is attached only at the base by a flattened disc.

84. **Assertion** : The fungi are widespread in distribution and they even live on inside other plants and animals.

Reason : Fungi are able to grow anywhere on land, water or on other organisms because they have a variety of pigments including chlorophyll, carotenoids, fucoxanthin and phycoerythrin.

85. **Assertion** : Interferons are a type of antibodies produced by body cells infected by bacteria.

Reason : Interferons stimulate inflammation at the site of injury.

86. **Assertion** : DNA serves as hereditary material.

Reason : DNA functions as blue-print for building and running cellular machinery.

87. **Assertion** : Primitive atmosphere was formed by the lightest atoms.

Reason : The primitive atmosphere was reducing in nature.

Exercise # 4 PART - 1 PREVIOUS YEAR (NEET/AIPMT)

1. Carbohydrates the most abundant biomolecules on earth, are produced by. [CBSE AIPMT-2005]
(A) All bacteria, fungi and algae
(B) fungi, algae and green plant cells
(C) some bacteria, algae and green plant cells
(D) viruses, fungi and bacteria

2. Which one of the following is an example of negative feedback loop in humans ? [CBSE AIPMT-2007]
(A) Constriction of skin blood vessels and contraction of skeletal muscles when it is too cold
(B) Secretion of tears after falling of sand particles into the eye
(C) Salivartion of mouth at the sight of delicious food
(D) Secretion of sweat glands and constriction of skin blood vessels when it is too hot

3. The living organisms can be un-exceptionally distinguished from the non - living things on the basis of their ability. for. [CBSE AIPMT-2007]
(A) responsiveness to touch
(B) interaction with the environment and progres sive evolution
(C) reproduction
(D) growth and movement

4. Biological organisation starts with. [CBSE AIPMT-2007]
(A) Sub-microscopic molecular level
(B) cellular level
(C) organismic level
(D) atomic level

5. Study the four statements (I-VI) given below and select the two correct ones out of them : [CBSE AIPMT-2016]
(I) Definition of biological species was given by Ernst Mayr.
(II) Photoperiod does not affect reproduction in plants
(III) Binomial nomenclature system was given by RH Whittaker
(IV) In unicellular organisms, reproduction is synonymous with growth.
(A) II and III (B) III and IV
(C) I and IV (D) I and II

6. The label of a herbarium sheet does not carry information on [CBSE AIPMT-2016]
(A) date of collection (B) name of collector
(C) local names (D) height of the plant

7. Nomenclature is governed by certain universal rules. Which one of the following is contrary rules. Which one of the following ? [CBSE AIPMT-2016]
(A) The first word in a biological name represents the genus name and the second is a specific epithet
(B) The names are written in Latin and are Italicised
(C) When written by hand, the names are to be underlined
(D) Biological names can be written in any language

8. Tobacco mosaic virus is a tubular filament of size [CBSE AIPMT-2003]
(A) 700 × 30 nm (B) 300 × 10 nm
(C) 300 × 5 nm (D) 300 × 18 nm

9. Chromosomes in a bacterial cell can be 1-3 in number and [CBSE AIPMT-2003]
(A) can be cirular as well as linear within the same cell
(B) are always circular
(C) are always linear
(D) can be either ciruclar or linear , but never both within the same cell

10. Which one of the following statements about viruses is correct ? [CBSE AIPMT-2003]
(A) nucleic acid of viruses is known as capsid
(B) Viruses possess their own metabolic system
(C) All viruses contain both RNA and DNA
(D) can be either ciruclar or linear, but never both within the same cell

11. Viruses are no more 'alive' than isolated chromosomes because **[CBSE AIPMT-2003]**

(A) Both require the environment of a cell to replicate

(B) They require both RNA and DNA

(C) They both need food molecules

(D) They both require oxygen for respiration

12. Which of the following statements is not true for retroviruses ? **[CBSE AIPMT-2004]**

(A) DNA is not present at any stage in the life cycle of retroviruses

(B) Retroviruses carry gene for RNA dependent DNA polymerase

(C) The genetic material in mature retroviruses is RNA

(D) Retroviruses are causative agents for certain kinds of cancer in man

13. Viruses that infect bacteria, multiply and cause their lysis are called **[CBSE AIPMT-2004]**

(A) lysozymes **(B)** lytic

(C) lipolytic **(D)** lysogenic

14. Barophillic prokaryotes **[CBSE AIPMT-2005]**

(A) grow slowly in highly alkaline frozen takes at high altitudes

(B) occur in water containing high concentrations of barium hydroxide

(C) grow and multiply in very deep marine sediments

(D) readily grown and divides in sea water enriched in any soluble salt of barium

15. Which one of the following statements about Mycoplasma is wrong? **[CBSE AIPMT-2007]**

(A) They are also called PPLO

(B) They are pleomorphic

(C) They are sensitive to penicillin

(D) They cause disease in plants

16. Bacterial leaf blight of rice is caused by a species of **[CBSE AIPMT-2008]**

(A) Xanthomonas **(B)** Pseudomonas

(C) Alternaria **(D)** Erwinia

17. *Thermococcus, Methanococcus* and *Methanobacterium* exemplify **[CBSE AIPMT-2008]**

(A) archaebacteria that contain protein homologous to eukaryotic core histones

(B) archaebacteria that lack any histones resembling those found in eukaryotes but whose DNA is negatively supercoiled

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

(D) bacteria that contain a cytoskeleton and ribosomes

18. To Diener discovered a **[CBSE AIPMT-2009]**

(A) free infectious RNA

(B) free infectious DNA

(C) infectious protein

(D) bacteriophage

19. Some hyperthermophilic organisms that grow in highly acidic habitats belong to the two groups called **[CBSE AIPMT-2010]**

(A) eubacteria and archaea

(B) cyanobacteria and diatoms

(C) protists and mosses

(D) Liverworts and yeasts

20. Virus envelope is known as **[CBSE AIPMT-2010]**

(A) capsid **(B)** virion

(C) nucleoprotein **(D)** core

21. Organisms called methanogens are most abundant in a **[CBSE AIPMT-2011]**

(A) cattle yard **(B)** polluted stream

(C) hot spring **(D)** sulphur rock

22. In eubacteria, a cellular component that resembles eukaryotic cells is **[CBSE AIPMT-2011]**

(A) nucleus **(B)** ribosomes

(C) cell wall **(D)** plasma membrane

23. maximum nutritional diversity is found in the froup **[CBSE AIPMT-2010]**

(A) Fungi **(B)** Animalia

(C) Monera **(D)** Plantae

24. Nuclear membrane is absent in **[CBSE AIPMT-2012]**

(A) *Penicillium* **(B)** *Agaricus*

(C) *Volvox* **(D)** *Nostoc*

25. Which statement is wrong for viruses ? **[CBSE AIPMT-2012]**

(A) All are parasites

(B) All of them have helical symmetry

(C) They have ability to synthesise nucleic acids and proteins

(D) Antibiotics have no effect on them

26. The cyanobacteria are also referred to as **[CBSE AIPMT-2012]**

(A) protists **(B)** golden algae

(C) slime moulds **(D)** blue-green algae

27. Which of the following are likely to be present in deep sea water ? **[CBSE AIPMT-2012]**

(A) Archaebacteria **(B)** Eubacteria

(C) Blue-green algae **(D)** Saprophytic fungi

28. Pigment-containing membranous extensions in some cyanobacteria are **[CBSE AIPMT-2012]**

(A) heterocysts **(B)** basal bodies

(C) pneumatophores **(D)** chromatophores

29. Which of the following shows coiled RNA strand and capsomeres ? **[CBSE AIPMT-2014]**

(A) Polio virus

(B) Tobacco mosaic virus

(C) measles virus

(D) Retrovirus

30. Archaebacteria differ from eubacteria in **[CBSE AIPMT-2014]**

(A) cell membrane structure

(B) mode of nutrition

(C) cell shape

(D) mode of reproduction

31. The structures that help some bacteria to attach to rocks and /or host tissues are **[CBSE AIPMT-2015]**

(A) rhizoids **(B)** fimbriae

(C) mesosomes **(D)** holdfast

32. Select wrong statement. **[CBSE AIPMT-2015]**

(A) The viroids were discovered by DJ lvanowski

(B) WM stanley showed that viruses could be crystallised

(C) The term '*Contagium vivum fluidum*' was coined by MW Beijerinek

(D) Mosaic disease in tobacco and AIDS in human being are caused by viruses

33. Chormatophores take part in **[CBSE AIPMT-2015]**

(A) photosynthesis **(B)** growth

(C) movement **(D)** respiration

34. methanogens belong to **[NEET - 2016]**

(A) eubacteria **(B)** archaebacteria

(C) dinoflagellates **(D)** slime moulds

35. Which one of the following statements is wrong ? **[NEET - 2016]**

(A) Golden algae are also called desmids

(B) Eubacteria are also called false bacteria

(C) *Phycomycetes* are also called algal fungi

(D) Vyanobacteria are also called blue green algae

36. Which of the following statements is wrong for viroids **[NEET - 2016]**

(A) They are smaller than viruses

(B) They cause infections

(C) Their RNA is of high molecular weight

(D) They lack protein coat

37. The primitive prokaryotes responsible for the production of biogas from the dung of runinant animals, include the **[NEET - 2016]**

(A) thermoacidophiles **(B)** methanogens

(C) eubacteria **(D)** halophiles

38. Which among the following are the smallest living cells, known without a definite cell wall, pathogenic to plants arewell as animals and can survive without oxygen ? **[NEET - 2017]**

(A) *Bacillus* **(B)** *Pseudomonas*

(C) *Mycoplasma* **(D)** *Nostoc*

39. Viroids differ from viruses in having **[NEET - 2017]**

(A) DNA molecules with protein coat

(B) DNA molecules without protein coat

(C) RNA molecules with protein coat

(D) RNA molecules without protein coat

40. Which of the following are found in extreme saline conditions ? **[NEET - 2017]**

(A) Archaebacteria **(B)** Eubacteria

(C) Cyanobacteria **(D)** Mycobacteria

41. Extranuclear inheritance occurs in **[CBSE AIPMT-2001]**

(A) killer strain in *Paramecium*

(B) Colour blindness

(C) phenylketonuria

(D) Tay Sachs disease

42. The chief advantage of encystment to an *amoeba* is **[CBSE AIPMT-2003]**

(A) the chance to getb rid of accumulated waste products

(B) the ability to survive during adverse physical conditions

(C) the ability to live for some time without ingesting food

(D) protection from parasites and predators

43. When a freshwater protaozoan possessing a contractile vacuole is placed in a glass containing marine water, the vacuole will **[CBSE AIPMT-2004]**

(A) increase in number

(B) disappear

(C) increase in size

(D) decrease in size

44. Auxospores and hormocysts are formed respectively by **[CBSE AIPMT-2005]**

(A) several diatoms and a few cyanobacteria

(B) several cyanobacteria and several diatoms

(C) some diatoms and several cyanobacteria

(D) some cyanobacteria and many diatoms

45. What is common about *Trypanosoma, Noctiluca, Monocystis* and *Giardia* ? **[CBSE AIPMT-2006]**

(A) These are all unicellular protists

(B) They have flagella

(C) They produce spores

(D) These are all parasites

46. In which group of organisms the cell walls form two thin overlapping shells which fit together ? **[CBSE AIPMT-2015]**

(A) Chrysophytes **(B)** Euglenoids

(C) Dinoflagellates **(D)** Slime moulds

47. Pick up the wrong statement. **[CBSE AIPMT-2015]**

(A) Cell wall is absent in Animalia

(B) Protista have photosyntheitc and heterotrophic modes of nutrition

(C) Some fungi are edible

(D) Nuclear membrane is present in Monera

48. Select the wrong statement. **[NEET-2016]**

(A) The walls of diatoms are easily destructible

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

(C) Diatoms are chief producers in the oceans

(D) Diatoms are microscopic and float passively in water

49. Chrysophytes, euglenoids, dinoflagellates and slime moulds are included in the kingdom **[NEET-2016,]**

(A) Protista **(B)** Fungi

(C) Animalia **(D)** Monera

50. Lichens are well known combination of an alga and a fungus where fungus has **[CBSE AIPMT-2004]**

(A) a saprophytic relationship with the alga

(B) an epiphytic relationship with the alga

(C) a parasitic relationship with the alga

(D) a symbiotic relationship with the alga

51. There exists a close association between the alga and the fungus within a lichen the alga and the fungus within a lichen. The fungus. **[CBSE AIPMT-2001]**

(A) provides protection, anchorage and absorption for the alga

(B) provides food for the alga

(C) fixes the atmospheric nitrogen for the alga

(D) release oxygen for the alga

52. Which of the following environmental conditions are essential for optimum growth of *Mucor* on a piece of bread **[CBSE AIPMT-2006]**

(i) Temperature of about 25ºC

(ii) Temperature of about 5ºC

(iii) Relative humidity of about 5º

(iv) Relative humidity of about 95º

(v) A shady place

(vi) A brightly illuminated place

Choose the answer from the following options.

(A) (i), (iv) and (v) only

(B) (ii), (iv) and (v) only

(C) (ii), (iii) and (vi) only

(D) (i), (iii) and (v) only

53. The thalloid body of a slime mold (Myxomycetes) is known as **[CBSE AIPMT-2006]**

(A) *Plasmodium* **(B)** fruiting body

(C) mycelium **(D)** protonema

54. Which pair of the following belongs to Basidiomycetes **[CBSE AIPMT-2007]**

(A) Birds nest fungi and puff balls

(B) Puff balls and *Claviceps*

(C) *Peziza* and stink horns

(D) *Morchella* and mushrooms

55. Ergot of rye is caused by a species of **[CBSE AIPMT-2007]**

(A) *Phytophthora* **(B)** *Uncinule*

(C) *Ustilago* **(D)** *Claviceps*

56. Which of the following is a slime mold ? **[CBSE AIPMT-2007]**

(A) *Rhizopus* **(B)** *Physarum*

(C) *Thiobacillus* **(D)** *Anabaena*

57. Cellulose is the major component of cell walls of **[CBSE AIPMT-2008]**

(A) *Pythium* **(B)** *Xanthomonas*

(C) *Pseudomonas* **(D)** *Saccharomyces*

58. Trichoderma harzionum has proved a useful icroorganism for **[CBSE AIPMT-2008]**

(A) Bioremediation of contaminate soil

(B) recamation of wastelands

(C) gene transfer in higher plants

(D) biological control of soil-brone plant pathogens

59. Which one is the wrong pairing for the disease and its causal organism ? **[CBSE AIPMT-2009]**

(A) late blight of potato - *Alternaria solani*

(B) Black rust of wheat- *Puccinia graminis*

(C) Loose smut of wheat- *Ustilago nuda*

(D) Root-knot of vegetables -*Meoidogyne sp.*

60. Which one of the following has haplontic life cycle? **[CBSE AIPMT-2009]**

(A) *Funaria* **(B)** *Polytrichum*

(C) *Ustilago* **(D)** Wheat

61. The lighest number of species in the world is represented by **[CBSE AIPMT-2012]**

(A) Fungi **(B)** mosses **(C)** algae **(D)** lichens

62. The imperfect fungi which are decomposers of litter and help in mineral cycling belong **[CBSE AIPMT-2005]**

(A) Deuteromycetes **(B)** Basidiomycetes

(C) Phycomycetes **(D)** Ascomycetes

63. Choose the wrong statement **[CBSE AIPMT-2015]**

(A) *Penicillium* is multicellular and produces antibiotics

(B) Neurospora is used in the study of biochemical genetics

(C) Morels and truffles are poisonous mushrooms

(D) Yeast is unicellular and useful in fermaentation

64. Which one of the following is wrong for fungi ? **[NEET - 2016]**

(A) They are eukaryotic

(B) All fungi possess a purely cellulosic cell wall

(C) They are heterotrophic

(D) They are bothunicellular and multicellular

65. One of the major components of cell wall of most fungi is **[NEET - 2016]**

(A) Peptidoglycan **(B)** Cellulose

(C) Hemicellulose **(D)** Chitin

66. Which of the following would appear as the pioneer organisms on bare rocks. **[NEET - 2016]**

(A) Liverworts **(B)** Mosses

(C) Green algae **(D)** Lichens

67. Select the wrong statement : **[NEET - 2018]**

(A) Pseudopodia are locomotory and feeding structures in Sporozoans

(B) Mushrooms belong to Basidiomycetes.

(C) Cell wall is present in members of Fungi and Plantae.

(D) Mitochondria are the powerhouse of the cell in all kingdoms except Monera

68. Match the items given in Column i with those in Column II and select the correct option given below **[NEET - 2018]**

ColumnI	Column-II
a. Herbarium	i. It is a place having a collection of preserved plants and animals
b. Key	ii. A list that enumerates methodically all the species found in an area with brief de scription aiding identification
c. Museum	iii. Is a place where dried and pressed plant specimens mounted on sheets are kept
d. Catalogue	iv. A boollet containing a list of characters and their alternates which are helpful in identifica tion of various taxa

	a	**b**	**c**	**d**
(A)	ii	iv	iii	i
(B)	iii	ii	i	iv
(C)	i	iv	iii	ii
(D)	iii	iv	i	ii

Exercise # 4 PART - 2 PREVIOUS YEAR (AIIMS)

1. Which one of the following is correctly matched regarding an Institute and its location ? **2004]**

(A) National Institute of Virology - Pune

(B) National Institute of Communicable Diseases - Lucknow

(C) Central Drug Research Institute - Kasauli

(D) National Institute of Natrition - Mumbai

2. National bird of India is **[2009]**

(A) Psittacula **(B)** Passer domesticus

(C) Pavo cristatus **(D)** Parakeet

3. Eugenics is the branch concerned with **[2009]**

(A) improving the quality of human race by symptomatic treatment of genetic diseases

(B) improving the quality of human populations by the application of genetic principles

(C) improving the quality of human race by providing best suitable environment

(D) none of these

4. Which of the following features can be said to be a true defining feature of living beings without any exception ? **[2011]**

(A) they can digest their food.

(B) All of them can reproduce.

(C) They can regenerate.

(D) They can respond to external stimuli

Directions : In the following questions, a statements of assertion is followed by a statement of reason. Mark the correct choice as :

(A) If both assertion and reason are true and reason are true and reason is the correct explanation of assertion

(B) If both assertion and reason are true but reason is not the correct explanation of assertion.

(C) If assertion is true but reason is false.

(D) If both assertion and reason are false.

5. Viroids have **[2003]**

(A) single stranded RNA not enclosed by protein coat

(B) single stranded DNA not enclosed by protein coat

(C) double stranded DNA enclosed by protein coat

(D) double stranded RNA enclosed by protein coat.

6. "Ordines Anomali" of Bentham and Hooker includes **[2006]**

(A) seed plants showing abnormal forms of growth and development

(B) plants described only in fossil state

(C) plants described in the literature but which Bentham and Hooker did not see in original

(D) a few order which could not be placed satisfactorily in the classification.

7. Protista differs from monera in having **[2010]**

(A) cell wall **(B)** autotrophic nutrition

(C) flagella **(D)** nuclear membrane.

8. the taxon which includes related species is **[2010]**

(A) class **(B)** order

(C) family **(D)** genus

9. Match the following columns and select the correct option. **[2010]**

Column I	Column II
(A) Panthera tigris	i Mango
(B) Mangifera indica	ii Common Indian frog
(C) Musca domestica	iii Cockroach
(D) Periplaneta americana	(iv) Tiger
(E) Rana tigerina	v House fly

(A) A - ii, B - v, C - i, D - iii, E - iv

(B) A - iv, B - i, C - v, D - iii, E - ii

(C) A - ii, B - v, C - iii, D - i, E - iv

(D) A - iv, B - i, C - v, D - ii, E - iii

10. Which of the following is correct ? **[2010]**

(A) All fungi are filamentous.

(B) Transfer of DNA from one bacteria to another bacteria cannot take place.

(C) virus cannot have both DNA and RNA.

(D) Protists reproduce asexually only.

11. Which of the following is correctly matched without exception in regard to plant classification ? **[2013]**

(A) Family – Poaceae - ae

(B) Division – Pteridophyta - phyta

(C) Class – Bryopsida - sida

(D) Genus – Solanum - um

12. Which of the following is the correct scientific name of wheat derived by binominal nomechature ? **[2016]**

(A) Triticum Vulgare **(B)** Triticum aestivum

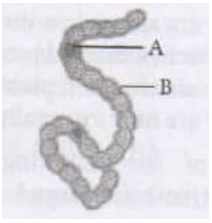
(C) Oryza sativa **(D)** Zea mays

13. The genetic material in tobacco mosaic virus is **[2016]**

(A) ss DNA **(B)** ss RNA

(C) ds RNA **(D)** ds DNA

14. Identify the labelled part in the given figure and select the correct option. **[2016]**



	A	B
(A)	heterocyst	Mucilaginous sheath
(B)	Mucilaginous sheath	heterocyst
(C)	Heterocyst	Capsid
(D)	Pseudopodia	Mucilaginous sheath

Directions : In the following questions, a statements of assertion is followed by a statement of reason. Mark the correct choice as :

(A) If both assertion and reason are true and reason are true and reason is the correct explanation of assertion

(B) If both assertion and reason are true but reason is not the correct explanation of assertion.

(C) If assertion is true but reason is false.

(D) If both assertion and reason are false.

15. **Assertion :** Algae and fungi are classified as thallophytes. **[2007]**

Reason : they both are autotrophs.

16. **Assertion :** Complexity of classification increases from kingdom to species. **[2012]**

Reason : Common characters increase from kingdom to species.

17. **Assertion :** Consciousness is considered as the defining property of living organisms. **[2016]**

Reason : All organisms, from the prokaryotes to the most complex eukaryotes can sense and respond to environmental stimuli.

18. Which one of the following categories of organisms do not evolve oxygen during photosynthesis ? **[2004]**

(A) Red algae

(B) Photosynthetic bacteria

(C) C4 plants with Kranz anatomy

(D) Blue green algae

19. In prokaryotes, chromatophores are **[2006]**

(A) specialised granules responsible for colouration of cells

(B) structures responsbile for organising the shape of the organism

(C) inclusion bodies lying free inside the cells for carrying out various metabolic activities

(D) internal membrane systems that may become extensive and complex in photosynthetic bacteria.

20. Thermococcus, Methanococcus and Methanobacterium exemplify [2008]

(A) bacteria whose DNA is relased or positively supercoiled but which have a cytoskeleton as well as mitochondria

(B) bacteria that contain a cytoskeleton and ribosomes

(C) archaebacteria that contains protein homologous to eukaryotic core histones

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

21. The outermost limiting layer of mycoplasma is made up of [2009]

(A) cell wall **(B)** cell membrane

(C) mucilaginous sheath **(D)** slime layre

22. By all of the following ways bacteria become resistant to antibiotic except [2009]

(A) making enzyme that inactivate the drug

(B) becoming impermeable to the drug

(C) modifying the target of the drug

(D) moving away from the drug

Directions : In the following questions, a statements of assertion is followed by a statement of reason. Mark the correct choice as :

(A) If both assertion and reason are true and reason are true and reason is the correct explanation of assertion

(B) If both assertion and reason are true but reason is not the correct explanation of assertion.

(C) If assertion is true but reason is false.

(D) If both assertion and reason are false.

23. **Assertion :** Gram-negative bacteria do not retain the when washed with alcohol. [2006]

Reason : The outer face of the outer membrane of Gram-negative bacteria contains lipopolysaccharides, a part of which is integrated into the membrane lipids.

24. **Assertion :** Pili are tubular structures present in bacteria which help in conjugation. [2016]

Reason : Formation of pili is controlled by F' or fertility factor.

25. In the following table identify the correct matching of the crop, its disease and the corresponding pathogen. [2006]

	Crop	Disease Pathogen
(A)	Citrus	Canker Pseudomonas rubrilineans
(B)	Potato	Late blight Fusarium udum
(C)	Brinjal	Root-knot Meloidogyne incognita
(D)	Pigeon pea	Seed gall Phytophthora infestans

26. Myxomycetes are [2006]

(A) saprobes or parasites, having mycelia, asexual reproduction by fragmentation, sexual reproduction by fusion of gametes

(B) slimy mass of multinucleate protoplasm, having pseudopodia-like structures for engulfing food, reproduction through fragmentation of zoospores

(C) prokaryotic organisms, cellular or acellular, saprobes or autotrophic, reproduce by binary fission

(D) eukaryotic, single-celled or filamentous, saprobes or autotrophic, asexual reproduction by fusion of two cells or their nuclei.

27. Among rust, smut and mushroom all the three [2006]

(A) are pathogens **(B)** are saprobes

(C) bear ascocarps **(D)** bear basidiocarps

28. Deuteromycetes are known as fungi imperfecti because [2012]

(A) their zygote undergoes meroblastic and holoblastic cleavage

(B) only asexual stages are known

(C) they have aseptate mycelium

(D) they are autotrophic

29. Yeast is not included in protozoans but in fungi becasue [2016]

(A) it has chlorophyll

(B) it shows saprotrophic mode of nutrition

(C) it has eukaryotic organisation

(D) cell wall is made up of cellulose and reserve food material as starch.

30. Fungi are filamentous with the exception of "X" which is unicellular. Identify X. **[2017]**

(A) Yeast **(B)** Albugo
(C) Mucor **(D)** Lichen

31. Which of the following statements is not correct for viruses? **[2017]**

(A) Viruses are obligate parasites.
(B) Viruses can multiply only when they are inside the living cells.
(C) Viruses cannot pass through bacterial filters.
(D) Viruses are made up of protein and DNA or RNA (never both DNA and RNA).

32. Which of the following statements regarding cyanobacteria is incorrect? **[2017]**

(A) It is also called blue green algae.
(B) They are chemosynthetic autotrophs.
(C) It forms blooms in polluted water bodies.
(D) It is unicellular, colonial or filamentous, marine or terrestrial bacteria.

33. Match the column **[2018]**

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

(A) a- iii, b - ii, c - i, d - iv
(B) a- ii, b - i, c - iv, d - iii
(C) a- i, b - ii, c - iii, d - iv
(D) a- iv, b - iii, c - i, d - ii

Directions : In the following questions, a statements of assertion is followed by a statement of reason. Mark the correct choice as :

(A) If both assertion and reason are true and reason are true and reason is the correct explanation of assertion
(B) If both assertion and reason are true but reason is not the correct explanation of assertion.
(C) If assertion is true but reason is false.
(D) If both assertion and reason are false.

34. **Assertion :** The fungi are widespread in distribution and they ever live on or inside other plants and animals. **[2005]**
Reason : Fungi are able to grow anywhere on land, water or on other organisms because they have a variety of pigments, including chlorophyll, carotenoids, fucoxanthin and phycoerythrin.

35. **Assertion** : Neurospora is commonly called water mould. **[2007]**
Reason : It belongs to basidomycetes fungi.

36. **Assertion** : Protoplasmic continuity is maintained in perforated septum. **[2008]**
Reason : Usually a small pore remains in the centre of the septum.

37. **Assertion** : In basidiomycetes, basidiospores are produced endogenously in the basidium .**[2014]**
Reason : In ascomycetes, ascospores are produced exogenously in ascus.

38. **Assertion** : TMV is a virus which causes mosaic disease. **[2017]**
Reason : TMV has RNA as genetic material.

MOCK TEST

THE LIVING WORLD

1. Nomenclautre is governed by certain universal rules. Which one of the following is contary to the rules of nomenclature?

(A) The names are written in Latin and are italicised.

(B) When written by hand the names are to be underlined.

(C) Biological names can be written in any language

(D) The first word in a biological name represents the genus name and the second is a specific epithet.

2. Which of the following is the correct scientific name of wheat derived by binominal nomenclature?

(A) *Triticum Vulgare* **(B)** *Triticum aestivum*

(C) *Oryza sativa* **(D)** *Zea mays*

3. **Assertion :** Consciousness is considered as the defining property of living organisms.

Reason : All organisms, from the prokaryotes to the most complex eukaryotes can sense and respond to environmental stimuli.

(A) If both assertion and reason are true and reason is the correct explanation of assertion.

(B) If both assertion and reason are true but reason is not the correct explanation of assertion.

(C) If assertion is true but reason is false.

(D) If both assertion and reason are false.

4. ICBN stands are

(A) Indian Council of British Nature **(B)** International Code for Biological Nomenclature

(C) International Code for Botanical Nomenclature **(D)** Indian Code for Biological Nomenclature.

5. Binomial nomenclature means

(A) one name given by two taxonomists

(B) two names, the latinized, oter of a person

(C) two names, one scientific, other local

(D) two-word names, the first indicates genus, and other species.

6. Scientific names of plants are based on principles and criteria agreed by and are given in

(A) IUCN **(B)** ICZN

(C) ICBN **(D)** ICPN

7. Point out the correct method of showing scientific name of coconut palm derived by binomial nomenclature.

(A) *Cocos nucifera* **(B)** *Cocos Nucifera*

(C) *cocos Nucifera* **(D)** *Cocos nucifera*

8. Read the statements given below and identify the incorrect statement.

(A) Scientific names are used all over the world.

(B) Scientific names are often descriptive and tell us some important character of an organism.

(C) Scientific names indicate relationship between species.

(D) Scientific names favour multiple naming for the same kind of an organism.

9. Who is regarded as the 'Father of Taxonomy'?

(A) John Ray **(B)** Carolus Linnaeus

(C) A.P. de Candolle **(D)** Charles Darwin

10. Carolus Linnaeus is associated with

(A) Iinheritance of acquired characters **(B)** binomial nomenclature

(C) law of independent assortment **(D)** law of limiting factors.

11. The term taxonomy is introduced by

(A) de Candolle **(B)** Bentham and Hooker

(C) Linnaeus **(D)** Huxley

12. Scientific study of diversity of organisms and their evolutionary relationships is called

(A) morphology **(B)** anatomy **(C)** taxonomy **(D)** systematics

13. Who among following is the Father of Botany?

(A) Aristotle **(B)** Carolus Linnaeus **(C)** Robert Hooke **(D)** Theophrastus

14. *Systema Naturae* was written by

(A) Darwin **(B)** John Ray

(C) Aristotle **(D)** Carolus Linnaeus

15. Which nomenclature was given by Linnaeus?

(A) Multinomial **(B)** ICZN **(C)** Binomial **(D)** IUPAC

16. *Systema Nature* was written by

(A) Ernst Mayr **(B)** Carolus Linnaeus **(C)** R.H. Whittaker **(D)** W.M. Stanley

(E) M.W. Beijernick

Taxonomic Categories

17. Match column I with column II for housefly classification and select the correct option using the codes given below.

Column I	**Column II**
A. Family	i. Diptera
B. Order	ii. Arthropoda
C. Class	iii. Muscidae
D. Phylum	iv. Insecta

(A) A-iii, B-i, C-iv, D-ii **(B)** A-iii, B-ii, C-iv, D-i

(C) A-iv, B-iii, C-ii, D-i **(D)** A-iv, B-ii, C-i, D-iii

18. Arrange the following in ascending order of Linnaean hierarchy.

(A) Kingdom-Phylum-Class-Order-Family-Genus-Species

(B) Kingdom-Family-Genus-Species-Class-Phylum-Order

(C) Kingdom-Order-Species-Genus-Class-Family-Phylum

(D) Species-Genus-Family-Order-Class-Phylum-Kingdom

19. Which of the following shows, the hierarchical arrangement of taxonomic categories of plants in descending order?

(A)	**(B)**	**(C)**	**(D)**	**(E)**
Kingdom	Kingdom	Kingdom	Kingdom	Kingdom
↑	↑	↓	↓	↓
Division	Division	Division	Division	Division
↑	↑	↓	↓	↓
Class	Order	Order	Class	Family
↑	↑	↓	↓	↓
Order	Class	Class	Order	Order
↑	↑	↓	↓	↓
Family	Family	Family	Family	Class
↑	↑	↓	↓	↓
Species	Genus	Genus	Genus	Genus
↑	↑	↓	↓	↓
Genus	Species	Species	Species	Species

20. Select the correct statement.

(A) Biological names are generally in Greek and written in italics.

(B) Family comprises a group of related species which has more characters in common.

(C) *Triticum aestivum* comes under the order Sapindales.

(D) An order includes related classes.

(E) Families like Convolvulaceae, Solanaceae are included in the order Polymoniales mainly based on the floral characters.

21. Which of the following is correctly matched without exception in regard to plant classification?

(A) Family	–	Poaceae - ae
(B) Division	–	Pteridophyta - phyta
(C) Class	–	Bryopsida - sida
(D) Genus	–	*Solanum* - um

22. Match the following and choose the correct combination from the options given.

Column I	**Column II**
(Common name)	**(Taxonomica category Order)**
A. Wheat	i. Primata
B. Mango	ii. Diptera
C. Housefly	iii. Sapindales
D. Man	iv. Poales

(A) A-i, B-ii, C-iv, D-iii **(B)** A- iv, B-iii, C-ii, D-i

(C) A-ii, B-iv, C-i, D-iii **(D)** A-iii, B- iv, C-ii, D-i

(E) A-iv, B-ii, C-iii, D-i

23. Which of the following is correct hierarchical order of taxonomic categories?

(A) Kingdom, phylum, class, order, family, genus, species

(B) Kingdom, phylum, class, family, order, genus, species

(C) Division, class, kingdom, order, species, family

(D) Division, kingdom, family, class, order, species

24. Herbarium sheets are arranged according to the system of classification and should have information about

(A) time and place of collection, English, local and botanical names, phylum, collector's name

(B) date and time of collection, English, local and botanical names, class, collector's name

(C) date and place of collection, English, local and botanical names, order, collector's name

(D) date and place of collection, English, local and botanical names, family, collector's name.

25. Which of the following statement(s) about taxonomical aids is/are true?

I. Keys are used to identify plants and animals based on similarities and dissimilarities.

II. Flora contains the account of habitat and distribution of plants in a given area.

III. Flora provides an index to the plant species found in a particular area.

IV. Monographs provide information for identifying the species found in an area.

(A) I and II only **(B)** I, II and III only **(C)** I and IV only **(D)** I only

(E) IV only

Assertion & Reason

(A) If both assertion and reason are true and reason is the correct explanation of assertion.

(B) If both assertion and reason are true but reason is not the correct explanation of assertion.

(C) If assertion is true but reason is false.

(D) If both assertion and reason are false.

26. **Assertion :** Phylogeny is the developmental history of a species.
Reason : Species is the basic unit of taxonomy

27. **Assertion :** Systematics is the branch of biology that deals with classification of living organisms.
Reason : The aim of classification is to group the organisms

28. **Assertion :** Acraniata is a group of organisms which do not have distinct cranium.
Reason : It includes small marine forms without head .

29. **Assertion :** Taxon and category are same things
Reason : Category shows hierarchical classification.

30. **Assertion :** Living organisms possess specific individuality with the definite shape and size.
Reason : Both living and non living entities resemble each other at the lower level of organization

BIOLOGICAL CLASSIFICATION

1. In five Kingdom classification, single celled eukaryotes are included in

(A) Fungi **(B)** Protista **(C)** Monera **(D)** Archaea

2. Five kingdom system of classification suggested by R.H. Whittaker is not based on

(A) presence or absence of a well defined nucleus

(B) mode of reproduction

(C) mode of nutrition

(D) complexity of body organisation

3. Classification which is based on evolutionary relationship of various organisms is

(A) artificial classification **(B)** natural classification

(C) the five kingdom classification **(D)** phylogenetic classification

4. Consider the following statements with respect to characteristic features of the kingdom.

A.In Animalia the mode of nutrition is autotrophic.

B.In Monera the nuclear membrane is present.

C.In Protista the cell type is prokaryotic.

D.In Plantae the cell wall is present.

Of the above statements

(A) A alone is correct **(B)** B alone is correct

(C) C alone is correct **(D)** D alone is correct

(E) A, B and C are correct

5. Match the following and select the correct combination from the options given below.

Column I (Class)	**Column II (Kingdom)**
A. Plantae	i. Archaebacetria
B. Fungi	ii. Euglenoids
C. Protista	iii. Phycomycetes
D. Monera	iv. Algae

(A) A- iv, B-iii, C-ii, D-i **(B)** A- i, B-ii, C-iii, D- iv

(C) A-iii, B- iv, C-ii, D-i **(D)** A- iv, B-ii, C-iii, D-i

(E) A-ii, B-iii, C- iv, D-i

6. Two kingdoms constantly figured in all biological classifications are

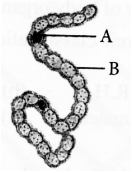
(A) Plantae and Animalia

(B) Monera and Animalia

(C) Protista and Animalia

(D) Protista and Plantae

7. Identify the labelled part in the given figure and select the correct option.



	A	B
(A)	Heterocysts	Mucilaginous sheath
(B)	Mucilaginous sheath	Heterocysts
(C)	Heterocysts	Capsid
(D)	Pseudopodia	Mucilaginous sheath

8. Pick up the wrong statement.

(A) Some fungi are edible

(B) Nuclear membrane is present in Monera

(C) Cell wall is absent in Animalia

(D) Protists have photosynthetic and heterotrophic modes of nutrition

9. Of the following statements which are not relevant to Archaebacteria?

A. They live in some of the most harsh habitats.

B. They are present in the gut of several ruminant animals.

C. They are characterised by the presence of a rigid cellulosic cell wall.

D. They include mycoplasma.

E. They are also referred to as blue-green algae.

(A) A, B and C **(B)** A, C and E **(C)** C, D and E **(D)** A, C and D

(E) B, C and E

10. Pigment containign membranous extensions in some cyanobacteria are

(A) pneumatophores **(B)** chromatophores **(C)** heterocysts **(D)** basal bodies

11. Many blue-green algae occur in thermal springs (hot water springs). The temperature tolerance of these algaehas been attributed to

(A) mitochondrial structure **(B)** homopolar bonds in their proteins

(C) cell wall structure **(D)** modern cell organisation

12. The most abundant prokaryotes helpful to humans in making curd from milk and in production of antibiotics are the ones categorised as

(A) cyanobacteria **(B)** archaebacteria

(C) chemosynthetic autorophs **(D)** heterotrophic bacteria

13. Select the correct combination of the statements (i-iv) regarding the characteristics of certain organisms.

(i) Methanogens are archaebacteria which produce methane in marshy areas.

(ii) *Nostoc* is filamentous blue-green alga which fixes atmospheric nitrogen.

(iii) Chemosynthetic autotrophic bacteria synthesise cellulose from glucose.

(iv) Mycoplasma lack a cell wall and can survive without oxygen.

The correct statement are

(A) (ii) and (iii) **(B)** (i), (ii) and (iii) **(C)** (ii), (iii) and (iv) **(D)** (i), (ii) and (iv)

14. Select the wrong statements.
(A) The wall of diatoms are easily destructible.
(B) 'Diatomaceous earth' is formed by the cell walls of diatoms.
(C) Diatoms are chief producers in the oceans.
(D) Diatoms are microscopic and float passively in water.

15. Which of these is wrong about diatoms?
(A) Microscopic **(B)** Planktonic **(C)** Overlapping shells **(D)** Spores with 2 flagella
(E) Silica cell wall

16. Match the following and choose the correct combination from the options given.

Column I	Column II
A. Saprophytic protists	i. *Trypanosoma*
B. Golden algae	ii. *Plasmodium*
C. Malarial parasite	iii. Desmids
D. Sleeping sickness	iv Slime moulds is caused by

(A) A-i, B-ii, C-iii, D-iv **(B)** A-ii, B-iii, C-iv, D-i **(C)** A-iv, B-iii, C-iv, D-i **(D)** A-iii, B-iv, C-ii, D-i
(E) A-ii, B-iv, C-i, D-iii

17. Which one of the following is wrong for fungi?
(A) They are eukaryotic **(B)** All fungi possess a purely cellulosic cell wall.
(C) They are heterotrophic. **(D)** They are both unicellular and multicellular.

18. Consider the following statements with respect to fungi.
A. They show a great diversity in morphology and habitat.
B. The white spots seen on mustard leaves are due to a saprophytic fungus.
C. They prefer to grow in cold and humid places.
D. The cell walls of fungi are composed of chitin and polysaccharides.
Of the above statements
(A) A and B are correct **(B)** A and D are correct **(C)** A and C are correct **(D)** B and D are correct
(E) B and C are correct

19. Match Column I with Column II and choose the right option.

Column I	Column II
A. *Claviceps*	i. Deuteromycetes
B. *Puccinia*	ii. Ascomycetes
C. *Trichoderma*	iii. Basidiomycetes

(A) A-iii, B-i, C-ii **(B)** A-ii, B-iii, C-i **(C)** A-i, B-iii, C-ii **(D)** A-iii, B-ii, C-i
(E) A-ii, B-i, C-iii

20. Match the following and choose the correct combination from the options given.

Column I (Group)	Column II (Example)
A. Eubacteria	i. *Trichoderma*
B. Dinoflagellates	ii. *Albugo*
C. Phycomycetes	iii. *Gonyaulax*
D. Deuteromycetes	iv. *Anabaena*

(A) A-1, B-2, C-3, D-4 **(B)** A-2, B-3, C-4, D-1 **(C)** A-4, B-3, C-2, D-1 **(D)** A-3, B-4, C-1, D-2
(E) A-4, B-3, C-1, D-2

21. Match Column I with Column II and select the correct option.

Column I	Column II
A. Morels	i. Deuteromycetes
B. Smut	ii. Ascomycetes
C. Bread mould	iii. Basidiomycetes
D. Imperfect fungi	iv. Phycomycetes

(A) A-3, B-4, C-1, D-2 **(B)** A-2, B-3, C-4, D-1 **(C)** A-4, B-1, C-2, D-3 **(D)** A-3, B-4, C-2, D-1
(E) A-2, B-1, C-4, D-3

22. Which of the following statements is wrong for viroids?
(A) They cause infections. **(B)** Their RNA is of high molecular weight.
(C) They lack a protein coat. **(D)** They are smaller than viruses.

23. The genetic material in tobaco mosaic virus is
(A) ss DNA **(B)** ss RNA **(C)** ds RNA **(D)** ds DNA

24. Pick out the statement that does not apply to viroids.
(A) Infectious agents smaller than viruses **(B)** Cause potato spindle tuber disease
(C) Have free DNA **(D)** Lack protein coat
(E) Discovered by T.O. Diener

25. Which of the following is wrongly matched?
(A) T.O.Diener – Viroids are found to be free DNA
(B) W.M.Stanley – Crystallised proteins
(C) M.W.Beijerinck – *Contagium vivum fluidum*
(D) D.J.Ivanowski – Microbes smaller than bacteria cause mosaic disease of tobacco
(E) L.Pasteur – Virus means venom or poisonous fluid

Assertion & Reason

(A) If both assertion and reason are true and reason is the correct explanation of assertion.
(B) If both assertion and reason are true but reason is not the correct explanation of assertion.
(C) If assertion is true but reason is false.
(D) If both assertion and reason are false.

26. **Assertion :** Bacterial photosynthesis occurs by utilizing wavelength longer than 7000nm.
Reason : here reaction centre is B-890.

27. **Assertion :** The nitrogen fixing bacteria in leguminous plant nodules live as symbionts
Reason : Leg haemoglobin synthesized leguminous plants protect bacteria.

28. **Assertion :** Slime noulds show alternation of generation.
Reason : The sporangia bearing slime moulds represent haplophase.

29. **Assertion :** *Trichomonas vaginalis* causes infection only in women.
Reason : *Trichomonas* buccalis lives in the buccal cavity

30. **Assertion :** Aflatoxins are produced by aspergillus flavus.
Reason : These toxins are useful to mankind.

ANSWER KEY

EXERCISE - 1

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

EXERCISE - 2

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

EXERCISE - 3 : PART - 1

1. B 2. A 3. D 4. A 5. B 6. C 7. A 8. D 9. B 10. A 11. A 12. A 13. A
14. C 15. B 16. A

PART - 2

1. B 2. D 3. B 4. C 5. B 6. B 7. A 8. C 9. D 10. B 11. D 12. B 13. A
14. D 15. C 16. B 17. A 18. B 19. A 20. B 21. B 22. A 23. (E) 24. B 25. B 26. B
27. B 28. A 29. C 30. B 31. D 32. B 33. D 34. C 35. B 36. C 37. A 38. D 39. A
40. D 41. C 42. B 43. A 44. B 45. B 46. A 47. A 48. B 49. C 50. D 51. A 52. C
53. C 54. D 55. A 56. A 57. C 58. (E) 59. (E) 60. A 61. C 62. C 63. (E) 64. B 65. C
66. (E) 67. B 68. (E) 69. B 70. C 71. C 72. (E) 73. C 74. B 75. C 76. A 77. A 78. B
79. B 80. C 81. B 82. A 83. (E) 84. C 85. D 86. A 87. B

EXERCISE - 4 : PART - 1

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

PART - 2

1. A 2. C 3. B 4. D 5. A 6. D 7. D 8. D 9. B 10. C 11. A 12. B 13. B
14. A 15. C 16. B 17. A 18. B 19. D 20. D 21. B 22. D 23. B 24. B 25. C 26. B
27. A 28. B 29. B 30. A 31. C 32. B 33. A 34. C 35. D 36. A 37. D 38. A

MOCK TEST

THE LIVING WORLD

1. C 2. B 3. A 4. C 5. D 6. C 7. A 8. D 9. B 10. B 11. A 12. D 13. D
14. D 15. C 16. B 17. A 18. D 19. D 20. E 21. A 22. B 23. A 24. D 25. B 26. B
27. B 28. B 29. E 30. B

BIOLOGICAL CLASSIFICATION

1. B 2. B 3. D 4. D 5. A 6. A 7. A 8. B 9. C 10. B 11. B 12. D 13. D
14. A 15. D 16. C 17. B 18. C 19. B 20. B 21. C 22. B 23. B 24. B 25. C 26. B
27. A 28. C 29. E 30. C