

## NOMENCLATURE, CLASSIFICATION, SPECIES CONCEPT

1. Mayr proposed which type of concept of species:-  
 (1) Taxonomic concept (2) Biological concept  
 (3) Taxonomic and Biological concept (4) Genetic concept
2. Artificial system of classification classifies plants on the basis of :-  
 (1) One or two characters (2) Phylogenetic trends  
 (3) Many naturally existing characters (4) None of the above
3. The term systematic was introduced by :-  
 (1) Mayr (2) Bentham (3) Hutchinson (4) Unnaeus
4. Group of organisms that closely resemble each other and freely interbreed in nature, constitute a:-  
 (1) Species (2) Genus (3) Family (4) Taxon
5. ICBN was first published in :-  
 (1) 1961 (2) 1964 (3) 1975 (4) 1753
6. The term taxon refers to :-  
 (1) Name of a species (2) Name of genus  
 (3) Name of family (4) A taxonomic group of any rank
7. The scientific naming of plants began with publication of Linnaeus book :  
 (1) Genera plantarum (2) Systema naturae (3) Species plantarum (4) Charaka samhita
8. Which book most impressed the opinion of taxonomists?  
 (1) Enquiry into plants (2) Origin of life  
 (3) Genera plantarum (4) Origin of species
9. The basic smallest unit of classifications is :-  
 (1) Genus (2) Species (3) Order (4) All of the above
10. Plant nomenclature means:-  
 (1) To give names to plants without any rules  
 (2) Nomenclature of plants under the international rule  
 (3) Nomenclature of plants in local language  
 (4) Nomenclature of plants in english language
11. Taxonomy term given by :-  
 (1) Unnaeus (2) Mayr (3) Haeckel (4) A.P. de. Candolle

12. Which of the following is a correct name ?  
(1) Solanum tuberosum (2) Solanum Tuberosum  
(3) Solanum tuberosum Linn. (4) All the above
13. Systematics deals with :-  
(1) Classification (2) Nomenclature (3) Identification (4) All of these
14. Scientific name of Mango plant is Magnifier indicia Linn. in the above name Linn. refers to :-  
(1) Variety of Mango  
(2) A taxonomist who proposed the present nomenclature in honour of Linnaeus  
(3) A scientist who for the first time described Mango plant  
(4) A scientist who changed the name proposed by Linnaeus and proposed present name
15. Phylogeny refers to :-  
(1) Natural classification (2) Evolutionary classification  
(3) Evolutionary history (4) Origin of algae
16. Biological concept of species is given by:-  
(1) Aristotle (2)Bentham (3)Koch (4) Mayr
17. In taxonomy the first step is :-  
(1) Identification (2) Nomenclature (3) Classification (4) Affinities
18. A large number of unknown species of plants and animals are believed to be present in:-  
(1) Temperate forests (2) Antarctica (3) Taiga (4) Tropical forest
19. Who wrote system nature?  
(1) Linnaeus (2) Mary (3)John Ray (4) De Candolle
20. For higher plants, flowers are chiefly used as a basis of classification, because :-  
(1) These show a great variety in colour  
(2) It can be preserved easily  
(3) Reproductive parts are more conservative than vegetative parts  
(4) None of these
21. Who wrote species plant arum ?  
(1) Linnaeus (2) Mayr (3)Bentham (4) Aristotle
22. The binomial system of nomenclature was given by :-  
(1) Magnus (2) Linnaeus (3) Caesalpinno (4) Discorides
23. Who is regarded as "Darwin of 20th century"?  
(1) John Ray (2) Lamarck (3) Ernst Mary (4)Darwin
24. A division is formed by combining several :  
(1) Orders (2) Families (3) Classes (4) Tribes

25. For declaration of new species of higher plants what characters are mainly used :-  
 (1) Floral character of new species (2) Anatomical characters of new species  
 (3) Physiological character of new species (4) Character of endosperm
26. The standard size of herbarium sheets is :-  
 (1) 11.5" × 16.5" (2) 15.5" × 16.5" (3) 18.5" × 10.5" (4) 20.5" × 21.5"
27. Which statement is true ?  
 (1) Tautonyms are not allowed in plants  
 (2) Tautonyms are not allowed in animals  
 (3) Tautonyms normally allowed in animals and some time allowed in plants  
 (4) Tautonyms allowed only in bacteria
28. Trinomial nomenclature of classification was proposed by:-  
 (1) Linnaeus (2) Huxley and Strickland  
 (3) John-Ray (4) Theophrastus
29. Most of the botanical names are derived from the following language :  
 (1) German (2) Greek (3) Latin (4) Spanish
30. Evolutionary classification is called :-  
 (1) Artificial system (2) Natural system  
 (3) Phylogenetic system (4) None of the above
31. Which of the following statements regarding nomenclature is correct ?  
 (1) Generic name always begins with capital letter whereas specific epithet with small letter  
 (2) Scientific nomenclature should be printed in italics  
 (3) Scientific nomenclature when typed or handwritten should be separately underlined  
 (4) All the above

### HISTORY OF TAXONOMY

32. According to Whittaker, BGA are included in :-  
 (1) Mycota (2) Protista (3) Plantae (4) Monera
33. By Bentham-Hooker, how many families are placed in gymnospermae class :-  
 (1) 86 (2) 88 (3) 45 (4) 3
34. "Genera Plantarum" was written by :-  
 (1) Engler and Prantal (2) Hutchinson  
 (3) Bentham & Hooker (4) Bessey
35. Chief merit of Bentham and Hooker's classification is that :-  
 (1) It is a system mostly based on evolutionary concepts  
 (2) It is a natural systems of classification of all groups  
 (3) The description of the taxa are based on actual observation of the specimen

- (4) It also considers the phylogenetic aspects
36. The system of classification proposed by Bentham and Hooker is :-  
 (1) Artificial (2) Natural (3) Phylogenetic (4) Numerical
37. The classification of Linnaeus was mainly based on :-  
 (1) Sepals (2) Stem (3) Petals (4) Stamens
38. Kingdom Moneta comprises the :-  
 (1) Plants of economic importance (2) All the plants studied in botany  
 (3) Prokaryotic organisms (4) Plants of Thallophyta group
39. Whittaker is famous for:-  
 (1) Two kingdom classification (2) Four kingdom classification  
 (3) Five kingdom classification (4) Distinguishing in Bacteria & blue gree Algae
40. System of classification proposed by Linnaeus was:-  
 (1) Artificial (2) Natural (3) Sexual (4) (1) and (3) both
41. The group "Plantae" proposed by Whittaker includes :-  
 (1) Pteridophytes (2) Gymnosperms (3) Angiosperms (4) All the above
42. In Whittaker's five kingdom classification, eucaryotes were assigned to :-  
 (1) All the five kingdom (2) Only four of the five kingdoms  
 (3) Only three kingdom (4) Only one kingdom
43. The book genera plantarum which contains the classification of seed plants was wrote by :-  
 (1) Linnaeus (2) De jussieu  
 (3) Bentham and Hooker (4) Eichler
44. "Theorie elementaire de Ia botanique" is the book of :-  
 (1) Takhtajan (2) De Candolle (3) Eichler (4) Linnaeus
45. Carolus Unnaeus classified plant kingdom on the basis of :-  
 (1) Roral morphology (2) Overall morphology of plants  
 (3) Type of sexual reproduction (4) Anatomical character
46. First plant classification was given by :-  
 (1) Linnaeus (2) John-Ray (3) Aristotle (4) Darwin
47. According to Bentham & Hooker total families of real flowering plants :-  
 (1) 202 (2) 199 (3) 34 (4) 85
48. The word Cryptogamia was coined by :-  
 (1) Theophrastus (2) Linnaeus  
 (3) Bentham & Hooker (4) John-Ray

49. "Systema Naturae" book was written by:-  
 (1) Angler and Prantle (2) Darwin (3) Unnaeus (4) Oswald & Tippo
50. According to Whittaker kingdom protista includes:-  
 (1) Prokaryotes (2) Unicellular eukaryotes  
 (3) Slime molds & protozoa (4) Multicellular & eukaryotes

### KINGDOM - MONERA

51. Enfolding of plasma membrane in bacteria are called as :-  
 (1) Episomes (2) Plasmid (3) Pili (4) Mesosomes
52. The organisms participating most actively in nitrogen cycle in nature are :-  
 (1) Bacteria (2) Legumes (3) Parasitic algae (4) Fungi
53. Heterocyst is a structure which is associated with  
 (1) Reproduction (2) Respiration (3) Nitrogen fixation (4) Locomotion
54. Trichodesmium erythrum which imparts red colour to sea water of red sea is a :  
 (1) Cyanobacterium (2) Red Algae (3) Diatom (4) Red- Coral
55. Archaeobacterial cell lacks :-  
 (1) Peptidoglycan (2) DNA (3) Ribosomes (4) Branched Chain Lipids
56. Most common method of reproduction in prokaryotes :-  
 (1) Budding (2) Binary fission (3) Transduction (4) Conjugation
57. Harmful activity of Blue green algae is:-  
 (1) Gentrification (2) Water – bloom  
 (3) Increase alkalinity of soil (4) Decrease fertility of soil
58. The function of mesosome in prokaryotes is:-  
 (1) Aerobic respiration (2) Cell wall formation  
 (3) Both (1) and (2) (4) N<sub>2</sub> – fixation
59. During the rainy season ground surface become slippery due to:-  
 (1) Fungi (2) Blue green algae (3) Bryophytes (4) Slime molds
60. Photosynthesis of Blue green algae is:-  
 (1) Oxygenic (2) Non oxygenic  
 (3) Both oxygenic and non oxygenic (4) None
61. Which of the following is the only group of organisms capable of using inorganic compounds as source of energy?  
 (1) Fungi (2) Chemo autotrophy  
 (3) Both the above (4) None of the above

62. Link between prokaryotes and multicellular eukaryotes :-  
 (1) Cyanobacteria (2) Protista (3) Fungi (4) Plants
63. Which structure of prokaryotes is analogous to lysosome?  
 (1) Mesosome (2) Gonophores (3) Periplasmic space (4) Perinuclear space
64. Which of the following performs respiration with the help of plasma membrane ?  
 (1) Bacteria (2) Algae (3) Fungi (4) All the above
65. Richest source of bacteria is :-  
 (1) Air (2) Soil (3) Water (4) Milk
66. The most primitive monerans are :-  
 (1) Archaeobacteria (2) Eubacteria  
 (3) Filamentous bacteria (4) Cyanobacteria
67. Organisms which obtain energy by the oxidation of reduced inorganic compounds are called  
 (1) Photo autotrophs (2) Chemo autotrophs (3) Saprozoic (4) Heterotrophs
68. Which bacteria are utilized in Gobar gas plant ?  
 (1) Methanogens (2) Nitrifying bacteria  
 (3) Ammonifying bacteria (4) Denitrifying bacteria
69. Plasmid are  
 (1) Virus  
 (2) New types of micro organism  
 (3) Extra chromosomal genetic material of bacteria  
 (4) Essential bacterial genetic materials
70. A free living aerobic bacteria capable of fixing nitrogen is  
 (1) Azotobacter (2) Rhizobium  
 (3) Clostridium botulinum (4) Streptomyces
71. Wine turns sour because of :-  
 (1) Heat (2) Aerobic bacteria (3) Anaerobic bacteria (4) Exposure to the light
72. Which one of the following fixes CO<sub>2</sub> in to carbohydrates?  
 (1) Rhizobium (2) E.coli (3) Bacillus (4) Rhodospirillum
73. Antibiotics are mostly obtained from :-  
 (1) Bacteria (2) Viruses (3) Fungi (4) Angiosperm
74. The main difference between gram  $\oplus$  and gram  $\ominus$  resides in the composition of :-  
 (1) Cilia (2) Cell-wall (3) Cell-membrane (4) Cytoplasm

75. Free living nitrogen-fixing bacteria are found in :-  
 (1) Air (2) Soil (3) Root nodules (4) None of above
76. Cell membrane of bacteria is made up of -  
 (1) Cellulose and lipid (2) Chitin  
 (3) Lipid + Protein (4) Protein and Cellulose
77. Which organism is most useful for soil fertility?  
 (1) Bryophyte (2) Fungi (3) Bacteria (4) Bacteriophage
78. Bacterial flagella are made of :-  
 (1) Carbohydrate (2) Lipid (3) Protein (4) Amide
79. The mode of the nutrition of bacteria is usually :-  
 (1) Photo autotrophic (2) Chemo autotrophic  
 (3) Heterotrophic and autotrophic (4) None
80. Fertility of soil is increased by :-  
 (1) Nitrogen – fixing bacteria (2) Denitrifying bacteria  
 (3) Plasma lemma (4) Cell membrane
81. Plant pathogenic bacteria are :-  
 (1) Gram  $\oplus$  (2) Gram  $\ominus$  (3) Both (4) None
82. Souring of milk is due to -  
 (1) Aerobic bacteria (2) Anaerobic bacteria (3) Both (4) None
83. At which place bacteria are not found  
 (1) Soil (2) Ice (3) Sea (4) Distilled water

### KINGDOM-PROTISTA

84. “Golden Algae” is the common name of algae belonging to :-  
 (1) Chrysophyta (2) Pyrrophyta (3) Euglenophyta (4) Cyanophyta
85. Armored cell wall and biflagellate cells are characteristic of :-  
 (1) Chrysophyta (2) Pyrrophyta (3) Euglenophyta (4) Cyanophyta
86. Oils and Leucosine are characteristic stored food in :-  
 (1) Dinoflagellates (2) Euglenoids (3) Diatoms (4) None
87. Armored algae are :-  
 (1) Dinoflagellates (2) Euglenoids (3) Red algae (4) Cyanobacteria
88. The diatoms do not easily decay like most of the other algae because :-  
 (1) They have water proof cells (2) Their walls are mucilaginous



- (3) They have highly siliceous wall                      (4) They are non living
89. "Keiselgurh" a heat resistant material is obtained from :-  
 (1) Red Algae                      (2) Brown Algae                      (3) Diatoms                      (4) Fungi
90. The diatomaceous earth is used to insulate boilers and steam pipes because :-  
 (1) The wall of diatoms is deposited with calcium  
 (2) The diatomaceous earth is cheap  
 (3) It is a good conductor of heat  
 (4) The wall of diatoms is made of silica
91. Shell of diatoms is made up of :-  
 (1) Silica                      (2) Calcium carbonate                      (3) Keratin                      (4) Calcium oxalate
92. "Diatomite" (Keiselgurh) is obtained from :-  
 (1) Myxophyceae                      (2) Chrysophyta                      (3) Phaeophyceae                      (4) Rhodophyceae
93. Most characteristic feature of diatoms is :  
 (1) Pigments                      (2) Stored food  
 (3) Cell wall                      (4) Non oxygenic photosynthesis
94. Taxonomically the most controversial group is :-  
 (1) Dinoflagellates                      (2) Diatoms                      (3) Euglenoids                      (4) Prokaryote
95. Decomposer protists are :-  
 (1) Diatoms                      (2) Dinoflagellates                      (3) Slime moulds                      (4) Euglenoid
96. The dead remains of diatoms are known as :-  
 (1) Coenobium                      (2) Sporangia                      (3) Kieselgurh                      (4) Sporocarp
97. Taxonomists feel difficulty in classification of :  
 (1) Prokaryotes                      (2) Unicellular eucaryotes  
 (3) Plants                      (4) Animals
98. Which of the following unicellular algae reproduce by auxospores, have silicified cell wall and store food in the form of fats, leucosine and chrysolaminarin ?  
 (1) Diatoms                      (2) Red algae                      (3) Dinoflagellates                      (4) Euglenoids
99. Paramylum is stored food of :-  
 (1) Dinoflagellate                      (2) Euglenoid                      (3) Diatom                      (4) Slime mould
100. The most efficient locomotion in protists is through :-  
 (1) Pseudopodia                      (2) Flagella                      (3) Cilia                      (4) Tentacles
101. Organism of which kingdom feed like animals and perform photosynthesis like plants :-  
 (1) Monera                      (2) Protista                      (3) Mycota                      (4) Animalia



102. "Fire algae" belongs to group :-  
 (1) Pyrrophyta (2) Chrysophyta (3) Euglenophyta (4) Rhodophyta
103. Slime mould is known as naked fungi.  
 (1) Cell membrane absent (2) Cell wall absent  
 (3) Cell wall and cell membrane absent (4) Never naked
104. Dinoflagellates are called fire algae due to which character :-  
 (1) They appear like fire due to pigments (2) They produce fire due to friction  
 (3) They occur on burnt places (4) They show bioluminescence
105. Toxins (Saxitoxins) secreted by some dinoflagellates enter the body of human beings through food chain and result in :-  
 (1) Madness (2) Paralysis (3) Syphilis (4) Plague
106. Stored food of Diatoms :-  
 (1) Leucosin (2) Starch (3) Floridian starch (4) Glycogen
107. Dead remains of Diatoms at sea bed are called:-  
 (1) Keiselgurh (2) Prustule (3) Coral reefs (4) None
108. Protists should be better termed as :-  
 (1) Acellular (2) Cellular (3) Multicellular (4) Coenocytic
109. Which of the following eukaryotes are devoid of histone proteins ?  
 (1) Golden algae (2) Euglenoids (3) Fire algae (4) Slime Mould
110. Diatoms perform which type of movement in water:-  
 (1) Swimming (2) Ampeboid (3) Floating (4) Ciliary
111. Protest used for the construction of sound proof rooms, is-  
 (1) Dinoflagellate (2) Diatoms (3) Euglenoids (4) Zoo flagellates
112. Auxospores are formed by -  
 (1) Diatoms (2) Euglenoids (3) Dinoflagelates (4) bacteria
113. Protests which are diploid reproduce sexually by the process of  
 (1) Zygotic meiosis (3) Binary fission  
 (2) Cyst formation (4) Game tic meiosis
114. 'Red tides' are produced by -  
 (1) Red algae (2) Dinoflafellates (3) Diatoms (4) Brown algae

## KINGDOM-FUNGI

115. Fungal hyphae penetrate hard cell walls of their hosts with the help of:  
 (1) Enzymes (2) Hormones (3) Sharp tips (4) Sugar Exudates
116. A fungus completing its life cycle on a single host is known as:-  
 (1) Dikaryotic (2) Autoecious (3) Heterecious (4) Heterothallic
117. Which of the following secretes toxins during storage conditions of crop plants ?  
 (1) Aspergillus (2) Penicillium (3) Fusarium (4) Colletotrichum
118. Which of the following characters indicate similarity between fungi and animals ?  
 (1) Heterotrophic nutrition (2) Type of stored food  
 (3) Presence of chitin (4) All the above
119. The sac fungi belongs to :  
 (1) Ascomycetes (2) Basidiomycetes (3) Phycomycetes (4) Deuteromycetes
120. Neurospora, which is popularly known as Drosophilla of plant kingdom, belongs to :-  
 (1) Phycomycetes (2) Ascomycetes (3) Basidiomycetes (4) Deuteromycetes
121. The basidiomycetes includes:-  
 (1) Rusts (2) Smuts (3) Mushrooms (4) All the above
122. Which of the following causes wheat rust disease?  
 (1) A red Alga (2) A green Alga (3) A fungus (4) Mycoplasma
123. Sexual cycle is absent in:-  
 (1) Phycomycetes (2) Deuteromycetes (3) Ascomycetes (4) Basidiomycetes
124. *Penicillium roquefortii* and *P. camemberti* are used in the preparation of cheese. These fungi belong to class:-  
 (1) Zygomycetes (2) Oomycetes (3) Deuteromycetes (4) Ascomycetes
125. The fungi are :  
 (1) Autotrophic (2) Holotrophic (3) Chemotrophic (4) Heterotrophic
126. All fungi are :-  
 (1) With chlorophyll (2) Oomycetes (3) With carotene (4) Ascomycetes
127. In class phycomycetes the mycelium is :  
 (1) Coenocytic and aseptate (2) Coenocytic and septate  
 (3) Uninucleate and aseptate (4) Multinucleate and septate

128. Coenocytic mycelium is found in:-  
 (1) Rhizopus (2) Mucor (3) Penicillium (4) Both 1 and 2
129. Stored food material of fungi:-  
 (1) Cellulose (2) Starch  
 (3) Glycogen and starch (4) Glycogen and oil
130. The cell wall of Fungi is composed of:-  
 (1) Chitin (2) Cellulose (3) Mucopeptide (4) Pseudomurein
131. The chief characteristic of class Ascomycetes is:  
 (1) Formation of spores (2) Hyphae  
 (3) Formation of ascospores (4) Formation of zoospores
132. Which is commonly called "Drosophilla of plant kingdom"?  
 (1) Morchella (2) Neurospora (3) Rhizopus (4) Claviceps
133. Normally how many ascospores are formed in an ascus:-  
 (1) 4 - ascospores (2) 8 – ascospores (3) 16 ascospores (4) 24 ascospores
134. Edible part in mushrooms is :-  
 (1) Basidiospores (2) Mycelium (3) Pseudomycelium (4) Complete basidiocarp
135. Which scientist did work on rust disease?  
 (1) Lederberg and tatum (2) K.C. Mehata  
 (3) Blakeslee (4) Wolman
136. A. Hemming isolated penicillin from:-  
 (1) P. chrysogenum (2) P. notatum (3) Aspergillus flavus (4) A. niger
137. Cell wall of Chitin is found in :-  
 (1) Fungi (2) Bryophyta (3) Bacteria (4) Angiosperms
138. The fungus without mycelium is:-  
 (1) Phytophthora (2) Rhizopus (3) Saccharomyces (4) Microsporum
139. Indian scientist who worked on Puccinia :-  
 (1) J.C. Luthra (2) K.C. Mehta (3) C.V. Subramanian (4) KG. Mukherji
140. Pseudomycelium occurs in :-  
 (1) Mushroom (2) Mucor (3) Bread mold (4) Yeast
141. Occurrence of dikaryotic mycelium mainly is the characteristic of :-  
 (1) Myxomycetes (2) Phycomycetes (3) Deuteromycetes (4) Basidiomycetes

142. Deuteromycetes are called 'Imperfect fungi' as:  
 (1) They have no cell wall (2) No mycelium  
 (3) No sexual reproduction (4) No asexual reproduction
143. Fungi which requires two different hosts to complete it's life cycle is called as :-  
 (1) Homothallic (2) Heterothallic (3) Heteroecious (4) Autoecious
144. Aceiospores of Puccinia are produced on :-  
 (1) Berberis leaves (2) Wheat leaves (3) Mustard leaves (4) Raphanus leaves
145. Absorptive mode of nutrition is found in :-  
 (1) Algae (2) Fungi (3) Bryophytes (4) Euglenoids
146. Which of the following is called 'toad stools'?  
 (1) All mushrooms (2) Edible mushrooms  
 (3) Poisonous mushrooms (4) None
147. Yeast grows more quickly in :-  
 (1) Salt water (2) Sugar solution  
 (3) Double distilled water (4) Marine water
148. Which of the following is a form class?  
 (1) Deuteromycetes (2) Basidiomycetes (3) Rhodophyceae (4) Euglenophyceae
149. Ergot fungi belongs to:-  
 (1) Ascomycetes (2) Basidiomycetes (3) Phycomycetes (4) Deuteromycetes
150. Professor K. C. Mehta is known for his contribution in:-  
 (1) Bryology (2) Plant physiology (3) Virology (4) Plant pathology
151. Fungi are ecologically important because:  
 (1) They yield antibiotics (2) They are used in genetic studies  
 (3) They function as decomposers (4) All the above
152. Alexander Flemming discovered penicillin in 1928 while working with :-  
 (1) Streptomyces (2) Bacteria (Staphylococcus)  
 (3) Penicillium notatum (4) P. chrysogenutn
153. In fungi lump of hyphae is referred to as:-  
 (1) Thallus (2) Haustorium (3) Mycelium (4) Archegonia
154. Plant group which shows Heterotrophic mode of nutrition is :-  
 (1) Algae (2) Fungi (3) Bryophytes (4) Pteridophytes
155. Sexual reproduction is absent in:-  
 (1) Phycomycetes (2) Deuteromycetes (3) Zygomycetes (4) Basidiomycetes

156. Non-septate mycelium occurs in :-  
 (1) Phycomycetes (2) Ascomycetes (3) Basidiomycetes (4) Deuteromycetes
157. Basidiocarp is present in:-  
 (1) Basidiomycetes (2) Ascomycetes (3) Deuteromycetes (4) Phycomycetes
158. All fungi are:  
 (1) Symbionts (2) Parasites (3) Saprophytes (4) Heterotrophy
159. Aspergillosis is caused by:-  
 (1) Virus (2) Bacteria (3) Fungi (4) Mycoplasma

### KINGDOM – PLANTAE - ALGAE

160. Which algal groups have similarity in pigment composition ?  
 (1) Red algae and brown algae (2) Green algae and blue green algae  
 (3) Kelps and diatoms (4) Diatoms and euglenoids
161. Autotrophic thallophytes are called as:-  
 (1) Fungi (2) Lichens (3) Algae (4) Microbes
162. Parasitic algae is:  
 (1) Laminaria (2) Fucus (3) Sargassum (4) Cephaleuros
163. "Red rust of tea" is caused by parasitic:-  
 (1) Algae (2) Fungi (3) Bacteria (4) Bryophyta
164. No zoospore formation has been observed in the algal members belonging to:-  
 (1) Chlorophyceae (2) Brown algae (3) Phaeophyceae (4) Cyanophyceae
165. Which pigment is found in phaeophyceae?  
 (1) Chi. a, c and fucoxanthin (2) Chi. a, d and violaxanthin  
 (3)  $\beta$  Carotene and phycocyanin (4) None of these
166. Food reserve in Rhodophyta is:-  
 (1) Floridean starch (2) Mannitol (3) Leucosin (4) All of the above
167. Zygotic meiosis is characteristic of :  
 (1) Procaryotes (2) Thallophyta (3) Bryophyta (4) Spermatophyta
168. Photosynthetic pigments common to all algae :  
 (1) Chlorophyll 'b' and carotene (2) Chlorophyll 'a' and 'b'  
 (3) Chlorophyll 'a' and carotene (4) Chlorophyll and xanthophyll
169. Chlorella, a very good source of protein, belongs to:-  
 (1) Chlorophyta (2) Rhodophyta (3) Pyrrophyta (4) Phaeophyta

170. Deepest algae in sea are :-  
 (1) Red Algae (2) Brown Algae (3) Green Algae (4) Golden Algae
171. Phycobilins are characteristic pigments of:  
 (1) Rhodophyta and phaeophyta (2) Rhodophyta and Pyrophyta  
 (3) Pyrophyta and Cyanophyta (4) Rhodophyta and Cyanophyta
172. Which of the following plant groups have similar pigment composition ?  
 (1) Rhodophyta and phaeophyta (2) Chlorophyta and phaeophyta  
 (3) Rhodophyta and cyanophyta (4) All of the above
173. Globule and nucule are sex organs of :-  
 (1) Chara (2) Chlorella (3) Laminaria (4) Polysiphonia
174. Flagellated cells are absent in:  
 (1) Red algae (2) Blue green algae (3) Higher seed plants (4) All the above
175. Green algae are considered as ancestors of higher plants due to their resemblance with higher plants in:-  
 (1) Pigments (2) Cell wall (3) Stored food (4) All the above
176. Pyrenoids are characteristically found in algae. A pyrenoid consists of :-  
 (1) Core of starch surrounded by protein (2) Core of protein surrounded by starch  
 (3) Core of fatty acids covered by starch (4) Nucleic acid and protein
177. In chlorophyta the mode of sexual reproduction is :  
 (1) Isogamy (2) Anisogamy  
 (3) Oogamy (4) Isogamy, Anisogamy and oogamy
178. Unique character of Thallophyta is :  
 (1) Thalloid body (2) Absence of vascular tissue  
 (3) Zygotic meiosis (4) All the above
179. In thallophyta main plant body is:-  
 (1) Gametophyte (2) Sporophyte  
 (3) Diploid plant body (4) Leafy plant body
180. Sexual reproduction in Thallophyta takes place by:-  
 (1) Isogamy (2) Anisogamy (3) Oogamy (4) Any of the above
181. Most advanced group of Algae is:-  
 (1) Myxophyta (2) Chlorophyta (3) Brown algae (4) Phaeophyta
182. "Agar-agar" is obtained from:-  
 (1) Green Algae (2) Red Algae (3) Brown Algae (4) Yellow green Algae

183. Motile stages are not found in life cycle of :  
 (1) Red Algae & green Algae (2) Red Algae & brown Algae  
 (3) Red Algae & blue green Algae (4) Green Algae & brown Algae
184. Embryo is not formed in thallophyta due to :-  
 (1) Zygotic meiosis (3) Sporangial meiosis  
 (2) Zygotic mitosis (4) Gametic meiosis
185. Oogonia of Thallophyta differs with archegonia of bryophyte :-  
 (1) Being multicellular (2) Being jacketed  
 (3) Being stalked (4) Being unicellular and jacket less
186. Which of the following of sexual reproduction ?  
 (1) Chlamydomonas (2) Ulothrix (3) Puccinia (4) Albugo
187. Cepheleuro, which causes "Red rust of tea" is a :-  
 (1) Red Algae (2) Brown Algae (3) Dinoflagellate (4) Green Algae
188. Volvox belongs to :  
 (1) Brown Algae (2) Red Algae (3) Golden Algae (4) Green Algae
189. Gametes are non-motile in:-  
 (1) Blue green Algae (2) Red Algae (3) Both 1 and 2 (4) Green Algae
190. Blue- green algae resembles more closely to:-  
 (1) Green Algae (2) Brown Algae  
 (3) Red Algae and bacteria (4) Slime molds
191. Which of the following statement is true for algae ?  
 (1) Algae have root, stem and leaves (2) Algae have true roots but lack leaves  
 (3) Algae have rhizoids and leaves (4) Body of algae is thallus
192. In which plant group reproductive organs are not enclosed in a layer of sterile cells?  
 (1) Pteridophyta (2) Thallophyta (3) Angiosperm (4) Gymnosperm
193. Classification of algae is mainly based on:-  
 (1) Reproductive organs (2) Structure of spores  
 (3) Pigments (4) Stored food
194. "Carrageenin" is obtained from:-  
 (1) Chondrus crispus (2) Laminaria (3) Gelidium (4) Macrocystis
195. Female sex organ of algae is called :-  
 (1) Carpel (2) Oogonium (3) Archegonia (4) Oosphere



196. Which of the following is not correctly matched ?  
 (1) Heterocyst =  $N_2$  - fixation structure of B.G.A.  
 (2) Hormogonia = Reproductive structure of B.G.A.  
 (3) Floridean starch = Stored food of brown algae  
 (4) Cyanophycean starch = Stored food of B.G.A.
197. Cilia & flagella are absent in life cycle of :-  
 (1) Red algae (2) Brown algae (3) Green algae (4) Red algae & B.G.A.
198. Which algae best explains the evolution of sexual reproduction ?  
 (1) Green algae (2) Red algae (3) Brown algae (4) B. G. Algae

### KINGDOM – PLANTAE - BRYOPHYTA

199. Embryo is present but true vasculature is absent in the group:-  
 (1) Cyanophyta (2) Tracheophyta (3) Bryophyta (4) Chlorophyta
200. The unique feature of Bryophytes compared to other green plant groups is that:-  
 (1) They produce spores (2) They lack vascular tissue  
 (3) They lack root (4) Their sporophyte is attached to gametophyte
201. In Bryophytes diploid number of chromosomes occur in:-  
 (1) Gametes (2) Spores (3) Spore mother cells (4) Nuclei of gametes
202. The group bryophyta includes :  
 (1) Liveiworts and ferns (2) Liveiworts and club moss  
 (3) Moss and ferns (4) Liveiworts and moss
203. A leafy non vascular plant with parasitic sporophytic generation should properly be classified in  
 (1) Thallophyta (2) Bryophyta (3) Pteridophyta (4) Spermatophyta
204. Bryophyta includes :  
 (1) Mosses (2) Club mosses (3) Horse tails (4) All the above
205. A leafy gametophyte plant with multicellular rhizoids and sporophyte differentiated in foot, seta and capsule should belong to :-  
 (1) Psilopsida (2) Hepaticopsida (3) Bryopsida (4) Lycopsidea
206. Bryophytes differ from thallophytes in having :-  
 (1) Embryo (2) Rhizoids  
 (3) Sterile jacket around sex organs (4) All the above
207. Spores do not form protonema but directly grow into flat branching thallus in :-  
 (1) Liverworts (2) Mosses (3) Ferns (4) Gymnosperms

208. In bryophyta, simplest sporophyte occur in :-  
 (1) Riccia (2) Marchantia (3) Funaria (4) Anthoceros
209. In which of the following bryophytes there are gemmae, the means of vegetative reproduction?  
 (1) Riccia (2) Marchantia (3) Sphagnum (4) Anthoceros
210. In Bryophytes what is absent:  
 (1) Embryo formation (2) Fertilization  
 (3) Motile gametes (4) True roots and vascular tissue
211. In bryophytes fertilization takes place:-  
 (1) At low temp. (2) In dry condition  
 (3) In presence of water (4) In above all situation
212. Which statement is true about bryophytes?  
 (1) They are non photosynthetic  
 (2) Zygote produces gametophyte on germination  
 (3) Spores form gametophyte plant on germination  
 (4) They have vascular tissues
213. Which bryophyte is of economic importance ?  
 (1) Funaria (2) Marchantia (3) Riccia (4) Sphagnum
214. Mosses are gregarious because they:  
 (1) Have vascular tissue (2) Have indirect germination of spores  
 (3) Have direct germination of spores (4) Have spore mother cells
215. Aquatic ancestry of bryophytes is evidenced by:  
 (1) Their green colour (2) Algae like protonema  
 (3) Many aquatic bryophytes (4) Regulated male gametes
216. Moss sporophyte is differentiated in:  
 (1) Stem & leaves (2) Root, stem and leaves  
 (3) Rhizoids, stem & leaves (4) None of these
217. Oblique septa are found in which part of moss :  
 (1) Rhizoids of sporophyte (2) Rhizoids of gametophyte  
 (3) Leaves (4) Stem
218. Leaves of Mosses and Ferns are :  
 (1) Analogous and homologous both (2) Analogous but not homologous  
 (3) Homologous but not analogous (4) None of the above
219. Which of the following plants are similar in requirement of water for fertilisation ?  
 (1) Bryophyta (2) Pteridophyta (3) Angiosperm (4) (1) and (2) both

220. The bryophyte which can absorb water upto 18 times of its weight :  
 (1) Anthoceros (2) Sphagnum (3) Riccia (4) Marchantia
221. In which of the following zygote further develops to form a diploid structure ?  
 (1) Thallophyta (2) Bryophyte (3) Algae (4) Fungi
222. Bryophytes are :-  
 (1) First successful land plant (2) Vascular cryptogames  
 (3) Non vascular cryptogames (4) Vascular embryophytes
223. Sex organ in bryophytes are :  
 (1) Unicellular and jacketed (2) Unicellular and non-jacketed  
 (3) Multicellular and jacketed (4) Multicellular and non jacketed
224. Fossilised fuel obtained from bog is:-  
 (1) Tar (2) Peat (3) Bio-gas (4) Petrol
225. Which structure produces the gamete bearing plant of moss?  
 (1) Spore (2) Bud (3) Protonema (4) Zygote
226. Bryophytes show an advancement over algae in:-  
 (1) Having multicellular sporophytic generation  
 (2) Having parasitic sporophyte  
 (3) Having zygotic meiosis  
 (4) None of the above
227. Which bryophyte is known as Peat moss?  
 (1) Riccia (2) Riella (3) Sphagnum (4) Marchantia
228. Leafy gametophyte occurs in:-  
 (1) Liver worts (2) Hom worts (3) Moss (4) Fern
229. Sporophyte with indefinite growth occurs in:-  
 (1) Liver worts (2) Hom worts (3) Mosses (4) Fern
230. Sphagnum may be used as a substitute of :  
 (1) Absorbent cotton (2) Non absorbent cotton  
 (3) Plastic (4) Polythene
231. Non vascularembryophyta are:-  
 (1) Thallophyta (2) Bryophyta (3) Pteridophyta (4) (1) and (2) both
232. The water conducting tissue in bryophyta is :-  
 (1) Parenchyma (2) Sclerenchyma (3) Trachieds (4) Sieve tubes

233. Bryophyta are not tall plants due to:-  
 (1) Absence of meristem (2) Absence of vascular tissues  
 (3) Presence of root system (4) All the above
234. The first cell of sporophytic generation in bryophyte is:-  
 (1) Spore (2) Spore mother cell (3) Zygote (4) Protonema
235. Structures for dispersal of spores in bryophyta are:-  
 (1) Elaters (2) Pseudoelaters (3) Peristomial teeth (4) All the above
236. Oblique septa in rhizoids are characteristic of :-  
 (1) Liverworts (2) Hornworts (3) Mosses (4) Ferns
237. In which bryophyte germination of spore is indirect:-  
 (1) Riccia (2) Rhizopus (3) Puccinia (4) Fun aria
238. Male gametes of bryophytes are :-  
 (1) Uniflagellate (2) Multiflagellate (3) Biflagellate (4) Triflagellate
239. Rhizoids of hepaticopsida and anthocerotopsida are:-  
 (1) Multicellular and branched (2) Unicellular and unbranched  
 (3) Unicellular and branched (4) Multicellular and unbranched
240. The vascular tissue is absent in :  
 (1) Algae, fungi and pteridophytes (2) Thallophytes and bryophytes  
 (3) Bryophytes and pteridophytes (4) Angiosperm and gymnosperm
241. The saprophyte of bryophyte is :  
 (1) Parasitic (2) Autotrophic  
 (3) Saprophytic (4) Semiparasitic or parasitic
242. Non vascular land plants are called:-  
 (1) Bryophytes (2) Pteridophytes (3) Fungi (4) Algae

### KINGDOM – PLANTAE - PTERIDOPHYTA

243. Vascular cryptogams or seed less vascular plants belongs to:-  
 (1) Bryophyte (2) Pteridophyta (3) Thallophyta (4)Spermatophyta
244. Seed habit first established in:  
 (1) Pteridophytes (2) Gymnosperms (3) Angiosperms (4) None of the above
245. Most conspicuous alternation of generation occurs is:-  
 (1) Thallophyta (2) Bryophyta (3) Pteridophyta (4) Spermatophyte

246. Rhizoids containing saprophytic plants are characteristic of :-  
 (1) Bryopsida (2) Sphenopsida (3) Cycadophyta (4) Psilopsida
247. Which group includes green leaf microphyllous plants:  
 (1) Lycopsidea (2) Sphenipsida (3) Psilotopsida (4) Pteropsida
248. Roots first originated in :  
 (1) Algae (2) Fungi (3) Bryophyta (4) Pteridophyta
249. Pteridophyta differs from bryophyta in having:  
 (1) Vascular tissue (2) Archegonia  
 (3) Alternation of generations (4) Motile sperm
250. In pteridophyta, reduction division occurs when:  
 (1) Prothallus is formed (2) Spores are formed  
 (3) Sex organs are formed (4) Gametes are formed
251. The main plant body of Pteridophytes is:  
 (1) Sporophyte (2) Gametophyte (3) Haploid (4) None of the above
252. Cryptogamic plants are:  
 (1) Seedless (2) Embryo less (3) Leafless (4) Rootless
253. Adiantum is called "walking fern" due to :  
 (1) Power of locomotion (2) Vegetative reproduction  
 (3) Motile antherozoites (4) All the above
254. Plants having vascular tissues but lacking seeds are :  
 (1) Bryophyte (2) Pteridophyta (3) Gymnosperms (4) Angiosperms
255. Heterospory occurs in :-  
 (1) Selaginella (2) Pteridium (3) Funaria (4) Riccia
256. Sporangia are found in fruiting structures called sporocarps in aquatic ferns, which of the following is aquatic fern :-  
 (1) Azolla (2) Selaginella (3) Pteridium (4) Equisetum
257. The antherozoids of fern are :  
 (1) Uniflagellate (2) Biflagellate (3) Quadriflagellate (4) Multiflagellate
258. In pteridophytes the spores germinate to form:  
 (1) Protonema (2) Prothallus (3) Sporophyte (4) Archegonium
259. Aquatic fern which supports the growth of blue green algae, Anabaena, and used to increase the yield of paddy crop is :-  
 (1) Salvinia (2) Marsilea (3) Riccia (4) Azolla

260. Most distinct type of alternation of generations is demonstrated by :-  
 (1) Angiosperms (2) Ferns (3) Gymnosperms (4) Bryophytes
261. Presence of motile stage in life cycle & requirement of water as a medium to complete life cycle is diagnostic characters of :-  
 (1) Thallophyta (2) Bryophyta (3) Pteridophyta (4) Cryptogams
262. Evolution of seed habit first started in :-  
 (1) Selaginella like ancestral pteridophytes (2) Psilotum like ancestral pteridophytes  
 (3) Gymnosperms (4) Mosses
263. Young fern leaves and rhizome are protected by :-  
 (1) Root cap (2) Ramenta (3) Roots (4) Leaf bases
264. In ferns, the permanent roots are :  
 (1) Tap root (2) Adventitious roots (3) Tuberous roots (4) Rhizome
265. Independent alternation of generation is found in-  
 (1) Pteridophyta (2) Spermatophyte (3) Thallophyta (4) Bryophyta
266. Stem distinctly differentiated in to node and internode in:-  
 (1) Psilopsida (2) Lycopsida (3) Sphenopsida (4) Pteropsida
267. Spore producing part of pteridophytes is:  
 (1) Sporangia of gametophytes (2) Capsule of sporophytes  
 (3) Sporangia of sporophytes (4) Capsule of gametophytes
268. In pteridophytes, reduction division takes place in :  
 (1) Zygote (2) Spore mother cells (3) Gametangia (4) Prothallus

### KINGDOM – PLANTAE - GYMNOSPERM

269. Most advanced Gymnosperm belongs to:-  
 (1) Cycadales (2) Coniferales (3) Gnetales (4) Cycadofillicales
270. Which of the following is called father of forest?  
 (1) Pinus (2) Banyan (3) Sequoia (4) Cedrus
271. All Gymnosperms are:-  
 (1) Heterosporous (2) Arborescent/Woody  
 (3) Seed plants (4) All the above
272. Gymnosperm plants lack :-  
 (1) Vessels (2) Fruits (3) Companion cells (4) All the above

273. Gymnosperm plants do not produce fruits because they do not have:  
 (1) ovary (2) gametes (3) fertilization (4) None of these
274. Owle is morphologically equivalent to:  
 (1) Megaspore (2) Megasporangium (3) Microspore (4) Megasporophyll
275. Cones in Gymnosperm plants are:  
 (1) Bisexual (2) Unisexual (3) Sterile (4) Any of the above
276. Double fertilization and triple fusion are characteristic of:-  
 (1) Spermatophyte (2) Gymnosperms (3) Pteridophyta (4) Angiosperms
277. In which of the following characters, the angiosperms resemble gymnosperms ?  
 (1) Presence of ovule (2) Absence of endosperm  
 (3) Presence of vessels (4) Mode of fertilisation by zoodiosiphonogamy
278. Which character most differentiates angiosperms from gymnosperms ?  
 (1) Triploid endosperm (2) Vessels in xylem  
 (3) Seeds enclosed in fruits (4) Attractive petels
279. Gametophyte embeded in sporophyte in:  
 (1) Bryophyta (2) Pteridophyta (3) Cryptogams (4) Spermatophyta
280. Antheridia and archegonia are absent in :-  
 (1) Bryophyta (2) Pteridophyta (3) Gymnosperms (4) Angiosperms
281. Ephedrine is obtained by :-  
 (1) Ephedra (2) Gnetum (3) Pinus (4) Cycas
282. Resin turpentine is obtained from:-  
 (1) Pinus (2) Adiantum (3) Club mosses (4) Sequoia
283. Which group is largest in gymnosperms ?  
 (1) Cycadales (2) Gnetales (3) Coniferales (4) Cordaitales
284. Spore bearing tracheophytes:  
 (1) Pteridophyta (2) Gymnosperms (3) Angiosperms (4) All the above
285. Which of the following Gymnospermic orders resembles with angiosperms ?  
 (1) Cycadales (2) Coniferales (3) Gnetales (4) Ginkgoales
286. Living fossil:  
 (1) Cycas (2) Ginkgo (3) Psilotum (4) All the above
287. Sequoia belongs to:  
 (1) Cycadofillicales (2) Gnetales (3) Conifer ales (4) Divots



288. Which of the following are absent in group gymnosperm?  
 (1) Trees (2) Shrubs (3) Liana (4) Herbs
289. Which plant group is exclusively perennial ?  
 (1) Divots (2) Ferns (3) Gymnosperms (4) Monocots
290. In Ginkgo, male gametes are :  
 (1) Motile (2) Non-motile (3) Amoeboid (4) Absent
291. Male gamete of Cycas is largest in plant kingdom, is :-  
 (1) Non motile (2) Biflagellate (3) Multiciliate (4) Uniflagellate
292. The mode of pollination in gymnosperme is :-  
 (1) Anemophily (2) Entomophily (3) Hydrophily (4) Any of the above
293. Which of the following order of gymnosperme is totally become extinct ?  
 (1) Cycadales (2) Ginkgoales (3) Gnetales (4) Cycadofilicales
294. Which of the following remained unchanged for last many million years ?  
 (1) Pinus (2) Rice (3) Cedrus (4) Ginkgo
295. Life cycle of gymnosperm is :-  
 (1) Haplontic (2) Haplodiplontic (3) Diplomatic (4) Diplohaplontic
296. Which of the following is commonly known as "Chilgoza pine" ?  
 (1) Pinus roxburghii (2) P. strobes (3) P. gerardiana (4) P. sylvestris
297. The gymnosperm resembles with angiosperm in having:-  
 (1) Ciliated sperms (2) Presence of ovary  
 (3) Presence of seed (4) Presence of fruit
298. In Cycas the micro sporangia are born on which side of microsporophyll :-  
 (1) Adaxial (2) Abaxial (3) Lateral (4) Terminal
299. Vessels and companion cells are found in :-  
 (1) Pteridophyta (2) Gnetum (3) Ephedra (4) Angiosperm
300. Fruits are not formed in gymnosperm because :  
 (1) Fertilization is absent (2) Pollination is absent  
 (3) Seeds are not formed (4) Ovary is absent
301. Which one have maximum power of adaptation?  
 (1) Bryophyta (2) Pteridophyta (3) Gymnosperm (4) Angiosperm

302. Gymnosperms differ from pteridophytes in having  
 (1) Presence of tracheids (2) Presence of embryo  
 (3) Presence of owle (4) Campanian cell
303. Most gymnosperms have :-  
 (1) Both archeonia and antheridia (2) Antheridia but no archeonia  
 (3) Archeonia but no antheridia (4) No antheridia or archeonia
304. The "endosperm" of a gymnosperm represent :  
 (1) Gametophyte tissue (2) Spofophytic tissue  
 (3) Tissue formed by double fertilization (4) Polyploidy tissue
305. Vessels occur in the following gymnosperm plant  
 (1) Ginkgo (2) Taxus (3) Gnetum (4) All the above
306. In gymnosperm endosperm is :-  
 (1) Triploid (2) Diploid (3) Haploid (4) Tetraploid
307. Which of the following is not heterosporous ?  
 (1) Selaginella (2) Pinus (3) Pteridium (4) Cycas
308. Multiciliate male gametes are found in :-  
 (1) Pinus (2) Cycas (3) Gnetum (4) Mango
309. Which of the following plant form seed and have pollen tube?  
 (1) Angiosperm (2) Pteridophytes (3) Gymnosperm (4) Siphonogamous plants
310. Modern day (Advanced) plants are:-  
 (1) Monocots (2) Dicots (3) Gnetales (4) Ferns
311. Which group of plants is exclusively arbores cent (woody)?  
 (1) Pteridophyta (2) Dicots (3) Gymnosperms (4) Monocots

### ANSWER KEY

### EXERCISE-I (Concept Question)

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

43.	(3)	44.	(2)	45.	(1)	46.	(3)	47.	(2)	48.	(2)	49.	(3)
50.	(2)	51.	(4)	52.	(1)	53.	(3)	54.	(1)	55.	(1)	56.	(2)
57.	(2)	58.	(3)	59.	(2)	60.	(1)	61.	(2)	62.	(2)	63.	(3)
64.	(1)	65.	(2)	66.	(1)	67.	(2)	68.	(1)	69.	(3)	70.	(1)
71.	(2)	72.	(4)	73.	(1)	74.	(2)	75.	(2)	76.	(3)	77.	(3)
78.	(3)	79.	(3)	80.	(1)	81.	(3)	82.	(2)	83.	(4)	84.	(1)
85.	(2)	86.	(3)	87.	(1)	88.	(3)	89.	(3)	90.	(4)	91.	(1)
92.	(2)	93.	(3)	94.	(3)	95.	(3)	96.	(3)	97.	(2)	98.	(1)
99.	(2)	100.	(3)	101.	(2)	102.	(1)	103.	(2)	104.	(4)	105.	(2)
106.	(1)	107.	(1)	108.	(1)	109.	(3)	110.	(3)	111.	(2)	112.	(1)
113.	(4)	114.	(2)	115.	(1)	116.	(2)	117.	(1)	118.	(4)	119.	(1)
120.	(2)	121.	(4)	122.	(3)	123.	(2)	124.	(4)	125.	(4)	126.	(2)
127.	(1)	128.	(4)	129.	(4)	130.	(1)	131.	(3)	132.	(2)	133.	(2)
134.	(4)	135.	(2)	136.	(2)	137.	(1)	138.	(3)	139.	(2)	140.	(4)
141.	(4)	142.	(3)	143.	(3)	144.	(1)	145.	(2)	146.	(3)	147.	(2)
148.	(1)	149.	(1)	150.	(4)	151.	(3)	152.	(2)	153.	(3)	154.	(2)
155.	(2)	156.	(1)	157.	(1)	158.	(4)	159.	(3)	160.	(3)	161.	(3)
162.	(4)	163.	(1)	164.	(4)	165.	(1)	166.	(1)	167.	(2)	168.	(3)
169.	(1)	170.	(1)	171.	(4)	172.	(3)	173.	(1)	174.	(4)	175.	(4)
176.	(2)	177.	(4)	178.	(3)	179.	(1)	180.	(4)	181.	(2)	182.	(2)
183.	(3)	184.	(1)	185.	(4)	186.	(1)	187.	(4)	188.	(4)	189.	(2)
190.	(3)	191.	(4)	192.	(2)	193.	(3)	194.	(1)	195.	(2)	196.	(3)
197.	(4)	198.	(1)	199.	(3)	200.	(4)	201.	(3)	202.	(4)	203.	(2)
204.	(1)	205.	(3)	206.	(4)	207.	(1)	208.	(1)	209.	(2)	210.	(4)
211.	(3)	212.	(3)	213.	(4)	214.	(2)	215.	(4)	216.	(4)	217.	(2)
218.	(2)	219.	(4)	220.	(2)	221.	(2)	222.	(3)	223.	(3)	224.	(2)
225.	(2)	226.	(1)	227.	(3)	228.	(3)	229.	(2)	230.	(1)	231.	(2)
232.	(1)	233.	(2)	234.	(3)	235.	(4)	236.	(3)	237.	(4)	238.	(3)
239.	(2)	240.	(2)	241.	(4)	242.	(1)	243.	(2)	244.	(2)	245.	(3)
246.	(4)	247.	(1)	248.	(4)	249.	(1)	250.	(2)	251.	(1)	252.	(1)
253.	(2)	254.	(2)	255.	(1)	256.	(1)	257.	(4)	258.	(2)	259.	(4)
260.	(2)	261.	(4)	262.	(1)	263.	(2)	264.	(2)	265.	(1)	266.	(3)
267.	(3)	268.	(2)	269.	(3)	270.	(3)	271.	(4)	272.	(4)	273.	(1)
274.	(2)	275.	(2)	276.	(4)	277.	(1)	278.	(3)	279.	(4)	280.	(4)
281.	(1)	282.	(1)	283.	(3)	284.	(4)	285.	(3)	286.	(4)	287.	(3)
288.	(4)	289.	(3)	290.	(3)	291.	(3)	292.	(1)	293.	(4)	294.	(4)
295.	(3)	296.	(3)	297.	(3)	298.	(2)	299.	(4)	300.	(4)	301.	(4)
302.	(3)	303.	(3)	304.	(1)	305.	(3)	306.	(3)	307.	(3)	308.	(2)
309.	(4)	310.	(1)	311.	(3)								