

KENYA MARU

## INTRODUCTION TO THE PRINCIPLE OF CLASSIFICATION

1. Evidence from paleontology (study of fossil) shows that the complex plants are derived from (a) complex advanced type (b) lower unicellular type (c) simple unicellular type (d) multicellular type.
2. An evolutionary tree consists of the primitive organisms occupying the positions \_\_\_\_\_ (a) near the crown (b) near the base of the tree (c) at the first branch of the tree (d) in-between the crown
3. An evolutionary tree is a tree with \_\_\_\_\_ (a) branches (b) stems (c) base (d) steps
4. On the evolutionary tree the advanced organisms are found on the branches near \_\_\_\_\_ (a) the base (b) the crown (c) the first branch (d) the root
5. In order to appreciate the diversity in plants, the study of plant is (a) rationalized (b) taxonomized (c) systematized (d) complemented
6. The following are the complementary methods of classifying plants except for: (a) similarity in their morphological features (b) degree of occurrence in a particular locality (c) similarity in the physiological features (d) evolutionary or phylogenetic relationship.
7. The sum total of all features common to a plant group is considered as (a) diagnostic feature (b) evolutionary feature (c) physiological feature (d) characteristic feature
8. A classification which considered all the important criteria for putting plants into groups is termed (a) selected criteria (b) artificial classification (c) natural classification (d) possible criteria
9. When few criteria are used in plant classification this is called (a) selected criteria (b) artificial classification (c) binomial classification (d) fewer classification
10. A collection of related species form \_\_\_\_\_ (a) family (b) order (c) class (d) genus.
11. The binomial system was devised by \_\_\_\_\_ (a) Carl William (b) Carl L. aens (c) Carl Linneus (d) Carl Linnæus
12. The binomial system was popularized in (a) 170-1772 (b) 17077 - 1777 (c) 1707 - 1778 (d) 1708-1777

13. Which of the following is equivalent to the surname? (a) species name  
specific epithet (b) genus name (c) family name
14. The binomial system begins with the generic name and ended with  
personal name (b) family name (c) proper name (d) specific name
15. The common water yam is designated as (a) Dioscorea alata (b) Dioscorea  
cayenensis (c) Dioscorea rotundata (d) dioscorea bulbifera
16. The Dioscorea rotundata is commonly pronounced as (a) water yam (b) yam  
yam (c) three leaved yam (d) Chinese yam
17. Which of the following complement the three leaves yam? (a) dioscorea esculenta  
(b) dioscorea dumetorum (c) dioscorea cayenensis (d) dioscorea bulbifera
18. Motility and heterotrophy are the characteristics for placing organism in the  
\_\_\_\_\_ (a) plant kingdom (b) protozoa kingdom (c) animal kingdom (d)  
mycota kingdom
19. Which of the following organism showing characteristic which suggest  
resemblance to spirogyra? (a) fungi (b) chlamydomonas (c) euglena (d) bacillus
20. The five kingdom system of classification was popularized by \_\_\_\_\_  
Whittaker and Whittaker (b) Whittaker and Whittaker (c) Whittaker and Whittaker  
(d) Whittaker and Whittaker
21. The non-green, non-motile absorptive heterotrophs are the group of organisms  
which belongs to the kingdom (a) plantae (b) Animalia (c) protista (d) fungi
22. The bacteria and the blue-green algae are considered as (a) complex prokaryotes  
(b) simple eukaryotes (c) complex protist (d) simple prokaryotes

### PLANT GROUPS AND THEIR CHARACTERISTIC FEATURES

#### Division I: Thallophytes

23. The plant body in thallophytes is referred to as (a) unicellular (b) filamentous  
thallus (c) colonial
24. Which of these is a filamentous branched thallus (a) Cladophora (b) Agaricus  
Chlamydomonas (d) Agaricus
25. Agaricus is an example of \_\_\_\_\_ form of thallophyte (a)  
pseudoparenchymatous (b) unicellular (c) filamentous (d) multicellular
26. The formation of sterile jacket is not necessary in which of the following  
groups (a) Bryophytes (b) Thallophytes (c) Spermatophyte (d) Pteridophytes

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27. Which of the following is a zooidogamous plant? (a) cycas (b) chlamydomonas (c) gymnosperm (d) angiosperm
28. In thallophytes the male gametangium is designated as antheridium while the female is pronounced as \_\_\_\_\_ (a) archegonium (b) oogonium (c) oogonium (d) oogamy
29. The only diploid condition that is figure out in thallophytes is recognized as (a) sporophyte (b) embryo (c) zygote (d) gametophyte
30. Which of the following plant undergoes the resting period after the formation of zygote (a) liverworts (b) fern (c) spirogyra (d) mosses
31. The following are recognized as modes of sexual reproduction in thallophyte except (a) Isogamy (b) Syngamy (c) Anisogamy (d) Conjugation
32. Alternation of generation is an essential process which is lacking in (a) Bryophytes (b) Pteridophytes (c) Spermatophytes (d) Thallophytes
33. Asexual reproduction in thallophytes is by (a) spore formation (b) Oogamy (c) repeated budding (d) repeated body division.
34. Which of the following is in haploid state? (a) spore (b) mitosis (c) zygote (d) seed

#### DIVISION II: Bryophytes

35. The first embryonic plants are enclosed in division. (a) pteridophytes (b) thallophytes (c) Bryophyte (d) spermatophytes
36. Which of the following is odd (a) Liver worth (b) chlamydomonas (c) spirogyra (d) cladophora
37. Which of the following statements is correct (a) thallophytes are the first vascular plants (b) bryophytes are the first oogoniate plants (c) pteridophytes are the first embryonic plants (d) bryophytes are the first archegoniate plants
38. As unicellular gametangia is to thallophyte \_\_\_\_\_ is to bryophyte (a) intercellular (b) zooidogamy (c) multicellular gametangia (d) heterospory
39. In contrary to thallophyte, bryophyte possessed (a) oogomy (b) oogonium, (c) antheridium (d) archegonium
40. The vascular system in bryophyte is (a) conspicuous (b) well-developed (c) poorly developed (d) not conspicuous

41. Which of the following is a flask shaped structure (a) Gametophyte (b) sporophyte (c) oogonium (d) ~~archegonium~~
42. In similar to that of thallophytes bryophytes are characterized with the possession of \_\_\_\_ (a) Oogonium (b) Archegonium (c) ~~Antheridium~~ (d) Rhizoid
43. The embryo in bryophytes develops to form (a) zygote (b) spore (c) gametophyte (d) ~~sporophyte~~
44. A part of sporophyte formed in bryophyte undergo meiosis to produce \_\_\_\_\_ (a) diploid spore (b) ~~haploid spores~~ (c) sporemother cell (d) diploid plant
45. Which of the following represent the dominant stage in bryophytes (a) sporophytes (b) sporophyll (c) diploid state (d) ~~gametophytes~~

### DIVISION III: Pteridophytes

46. Which of the following is a spore bearing plant? (a) Mosses (b) Lycopodium (c) Pandorina (d) Cladophora
47. Heterosporous is not a condition in the following except (a) Lycopodium (b) Fern (c) Cladophora (d) Selaginella.
48. The reproductive leaves in pteridophytes are considered as (a) Sporangia (b) sporangium (c) sporophylls (d) sporophylls
49. Which of the following plants spore do not show sexual differentiation? (a) Selaginella (b) homosporus (c) Spirogyra (d) Lycopodium
50. Morphologically a statement which recognized pteridophytes as vascular plant is (a) negative (b) partially right (c) positively true (d) correct
51. Which of the following is a rule in pteridophytes? (a) possession of naked spores (b) lack of true roots (c) lack of sporophytic stage (d) possession of vascular system
52. The gametophyte in pteridophytes are \_\_\_\_\_ in size (a) enlarged (b) expand (c) reduced (d) short
53. Fertilization in pteridophytes takes place in water by means of \_\_\_\_\_ (a) motile gamete (b) planogamete (c) flagellated male and female gamete (d) ~~flagellated male gamete~~
54. In pteridophytes the egg cell is enclosed in \_\_\_\_\_ (a) Oogonium (b) ~~archegonium~~ (c) antheridium (d) archigoneum

55. The female gametangium in pteridophyte is (a) Archegonium (b) Oogonium (c) prothallus (d) spore.

#### DIVISION IV: Spermatophytes

56. Which of the following is a spermatophyte? (a) Lycopodium (b) selaginella (c) cycas (d) marchantia
57. The aerial structure in spermatophytes are protected by which of the following? (a) Apophysis (b) Theca (c) integument (d) suberin
58. Which of the following plant cell wall is highly cutinized? (a) Agaricus (b) Liver worth (c) mangifera
59. Heterosperous condition is a similar case to \_\_\_\_\_ and \_\_\_\_\_ plant division (a) Bryophytes and pteridophytes (b) spermatophytes and pteridophytes (c) Pteridophytes and thallophytes (d) thallophytes and spermatophytes
60. The spermatophytes possess well developed root and \_\_\_\_\_ system (a) leaf (b) stem (c) node (d) shoot
61. In spermatophyte the single megaspore within the megasporangium germinates to form the \_\_\_\_\_ (a) female gametophyte (b) male gametophyte (c) megasporophyll (d) microsporophyll
62. The nucellus in spermatophyte is invested by two layers of tissues called \_\_\_\_\_ (a) sporogenous tissue (b) lysogenous tissue (c) integuments (d) tapetum
63. The seed coat is formed by which of the following structures? (a) megasporangium (b) nucellus (c) micropyle (d) megaspore
64. In spermatophyte the single functional megaspore mother cell within the nucellus divides by meiosis to form (a) haploid megaspores (b) diploid megaspores (c) haploid microspores (d) megaspores
65. Which of the following structure develops to form megagametophyte? (a) megaspore (b) megasporangium (c) tetrad spore (d) microspore
66. A tubular outgrowth of male gametophyte in spermatophyte is known as (pollen grain (b) pollen sac (c) pollen tube (d) antheridium.
67. Fertilization and Embryonic formation in spermatophyte take place within the (a) megaspore mother cell (b) megasporangium (c) megagametophyte (d) nucellus

**HINTS:** In summary to the just concluded plants groups, note that the most primitive group inhabiting aquatic condition throughout the the lack of vascular system. Also this group of plants has oogonium as female gametes, they lack alternation of generation since the zygote is the diploid form encountered in them. Hence there is no further development of into embryo except in some high algae which are brown and red algae. It has been emphasized that the bryophytes requires water for the successful fertilization. In similar to thallophyte they are non vascular plants while in contrary possess distinct alternation of generation, they are the first embryonic plant division are also recognized as the truly archegoniate plant. Owing to the formation of embryo bryophyte, pteridophyte and spermatophyte are considered as embryophyta while on the possession of vascular system pteridophytes and spermatophytes are termed tracheophytes. The reproductive units in pteridophyte and spermatophyte are respectively the spores and the seeds. Evolutionarily, these plant groups are arranged as follows thallophytes, bryophytes, pteridophytes and spermatophytes. This is an indication that the most simple primitive of the plant group is thallophyte while the spermatophytes are recognized as the most complex group.

### REVIEW OF PLANT KINGDOM

#### Structure and life history of the thallophytes

68. Which of the following does not undergo sexual reproduction (a) algae (b) fungi (c) lichen (d) ~~Bacteria~~
69. The following are recognized as the mode of sexual reproduction in plant except (a) Isogamy (b) conjugation (c) binary fission (d) oogamy
70. A mode of syngamy between two identical motile gametes is termed (a) Oogamy (b) Anisogamy (c) ~~isogamy~~ (d) conjugation
71. Conjugation is a mode of syngamy involving (a) ~~two~~ two identical motile applanogametes (b) ~~two~~ two identical non-motile applanogametes (c) two unidentical motile planogamete (d) two unidentical non-motile planogamete
72. A syngamy involves motile planogamete and non-motile applanogamete is considered as (a) anisogamy (b) conjugation (c) isogamy (d) ~~oogamy~~

- 73. The fusion of motile unidentical gamete is called ~~(a)~~ anisogamy (b) karyogamy (c) Oogonium (d) flagellated fusion 106. The (b)
- 74. A mode of fertilization or syngamy involves at least one actively swimming gamete is best known as ~~(a)~~ Zooidogamy (b) planogamete (c) Karyogamy (d) anisogamy 107. T
- 75. The following are the common body forms or shapes observed in the bacteria species except ~~(a)~~ scalariform (b) coccus (c) bacillus (d) vibro (e) spirillum 108.
- 76. Sore throat is caused by \_\_\_\_\_ form of bacteria (a) spirillum ~~(b)~~ coccus (c) bacillus (d) vibro 109
- 77. A bacterium cell wall consisting mainly of \_\_\_\_\_ and \_\_\_\_\_ (a) fat and protein (b) protein and lipid (c) phospholipid and protein ~~(d)~~ sugars and peptides 1
- 78. Peptidoglycan complex or murein is associated with (a) viruses (b) fungi ~~(c)~~ bacteria (d) protozoa
- 79. Based on the mode of respiration bacteria are classified as \_\_\_\_\_ and \_\_\_\_\_ facultative and obligate ~~(b)~~ aerobic and anaerobic (c) thermophile and acidophile (d) Archea and Eukarya
- 80. An aerobic bacteria utilize free oxygen from the atmosphere during respiration and later produce (a) alcohol and water (b) hydrogen sulphide and water ~~(c)~~ carbondioxide and water (d) fatty acids and glycerol
- 81. The product of respiration in anaerobic bacteria include the following except (a) ethanol (b) lactic acid (c) carbondioxide ~~(d)~~ glycerol
- 82. Anaerobic respiration is otherwise considered as (a) reduction of oxygen (b) reduced oxygen (c) thermophilic respiration ~~(d)~~ fermentation.
- 83. Under unfavourable condition asexual reproduction in bacteria is by \_\_\_\_\_ (a) karyogamy (b) binary fission ~~(c)~~ spore formation (d) heterogamy
- 84. The following are not recognized in viruses except (a) DNA or RNA (b) Cytoplasm (c) nucleus ~~(d)~~ mitochondria
- 85. Which of the following is not an algae? (a) volvox (b) pandorina (c) chlamydomonas ~~(d)~~ fusarium
- 86. Which of these is not a criteria for the classification of algae? ~~(a)~~ nature of habitat (b) cell wall pigments (c) cell wall materials (d) nature of product stored as food reserves.

87. The seven groups of algae are recognized under division \_\_\_\_\_  
 (a) thallophyta (b) Bryophyta (c) pteridophyta (d) spermatophyta.
88. Which of the following classes is an example of prokaryotic thallophyte?  
 (a) Cyanophyta (b) Pyrophyta (c) Chrysophyta (d) Euglenophyta
89. Rhodophyta, phaeophyta, euglenophyta and chlorophyta are example of \_\_\_\_\_  
 (a) Moneran (b) protista (c) Eukaryota (d) Prokaryota
90. The storage product in the class cyanophyta are recognized as \_\_\_\_\_  
 and \_\_\_\_\_ (a) starch and lipid (b) pectin and cellulose (c) glycogen and protein (d) lipid and leucosin
91. An example of cyanophyta is (a) Diatom (b) Oscillatoria (c) Euglena (d) Chlamydomonas
92. The trace of cell wall is devoid in which of the following classes of algae? (a) Phaeophyta (b) Euglenophyta (c) Rhodophyta (d) cyanophyta

**HINTS:** Algae are group of certain organisms which are classified under division thallophyta. They are varies in sizes and shapes ranging from simple unicellular, simple multicellular, filamentous and the complex multicellular type. The simple unicellular types includes:

Chlamydomonas, chlorella and diatom, the simple multicellular or colonial types are volvox, pandorina, eudorina, seenedesmus e.t.c while ulva, fucus, ectocarpus and laminaria (the brown algae) are recognized as the complex multicellular type. Based on some biochemical features such as the cell wall pigments, cell wall materials and the nature of product stores as food reserves algae are classified into seven groups. These includes: cyanophyta (the blue-green), pyrophyta (dinoflagellated), chrysophyta (yellow algae, coccolithophores and diatoms), euglenophyta (eugleniod), rhodophyta (red algae), phaeophyta (brown algae) and chlorophyta (the green algae).

**FUNGI**

93. Which of the following is characterized with the possession of mycelium (a) Algae (b) Plasmodium (c) Fungi (d) lichen

94. Which of the following is an essential tools in the classification of fungi (a) Nature of pigment (b) Type of food reserve (c) Type of spore produce (d) Nature of cell wall
95. One of these statement is true of a facultative parasite (a) It is incapable of lives on the dead host (b) It extinction follow the dead of the host (c) It feeding rate reduces when the host die (d) It continue to live on the dead host
96. Which of the following organism is characterized with the absence of chlorophyll (a) Spirogyra (b) Chlamydomonas (c) Fungi (d) Euglena
97. In true fungi the mycelium is made up of thread like structures called \_\_\_\_\_ (a) Chitin (b) rhizoid (c) Filament (d) Hyphae
98. As the hypae is to true fungi \_\_\_\_\_ Is to false fungi (a) mycelium (b) Plasmodia (c) thallus (d) chitin
99. Owing to the absence of chlorophyll in fungi they are suitably referred to as \_\_\_\_\_ (a) Holozoic feeder (b) Autotrophic feeder (c) Heterotrophic feeder (d) Parasitic feeder
100. The heterotrophic mode of nutrition in fungi can either be \_\_\_\_\_ or \_\_\_\_\_ (a) Saprophytes or parasites (b) Saprophytes or obligate (c) Facultative or parasites (d) obligate or facultative
101. \_\_\_\_\_ is a specialized mode of nutrition in fungi which involved the remnants of other organisms (a) Parasites (b) facultative (c) Saprophytes (d) hallophils
102. The feeding mode in fungi which eventually result in causing harm to the host is best regarded as \_\_\_\_\_ (a) Facultative (b) Obligate (c) Saprophytes (d) parasites
103. The death of the host may eventually result from \_\_\_\_\_ activity of fungi (a) Saprophytic (b) Mutualistic (c) Symbiotic (d) Parasitic
104. \_\_\_\_\_ is a term referring to a known parasite which can continue to live saprophytically on the dead body of the host (a) Facultative (b) obligate (c) parasitic (d) commensalic
105. \_\_\_\_\_ is a term denoting a situation whereby the parasite are no longer capable of living of their dead host (a) Parasites (b) Obligate (c) Facultative (d) Saprophytic

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106. The digestion of food (substrate) in fungi is by \_\_\_\_\_ means (a) multi-cell (b) hyphae (c) extracellular (d) mycelium
107. The solubilized substrate after the enzymatic extracellular digestion is then absorbed into \_\_\_\_\_ of the fungi (a) mycelium (b) thallus (c) hyphae (d) cell body
108. Which of the following organism is an absorptive heterotroph (a) Chlamydomonas (b) Volvox (c) Pandorina (d) Fungi
109. The cell wall in fungi is made up of \_\_\_\_\_ and \_\_\_\_\_ (a) Chitin and spores (b) Chitin and fungal cellulose (c) mycelium and hyphae (d) Peptidoglycan and Murein
110. In fungi carbohydrate food reserve is stored in the form of \_\_\_\_\_ (a) Glycogen (b) starch (c) protein (d) fats
111. In fungi, the mycelium which is made up of pseudoparenchymatous cell with wall is called (a) plasmodium (b) hyphae (c) filament (d) hemicelluloses
112. If the pseudoparenchymatous mycelium in fungi is without wall, it is termed \_\_\_\_\_ (a) plasmodium (b) hyphae (c) filament (d) hallus
113. Fungi are categorized into classes on the basis of their mode of reproduction and the nature of their \_\_\_\_\_ and \_\_\_\_\_ (a) Parasitic and saprophytic condition (b) Obligate and facultative condition (c) Sexual and asexual spore (d) mycelium and hyphae condition
114. Which of the following is not a representative of the classes of fungi (a) Myxomycetes (b) phycomycetes (c) Phycophyta (d) Ascomycetes
115. Which of the following is not a true fungi (a) Slime mould (b) yeast (c) Rhizopus (d) Puffballs
116. The algal-like fungi belongs to the class \_\_\_\_\_ (a) Phycomycetes (b) Ascomycetes (c) Basidiomycetes (d) Deuteromycetes
117. Cup fungi is an example of organism representing the \_\_\_\_\_ class of fungi (a) Ascomycetes (b) myxomycetes (c) phycomycetes (d) basidiomycetes
118. The class ascomycetes is otherwise referred to as (a) Algal-like fungi (b) Club fungi (c) Sac fungi (d) Fungi imperfecti
119. *Agaricus campestris* is an edible club fungi which belongs to a class called \_\_\_\_\_ (a) Deuteromycetes (b) Ascomycetes (c) Basidiomycetes (d) Phycomycetes

20. The type of sexual spore that is produced by the sac fungi (Ascomycetes) is called  
 (a) Ascospore (b) Conidia (c) Zygospor (d) Basidiospore
121. The ascospore produced by the class Ascomycetes are formed endogenously inside a sac known as \_\_\_\_\_ (a) basidium (b) Conidia (c) Sporangium (d) Ascus
122. \_\_\_\_\_ is known as a type of asexual spore that is being produced by Ascomycetes (a) Ascospore (b) Basidiospore (c) Zygospor (d) Conidia
123. The terrestrial members of phycomycetes reproduce by \_\_\_\_\_ (a) Isogamy (b) Anisogamy (c) Oogamy (d) Conjugation
124. As conjugation is to terrestrial members in phycomycetes \_\_\_\_\_ is to the aquatic member (a) Oogamy (b) Isogamy (c) Anisogamy (d) Oospore
125. The two known types/forms of sexual spore produces by phycomycetes are (a) Conjugation and Oogamy (b) Isogamy and Anisogamy (c) Zygospor and Oospore (d) Zoospore and Zygospor
126. \_\_\_\_\_ is a form of asexual spore produced by terrestrial forms of phycomycetes (a) Zoospore (b) Sporangiospor (c) Basidiospor (d) Conidia
127. As sporangiospor is to terrestrial member of phycomycetes \_\_\_\_\_ is to the aquatic ones (a) Oogamy (b) Zygospor (c) Oospore (d) Zoospore
128. As endogenous is to ascomycetes \_\_\_\_\_ is to basidiomycetes (a) Exogenous (b) polygenous (c) Exoginous (d) Exogenus
129. The sexual spore produced by Basidiomycetes is referred to as \_\_\_\_\_ (a) Basidium (b) Basidiospor (c) Conidia (d) Oospore
130. In the class basidiomycetes the basidiospores are formed exogenously on a club-shaped structure known as \_\_\_\_\_ (a) Ascus (b) Ficus (c) Fucus (d) Basidium
131. In the class deuteromycetes, the life cycle lacks sexual phase simply because (a) they produce asexual spore (b) members do not produce asexual spore (c) they reproduce by conidia (d) they are imperfect
132. One of the following classes of fungi do not produce sexual spore (a) Ascomycetes (b) Basidiomycetes (c) Phycomycetes (d) Deuteromycetes
133. Conidia is an asexual spore which is peculiar to the two known classes of fungi \_\_\_\_\_ and \_\_\_\_\_ respectively (a) deuteromycetes and Ascomycete (b) Basidiomycetes and Ascomycetes (c) Ascomycetes and Deuteromycetes (d) Phycomycetes and Ascomycetes

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134. Horizontally growing hyphae of Rhizopus which grow along the surface of the substrate is called \_\_\_\_\_ (a) Columella (b) Sporangiospore (c) ~~Stolon~~ (d) Rhizoid
135. Deeply penetrating, profusely branched nutritive type of hyphae in Rhizopus is known as \_\_\_\_\_ (a) ~~Rhizoids~~ (b) Mycelium (c) Stolon (d) Sporangiospore
136. A vertically growing reproductive hyphae in rhizopus is referred to as \_\_\_\_\_ (a) Stolon (b) ~~Sporangiospore~~ (c) Columella (d) Rhizoids
137. The fertile portion of the sporangium is separated from the non-fertile region by a wall known as (a) Sporangium wall (b) Fertile wall (c) Reproductive wall (d) columella
138. During sexual reproduction in Rhizopus the fertile head is separated from the sterile base or suspensor by a \_\_\_\_\_ (a) Septum (b) ~~Columella~~ (c) gametangium (d) mycelium
139. \_\_\_\_\_ The Ergot which is use for stopping excess bleeding during child birth is being produced from a fungi called \_\_\_\_\_ (a) Penicilium notatum (b) Claviceps purpurea (c) Agaricus campestris (d) penicillium grseofulvium

#### The Bryophyte (liverworts and mosses)

140. The following are recognized under bryophytes except (a) Hepaticopsida (b) ~~lycopsida~~ (c) anthocerosida (d) Bryopsida
141. The growing tip of marchantia polymorpha bears distinct \_\_\_\_\_ (a) midrib (b) ~~apical notch~~ (c) numerous rhizoid (d) sex organ
142. Structurally marchantia plant is characterized on the dorsal surface by the presence of \_\_\_\_\_ (a) antherozoid (b) male and female thalli (c) ~~midrib~~ (d) archegonium
143. Asexual reproduction in marchantia is strictly by means of (a) Dicotomy (b) ~~gemma cups~~ (c) branching of thalli (d) vegetative bud.
144. Marchantia polymorpha resemble higher plant structurally due to the possession of (a) ~~Rhizoid~~ (b) Sporophytes (c) vegetative leaf (d) midrib

145. The separation of the arm of a dichotomy in marchantia result from (a) decay of older parts (b) decay of the apical notch (c) disappearance of the rhizoid (d) fertilization of sporemother cell.
146. Produces inside the gemma cups are some bud-like structure called \_\_\_\_\_  
gemmales (b) opaculum (c) mucilage (d) gemmae
147. Sexual reproduction in marchartia sp is by means of \_\_\_\_\_ and \_\_\_\_\_  
respectively (a) antherozoid and archeonium (b) archeonium are antherozoid  
(c) antheridiophore and harchegoniophore (d) antheridiophore and  
archegoniophore
148. Which of the following plant is monoecious? (a) liverwort (b) lycopodium (c) mosses (d) selaginella
149. Which of the following is not meant for absorption and transportation? (a) root (b) rhizoid (c) leaves (d) stem
150. Which of the following is characterized with ovate leaves structure? (a) marchantia polymorpha (b) lycopodium clavatum (c) mangifera indica (d) funaria hygrometrica
151. Most of plants possess root as their attachment structure while the unique feature responsible for this in bryophytes is (a) stalk (b) foot (c) seta (d) rhizoid
152. The Funaria hygrometrica is about \_\_\_\_\_ in length (a) 5 to 15mm (b) 10 to 12mm (c) 10 to 15mm (d) 10 to 20mm

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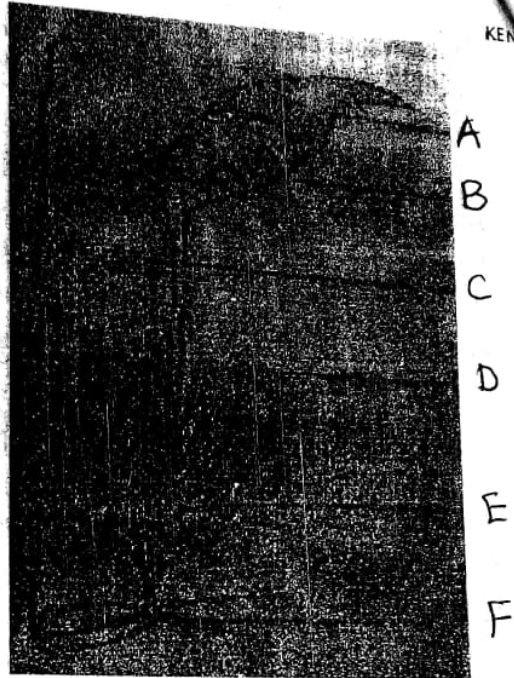
D. A

L. B

L. C

L. D

L. E



Use the above structure to answer question (153-159)

153. The above structure represent the morphology of \_\_\_\_\_ (a) marchantia polymorpha (b) Funaria hygrometrica (c) Funaria hygrometrica (d) Funaria hygrometrica
154. The part label C represent (a) foot (b) capsule (c) seta (d) Rhizoid
155. The part label B is recognized as a (a) capsule (b) calyptora (c) seta (d) leaf
156. What does the part label A represent? (a) Capsule (b) Cap (c) stalk (d) leaf insertion
157. The function of F is to (a) prevent the plant from dessication (b) absorb nutrient from the soil (c) attach the plant to the substratum (d) to produce fruit
158. The part label E is \_\_\_\_\_ (a) leaf (b) insertion (c) rhizoid extension (d) paraphyses
159. The above structure is recognized as (a) gametophyte (b) thallus body (c) sporophyte (d) male and female shoots.

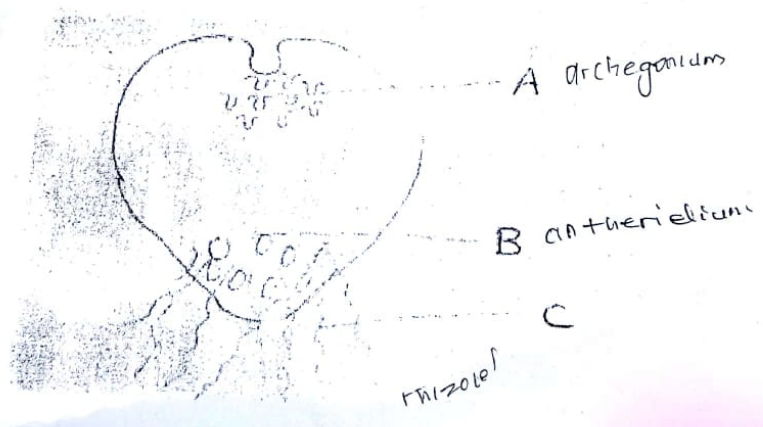
- 160. Which of these plants bears the sporophyte which differentiated into foot seta and capsule? (a) liverwort (b) Lycopodium, clavatum, (c) Marchantia polymorpha (d) Funaria, hygrometrica.
- 161. The capsule of a moss plant bears a sterile basal region called (a) foot (b) apophysis (c) theca (d) operculum.
- 162. In moss plant the apophysis consist of an outer covering of single layered cell called \_\_\_\_\_ (a) epidemis (b) hypodermis (c) dermis (d) epidermis
- 163. The hypodermis in moss plant is made up of two rows of compactly arranged \_\_\_\_\_ (a) sporogenous tissue (b) columella (c) parenchymatous cell (d) peristome.
- 164. The cap in the structure of a moss plant is otherwise called (a) calyptora (b) shoot (c) sporophy (d) sporophyll.
- 165. Which of the following structure in bryophyte protects the young antheridia and the antherozoid from dessication? (a) paraphyses (b) archegonium (c) mucilage (d) ovate leaves.
- 166. In funaria hygrometrica the mucilage is secreted by a number of sterile structure known as (a) Apophyses (b) opaculum (c) paraphyses (d) fertile cell
- 167. The jacket cell surround the venter of archegonium in funnaria hygrometrica is (a) two layer (b) single layer (c) multilayer (d) fertile layer
- 168. In moss plant the capsule body is differentiated into (a) foot, seta and capsule (b) foot, theca and operculum (c) operculum, seta and theca (d) apophysis, theca and operculum
- 169. The upper part of seta and lower part of the capsule in funnaria hygrometrica is (a) apophysis (b) theca (c) paraphyses (d) sporogonium
- 170. Which of the following is not a mode of reproduction in marchantia? (a) vegetative (b) budding (c) sexual (d) asexual
- 171. The antheridium in marchantia is concerned with the production of biflagellated male reproductive unit called (a) antherozoids (b) oogonium (c) archegonium (d) sporogonium
- 172. In marchantia the mature archegonium is flask shape which consist of a cover cell and \_\_\_\_\_ which surround a single row of neck canal cells (a) Archegonial cells (b) venter cell (c) jacket cell (d) venter.

173. Archegonium is a flask shape structure consisting of a neck and an expanded portion known as (a) globules (b) venter (c) calabash (d) thallus
174. The sporophyte which form as a result of development embryo in bryophytes otherwise called (a) sporous (b) sporogonium (c) sporoginum (d) sporophyll.
175. In funnaria plant the sporophytes is attached to the gametophytes by means of (a) seta (b) foot (c) capsule (d) theca

### The pteridophytes (non-seed bearing vascular plants)

176. Cryptogam is a term which is found in association with \_\_\_\_\_ (a) Bryophytes (b) thallophytes (c) pteridophytes (d) spermatophytes
177. The term cryptogam as occur to pteridophytes means that (a) they are flowering plants (b) they are vascular plant (c) they are terrestrial plants (d) they are flowerless plant
178. Which of the following is not recognized as a class of pteridophyte? (a) psilophytinae (b) filicinae (c) equisetinae (d) bryopsida
179. Club mosses is a plant which belongs to the class (a) equisetinae (b) filicinae (c) lycopodinae (d) filicales
180. The aerial leaves of fern is call \_\_\_\_\_ (a) fronds (b) ramenta (c) rachis (d) columella
181. The brownish hairs which covers the petiole of fern plant is called (a) rachis (b) ramenta (c) pinnule (d) fronds
182. The young frond of fern shows \_\_\_\_\_ veneration (a) pinnate (b) bipannate (c) circinate (d) alternate
183. Leptosporangiate is a sub-class of the class (a) lycopodinae (b) psilophytinae (c) equisetinae (d) filicinae.
184. Which of the following is a homosporous plant? (a) selaginella (b) marchantia (c) funaria (d) fern
185. When sporangia are in groups they are termed (a) indusium (b) sorus (c) buds (d) sori
186. A location under the surface of sporophyll is known as \_\_\_\_\_ (a) sorus (b) indusium (c) sporangia (d) calyptora.

- 187. Sorus is protected by a scale-like hood structure known as (a) fertile leaf ~~(b)~~ indusium (c) sporophyll (d) gametophyte
- 188. A special structure which houses the sporangia is termed (a) scale-like hood (b) sorus (c) sporophyte ~~(d)~~ indusium
- 189. Which of the following statements does not qualifies the gametophyte in order filicales? (a) it is thalloid (b) it is greenish in colour (c) it is an heart shaped structure ~~(d)~~ it is a hollow structure.
- 190. Vegetative reproduction in fern plant is by the means of (a) spore (b) decaying of older part ~~(c)~~ rhizome (d) gametophyte
- 191. Fern plant reproduce asexually by means of \_\_\_\_\_ (a) gametophyte (b) gemae (c) rhizome ~~(d)~~ spore
- 192. Each sporangium in pteridophyte is respectively made up of \_\_\_\_\_ and \_\_\_\_\_ (a) sporophyll and microphyll (b) theca and opaculum ~~(c)~~ head and stalk (d) foot and seta
- 193. A thick-walled cell which form the head of a sporangium is called \_\_\_\_\_ ~~(a)~~ annulus (b) stomium (c) paraphyses (d) apophygsis
- 194. The remaining thin wall cell of the head of sporangium is called (a) apophysis (b) paraphyses ~~(c)~~ stomium (d) annulus
- 195. The spore mother cell in pteridophyte is formed by \_\_\_\_\_ ~~(a)~~ sporogenous cell (b) lysogenous cell (c) spore (d) sporophyll
- 196. The spore mother cells undergo meiosis to produce (a) diploid spores ~~(b)~~ tetrad of haploid spores (c) multiple spore (d) double spores



Use the above structure to answer question (197-201)

197. The above structure represents (a) spore (b) sporophyte (c) sporophyll (d) gametophyte
198. Give the shape of the structure (a) ovoid shape (b) conical shape (c) heart shape (d) archegoniate shape
199. The part label A is recognized as (a) sporophyll (b) antheridium (c) archegonium (d) annulus
200. The name giving to the part label B is (a) Antheridium (b) archegonium (c) indusium (d) sporangium.
201. The part label C is a thin structure called \_\_\_\_\_ (a) root (b) rhizoid (c) flagella (d) cilia

### The spermatophyte

202. The spermatophytes are thought to have evolved from the \_\_\_\_\_ (a) selaginella (b) lycopodium (c) cycas (d) bryophyllum
203. The two classes of seed bearing vascular plants are (a) monocot and dicot (b) flowering and flowerless (c) Gymnospermae and angiospermae (d) sporophyte and gametophyte
204. Angiosperm is a class of spermatophyte whose seeds are covered by \_\_\_\_\_ (a) ovule (b) integument (c) stigma (d) fruits
205. Spermatophytes are highly recognized with (a) possession of phloem (b) occurrence of pollination (c) possession of roots, stems and leaves (d) exhibition of seed habit.
206. The male cone in gymnosperm is otherwise known as (a) Rhizoid (b) stomium (c) strobilus (d) strobillus
207. As single fertilization is to gymnosperm \_\_\_\_\_ is to angiosperm (a) double fertilization (b) double pollination (c) single pollination (d) non of the above
208. Which of the following possess plant with naked seed? (a) angiospermae (b) gymnospermae (c) filicinae (d) lycopodinae
209. In gymnosperms megasporangia are borne naked on \_\_\_\_\_ (a) microsporophyll (b) macrosporophyll (c) megasporophyll (d) megasporangium

- KENYA MAN CONK
210. Which of these is a gymnosperm? (a) cycas (b) cyclosorus (c) selaginella (d) bryophyllum
211. A number of sorus in cycas varies from \_\_\_\_\_ (a) two to five (b) two to six (c) three to six (d) two to seven
212. Microsporangia in cycas are found on the \_\_\_\_\_ of microsporophyll (a) adaxial surface (b) adacial surface (c) abaxial surface (d) abacial surface
213. In cycas the strobillus develop singly at the (a) apex of the leaves (b) leaves stalk (c) apex of the stem (d) apex of the root
214. The cycas stem is usually unbranched, forming a \_\_\_\_\_ bearing at it apex a cluster of closely crowded leaves (a) short slender stem (b) short stumpy axis (c) short stumpy apex (d) slender crowded leaves.
215. In cycas the megasporophylls are arranged collectively into (a) loose crown (b) tight crown (c) open crown (d) close crown.
216. Which of the following is an ornamental plant? (a) fern (b) gnetum (c) Taxum (d) cycas
217. Which of the following is radially symmetrical? (a) gnetales (b) coniferales (c) ginkgoales (d) cycadales
218. The adult cycas is \_\_\_\_\_ and dioecius (a) homosporous (b) heterosporous (c) homologous (d) heterogenous
219. Which of these is not true of cycas? (a) The male cone is the strobillus (b) The strobillus is oval in shape (c) microsporangia are found on the abaxial surface of the microsporophyll (d) the female reproductive leaves or megasporophylls occur in strobillus
220. The sporogenous cell in cycas give rise to the (a) megaspore mother cell (b) microspore mother cells (c) megasporangium (d) nucellus
221. As a result of invasion by microganism the cycas plant develop \_\_\_\_\_ (a) tap root (b) adventitious root (c) swoolen root (d) coralloid root
222. As cone is to gymnosperm \_\_\_\_\_ is angiosperm (a) fruit (b) pollen grain (c) flower (d) sporophyll
223. Which of the following statement is correct? (a) the name of a plant is the key to its literature (b) a genus is lower in rank than the species (c) phylum is higher
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(d) spr  
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251.

- than division (d) some common names of plants are more reliable than scientific names
224. The adult plant body is a \_\_\_\_\_ (a) woody plant (b) vascular plant (c) sporophyte (d) terrestrial plant.
225. The coralloid is develop in cycas owing to (a) swelling up of stem (b) improper develops of adventitious root (c) invasion by microorganism (d) swelling up of root
226. The old stem of a cycas is covered by (a) cuticle (b) wax (c) scale (d) sporogenous tissues
227. The reproductive leaves in cycas is otherwise known as (a) microphyll (b) megaspore (c) strobillus (d) sporophyll
228. The cycas plant is homologous to fern in the possession of (a) long tap root (b) circinte veneration (c) projected stem (d) assimilatory root
229. The strobillus in cycas is made of \_\_\_\_\_ (a) megasporophyll (b) microsporangium (c) microsporophyll (d) cone.
230. Which of the following statement is true (a) microsporangia are found on the abaxial surface of microsporophyll (b) microsporangia are found on the adaxial surface of microsporophyll (c) microsporangia occur in definit sori (d) the number of microsporangia varies from three to six.
231. The ovule of a plant is otherwise called (a) megaspore (b) megagametophyte (c) sporangium (d) megasporangium
232. The megasporangium in cycas is finally develop into (a) female strobillus (b) ovule (c) megasporophyll (d) nucellus
233. Which of the following sequence is correct? (a) female gametophyte, megasporangium and megasporophyll (b) microsporophyll, megasporangium and female gametophyte (c) megasporophyll, megasporangium and female gametophyte (d) megasporophyll, female gametophyte and megasporangium.
234. The male gametophyte in cycas bears the microspore which divides unequally into \_\_\_\_\_ and \_\_\_\_\_ (a) microsporophyll and strobillus (b) antheridial and prothallia cell (c) antheridial and sporogenous cell (d) nucellus and micropyle.

235. In cycas the antheridial cell divides into \_\_\_\_\_ and \_\_\_\_\_ (a) antheridial cell and sperm (b) tube cell and generative cell (c) stigma and ovary (d) microspore and sporophyll.
236. The sporogenous tissue in cycas is formed in the (a) nucellus (b) megasporophyll (c) megaspore (d) mega sporangium.
237. Which of the following statement is true? (a) megasporangium occur in strobilus (b) the ovule is the megasporophyll (c) megasporophyll do not occur in strobilus (d) the male cone is not strobilus
238. The megaspore mother cell in cycas is produce in (a) nucellus (b) sporogenous tissue (c) megasporophyll (d) micropyle
239. The megaspore mother cell in cycas undergoes meiosis to form (a) three megaspores (b) eight megaspores (c) two megaspores (d) four megaspores.
240. Which of these statements is not correct? (a) the megaspore mother cell produce 4 haploid megaspores (b) the megaspores are in linear tetrad (c) integument develop into female gametophyte (d) only one megaspore developed into female gametophytes.
241. The female gametophyte is enclosed within \_\_\_\_\_ (a) integument (b) nucellus (c) prothallial cell (d) micropyle.
242. In contrast to gymnosperm the ovules in angiosperm are embedded in the tissue of \_\_\_\_\_ instead of lying bare on their surface (a) female sporophyll (b) female microphyll (c) megasporophyll (d) megasporangium.
243. In angiosperm the male gametophyte is otherwise known as (a) stigma (b) pollen grain (c) pollen sac (d) cone.
244. 137. The male gametophyte in angiosperm bears three nuclei while that of female is \_\_\_\_\_ (a) two (b) six (c) eight (d) one
245. Double fertilization takes place in angiosperm where one sperm fertilizing the egg cell and the other uniting with the fusion nucleus to give rise to the \_\_\_\_\_ (a) triploid endosperm (b) diploid endosperm (c) haploid endosperm (d) triploid mesocarp
246. The two subclasses recognized under angiospermae are \_\_\_\_\_ and \_\_\_\_\_ (a) ceniferales and taxaes (b) dioecious and monoecious (d) pinnate and bipinnate

- KENYA M...
247. The reproductive parts in angiosperm are borne on special structure known as \_\_\_\_\_  
 flower (b) sporophyll (c) microsporophyll (d) microsporangium
248. The megasporophyll is otherwise known as (a) nucellus (b) integument (c) carpel  
 (d) sporogenous cell.
249. The ovule in angiosperm is surrounded by (a) nucellus (b) integument (c) integument  
 micropyle (d) megaspore
250. The following orders of plants belong to class gymnospermae except (a) gymnospermae  
 selaginella (b) cycadales (c) ginkgoales (d) coniferales
251. The following statements are true of male cone in cycas except (a) long-stalked  
 (b) long (c) compact (d) fusiform in shape
252. In angiosperm the ovule is the megasporangium while the entire carpel is \_\_\_\_\_  
 (a) microsporangium (b) megasporophyll (c) microsporophyll (d) strobillus
253. Angiosperm can be propagated by means of the following except (a) root (b) stem  
 rhizome (c) spore (d) leaf
254. In angiosperm the ovules are embedded in the tissue of (a) female sporophyte (b) female  
 male sporophyte (c) male microphyll (d) female sporophyll
255. All gymnosperms are characterized with the absence of vessel except (a) gnetales  
 (b) ginkgoales (c) cycadales (d) coniferales
256. As sieve cell is to gymnosperm \_\_\_\_\_ is to angiosperm (a) sieve plate (b) sieve  
 vessel (c) tracheids (d) sieve tube
257. As vessel is to angiosperm \_\_\_\_\_ is to gymnosperm (a) sieve tube (b) tracheid (c) sieve  
 cell (d) companion cell.
258. In gymnosperm the microsporophylls and megasporophyll are respectively  
 aggregated to form \_\_\_\_\_ and \_\_\_\_\_ (a) male and female strobillus (b) male  
 and female gametes (c) male and female cones (d) male and female cone
259. The pericarp of a fruit develops from \_\_\_\_\_ (a) ovary (b) epicarp (c) ovary  
 mesocarp (d) endocarp
260. Which of the following is not a part of a fruit pericarp (a) endocarp (b) endoderm  
 (c) mesocarp (d) epicarp
261. Which of the following stages of embryonic development in angiosperm consist of  
 shoot meristem, root meristem and cotyledon (a) heart (b) globular (c) torpedo (d) zygote

MORPHOLOGY AND ANATOMY OF FLOWERING PLANTS

262. Which of these statements is not true of a leaf (a) it encourage the gaseous exchange (b) it is the food making organ of a plant (c) it embraces evaporation (d) it is the site for storage of glycogen
263. Leaves that have not undergone modification for specialized purposes normally consist of \_\_\_\_\_ and \_\_\_\_\_ (a) apex and midrib (b) ~~petiole~~ <sup>stalk</sup> and blade (c) terminal and auxillary bud (d) vein and lamella
264. The petiole of a leaf is otherwise called \_\_\_\_\_ (a) stalk (b) blade (c) midrib (d) vein network
265. The surface of leaves are covered with tiny openings known as (a) guard cell (b) stomata (c) lenticell (d) cuticle
266. Leaf bud are form or emerge at \_\_\_\_\_ and \_\_\_\_\_ of the tree branches (a) stem and root (b) joint and tip (c) shoot and root (d) margin and blade
267. Oak leaf is an example of (a) simple leaf (b) compound leaf (c) complex leaf (d) bi-pinnate
268. Majorly the point of attachment for the leaves in most dicotyledonous plant is \_\_\_\_\_ (a) base on the petiole (b) base of the apex (c) terminal bud (d) adventitious bud
269. Which of the following described phyllothaxy ? (a) stem arrangement (b) leaf structure (c) leaf arrangement (d) stem structure
270. The two main types of leaves arrangement are \_\_\_\_\_ and \_\_\_\_\_ (a) verticillate and alternate (b) alternate and opposite (c) decussate and whorl (d) alternate and decussate
271. The spiral arrangement of leaves around a stem is termed \_\_\_\_\_ (a) opposite (b) decussate (c) alternate (d) verticillate
272. When pairs of leaves are jointed to the stem at the same level this is called (a) verticillate (b) alternate (c) decussate (d) opposite
273. The leaves that are arranged at right angle on a stem are called (a) decussate (b) verticillate (c) whorl (d) double whorl
274. The arrangement of more than one leaves at the same level on a stem is known as (a) verticillate or whorl (b) decussate (c) alternate (d) opposite
275. The points on the stem at which leaves or buds arise are called (a) internodes (b) antinodes (c) nodes (d) branches

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276. \_\_\_\_\_ is the regions of the stem between the node (a) branches nodal place (c) node space (d) internode
277. Which of these statements is incorrect about the stem? (a) it offer support for the leaves (b) it helps in food storage in some plants (c) it helps in water conduction (d) non of the above
278. The presence of waxy coating on the outer layered cuticle of pine needle leaves helps to \_\_\_\_\_ (a) repel insect (b) retain water (c) prevent water loss (d) increase moisture
279. Eucalyptus leaf is an example of (a) succulent leaf (b) pine needle leaf (c) evergreen leaf (d) dimorphic leaf
280. The white colouration and waxy water sealing coating are the adaptation to \_\_\_\_\_ in succulent leaves (a) prevent water loss (b) reduce evaporation (c) reduce water gain (d) balance water level.
281. The presence of a felt-like lower surface in evergreen leaves of the rhosodendron plant helps to retain \_\_\_\_\_ and repel (a) water and insect (b) wind and water (c) insect and water (d) temperature and moisture
282. Venus's flytrap is an example of \_\_\_\_\_ leaf (a) carnivorous (b) insectivorous (c) omnivorous (d) compound
283. \_\_\_\_\_ is a parts of vascular plant which commonly bears leaves and buds (a) root (b) shoot (c) stem (d) rhizoid
284. \_\_\_\_\_ is a root system modified for food storage (a) cassava (b) cactus (c) onion bull (d) yam
285. Which of the following is not a berry (a) orange (b) pepper (c) tomatoes (d) pawpaw
286. The fruit wall which does not break open to liberate seed is known as (a) succulent (b) indehiscent (c) semi-dehiscent (d) dehiscent
287. A true simple fruit made up of distinct chambers separated by shorts of endocarp is called (a) berry (b) dehiscent (c) Hesperidium (d) drupe

## REVIEW OF ANIMAL KINGDOM

## Phylum Sarcomastigophora

288. Which of the following is not a subphylum under sarcomastigophora? (a) sarcodina (b) opalinata (c) ciliophora (d) mastigophora
289. All these are locomotory organelle in sarcodina except (a) filopodia (b) lobopodia (c) axopodia (d) non of the above
290. Reticulopodia is a locomotory organelle which peculiar to (a) Amoeba (b) Allogonia (c) plystomella (d) actinomorpha
291. \_\_\_\_\_ is an organism which uses filopodia as its unique locomotory structure (a) plystomella (b) arcella (c) actinomorpha (d) amoeba
292. Long, thin with a canal support are the notable criteria to identify \_\_\_\_\_ as a locomotory organelles among others (a) lobopodia (b) filopodia (c) actinomorpha (d) axopodia
293. Actinomorpha is an example of organism which uses (a) Lobopodia (b) axopodia (c) reticulopodia (d) filopodia
294. As reticulopodia is to Allogonia \_\_\_\_\_ is to amoeba (a) Arcella (b) filopodia (c) axopodia (d) lobopodia
295. Which of the following possess flagella at the developing stage? (a) Mastigophora (b) opalinata (c) sarcodina (d) ciliophora
296. Which of the following is a plant like flagellate? (a) trypanosoma (b) Euglena (c) Leptomonas (d) Leishmania
297. Other than locomotion and food collection the flagella in mastigophora also serve as (a) reproductive units (b) sense receptors (c) digestive organelles (d) photosynthetic organ
298. The plant like flagellates are so called owing to the presence of (a) Zygospor (b) polymorphism (c) chromatophore (d) chromastophare.
299. The two superclasses found in mastigophora are respectively \_\_\_\_\_ and \_\_\_\_\_ (a) zoomastigophora and phytomastigophora (b) plant-like flagellate and animal like flagellate (c) phytomastigophora and zoomastigophora (d) zygomastigophra and zoomastigophora

gaseous  
evaporation (d)

as normally  
made (c)

midrib (d)

cell (b)

ches (a)

(d) bi-

s

300. Trypanosome, crithidia, leptomonas and leishmania are \_\_\_\_\_ in mastigophora  
(a) monomorphic form (b) dimorphic form (c) tetramorphic form (d) polymorphic form

301. Which of the following organism exhibit polymorphism? (a) Euglena (b) volvox  
(c) Trypanosoma (d) Arcella

302. Which of the following is an endoparasite that is commonly found in amphibians?  
(a) Trypanosoma brucei (b) pseudomona aeruginosa (c) entamoeba histolytica (d) opalina ranarum

303. Opalina ranarum is commonly found in the \_\_\_\_\_ of frog (a) duodenum (b) ileum (c) rectum (d) caecum

304. The following are the types of asexual reproduction in sarcomastigophora except  
(a) Binary fission (b) spore formation (c) multiple fission (d) budding

#### Phylum Apicomplexa

305. Which of the following organism is an endoparasite? (a) Euglena (b) paramecium  
(c) plasmodium (d) sycon

306. The infective stage in phylum apicomplexa is (a) sporocyst (b) merozoites (c) Oocyst (d) sporozoite

307. Which of the following organism exhibit indirect life cycle? (a) Amoeba (b) plasmodium (c) planaria (d) polystoma

308. \_\_\_\_\_ development is initiating by the passing of the sporozoite from mosquito blood (a) Erythrocytic (b) sporogony (c) schizogony (d) pre-erythrocytic

309. In the life cycle of plasmodium the sporozoite in the liver cell multiply asexually to release \_\_\_\_\_ (a) merozoite (b) sporogony (c) schizogony (d) spore

310. The life cycle of plasmodium employs an invertebrate host called (a) Trypanosoma brucei (b) Taenia saginata (c) Anopheles mosquito (d) Entamoeba histolytica

311. The sporozoite which enter the liver cell after pre-erythrocytic stage from mosquito blood multiply to produce \_\_\_\_\_ (a) merozoite (b) sporogony (c) plasmodium (d) schizogony

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displaced by ca  
(a) 2.46cm  
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312. The stage of asexual multiplication of the merozoite in the red blood cell is known as (a) Erythrocytic stage (b) sporocytic stage (c) merocytic stage (d) pre-erythrocytic stage
313. The merozoite which produce as a result of multiplication of sporozoites in the liver cell is either enter the red blood cell or go through one or more stages of (a) sporogony (b) schizogony (c) merogony (d) ookinete
314. After the liberation of merozoites from the red blood cell, some of the merozoites re-infect the red blood cells while some become (a) micro and megagametocytes (b) degenerated (c) destroyed (d) schizont.
315. In the gut of mosquito the micro and megagametocyte fuse to form \_\_\_\_\_ (a) Sporozoite (b) oocyst (c) ookinete (d) sporozoite
316. During the life cycle of plasmodium the ookinete from the gut of mosquito penetrate the \_\_\_\_\_ where it secrete a cyst wall to form an oocyst. (a) stomach (b) liver (c) salivary gland (d) mucosa
317. The production process of sporozoite is termed (a) sporulation (b) schizogony (c) sporogony (d) multiple fission
318. At the end of the sporogony the matured parasite becomes ruptured and pass into (a) thyroid gland (b) blood (c) salivary gland (d) liver

### Phylum Ciliophora

319. At juvenile stage all members of ciliophora possess \_\_\_\_\_ as a covering over their body surface (a) pseudopodia (b) flagella (c) cilia (d) nucleus.
320. The phylum ciliophora possess cilia whose function are to serve as \_\_\_\_\_ and \_\_\_\_\_ (a) excretion and respiration (b) reproduction and locomotion (c) locomotion and food collection (d) digestion and assimilation.
321. Which of the following phyla is characterized with possession of mega and micro-nucleus? (a) sarcomastigophora (b) platyhelminthes (c) apicomplexa (d) ciliophora
322. The cilia which cover the surface of members of phylum ciliophora originated from (a) micronucleus (b) meganucleus (c) sub-peculiar structure (d) kinetosome

323. The following types of reproduction are not a rule in phylum ciliophora except budding (b) Spore formation (c) autotomy (d) binary fission.
324. Which of the following is a member of phylum ciliophora? ~~(a) Plasmodium~~ (b) Euglena ~~(c) Aurelia~~ (d) Planaria.
325. Which of the following nuclear reorganization takes the resemblance of conjugation? (a) binary fission (b) budding (c) autogamy (d) multiple fission. *Cytogamy*

### Phylum Porifera

326. The most primitive multi-cellular animals are represented in the phylum (a) ciliophora (b) porifera (c) sacromastigophora (d) apicomplexa .
327. The following are ignored as member of the phylum porifera except (a) Sycon (b) tapeworm (c) Liverfluke (d) plasmodium.
328. Excretion and respiration in porifera is by \_\_\_\_\_ (a) evaporation (b) osmosis ~~(c) diffusion~~ (d) active transport.
329. The epidermal cell which covers the body of porifera is known as \_\_\_\_\_ ~~(a)~~ pinacocyte (b) choanocyte (c) amoebocyte (d) chromocyte.
330. The outer and inner layer of porifera is separated by (a) granulocyte (b) choanocyte ~~(c) amoebocyte~~ (d) pinacocyte
331. The pigmented amoebocytes in phylum porifera is called (a) choanocyte (b) chlorocyte (c) chromoplast ~~(d) chromocytes~~ .
332. The amoebocytes which concerned with the separation of skeleton in porifera are known as (a) archeocytes (b) chlorocytes (c) chromocyte ~~(d) scleroblast~~
333. The production of water current, feeding and reproduction are the functions of \_\_\_\_\_ in porifera (a) amoebocytes (b) chromocytes ~~(c) choanocytes~~
334. The large central cavity in porifera is known as ~~(a) spongocoel~~ (b) osculum (c) ostium (d) flagellated chamber.
335. The two known types of reproduction in sponges are ~~(a) asexual and sexual~~ (b) binary fission and multiple fission (c) conjugation and oogamy (c) budding and spore formation
336. In sponge asexual reproduction occurs by means of (a) spore formation ~~(b) bud formation~~ (c) tubular outgrowth (d) amphiblastula