(BOTANY)

SECTION - A

101. Leaves originate from _____ and are arranged in a/an _____ order.
(1) Root apical meristem, acropetal
(2) Floral meristem, basipetal
(3) Shoot apical meristem, acropetal
(4) Internodes, basipetal

102. Which of the following statement/s about Phaeophyceae is/are **correct**?
(1) Vegetative reproduction occurs by fragmentation.
(2) Asexual reproduction takes place by pear-shaped biflagellate zoospores.
(3) In sexual reproduction, gametes are pyriform and bear 2 laterally attached flagella.
(4) All of the above

103. Which of the following is non-green structure?
(1) Protonema
(2) Gemmae bud
(3) Sporophyte of liverworts
(4) Leafy stage of moss

104. Epiphyllous condition is present in
(1) Bean (2) *Asparagus*
(3) Tobacco (4) *Petunia*

105. Fleshy and cylindrical modified stem found in
(1) *Euphorbia* (2) *Opuntia*
(3) Grass (4) Both (2) and (3)

106. All are example of epigynous, **except**
(1) Cucumber (2) Sunflower
(3) Peach (4) Guava

107. Maize and sugarcane contain
(1) Storage root
(2) Stilt root
(3) Pneumatophores
(4) Prop roots

108. Find out the **incorrect** statement:
(1) Root hair absorbs water and mineral from the soil.
(2) Root increases in length due to region of elongation.
(3) Meristematic region have thin walled cell with dense cytoplasm.
(4) Root cannot synthesize plant growth regulator

109. **Assertion:** Bryophytes are called amphibian of plant kingdom.
Reason: These plants live in soil but are dependent on water for sexual reproduction
(1) Both Assertion & Reason are true and the reason is the correct explanation of the assertion.
(2) Both Assertion & Reason are true but the reason is not the correct explanation of the assertion.
(3) Assertion is true statement but Reason is false.
(4) Both Assertion and Reason are false statements

110. Actinomorphic flower is present in
(1) Pea (2) *Cassia*
(3) Chilli (4) Gulmohur

111. Read the given statements and select the **correct** option.
Statement-1: In green algae, pyrenoids contain protein besides starch.
Statement-2: In red algae, sexual reproduction is oogamous and accompanied by complex post fertilisation developments.
(1) Both statements 1 and 2 are correct.
(2) Statement 1 is correct but statement 2 is incorrect.
(3) Statement 1 is incorrect but statement 2 is correct.
(4) Both statements 1 and 2 are incorrect

112. Find out the **incorrect** statement.
(1) Cones in pteridophytes are formed in *Selaginella* and *Equisetum.*
(2) Majority of Pteridophytes are homosporous.
(3) *Selaginella* and *Salvinia* is heterosporous pteridophytes.
(4) Main plant body of bryophyte is diploid

113. Epipetalous condition of stamen is present in
(1) Tobacco (2) *Gloriosa*
(3) Sunflower (4) Mustard

114. Sepals of flower not show any overlapping is feature of ……. aestivation.
(1) Whorled (2) Twisted
(3) Valvate (4) Vexillary

115. Diplontic life cycle is seen in
(1) Angiosperms and gymnosperms
(2) Spermatophytes
(3) Both (1) and (2)
(4) Pteridophyte

116. Mark the **correctly** matched
(1) Chilli – Racemose
(2) Pea – Actinomorphic
(3) *Datura* – Zygomorphic
(4) Mustard – Tetramerous

117. Consider the following-
(a) All diplontic plant have ovule and double fertilization
(b) Gymnosperm show pollination by wind
How many is/are correct?
(1) Only (a) (2) Only (b)
(3) Both correct (4) Both wrong

118. The female gametophyte of gymnosperms
(1) Bear two archegonia
(2) Retained within megasporangium
(3) Is unicellular
(4) Both (1) and (2)

119. Branched stem present in
(1) *Pinus* (2) *Cedrus*
(3) Both (1) and (2) (4) *Cycas*

120. How many plants in the list given below have marginal placentation?
Mustard, Gram, Tulip, *Asparagus*, *Arhar*, *Sunhemp*, Chili, *Colchicine*, Onion, Moong, Pea, Tobacco, Lupin
(1) Four (2) Five
(3) Six (4) Three

121. Which of the following is not a stem modification?
(1) Pitcher of *Nepenthes*
(2) Thorns of *Citrus*
(3) Tendrils of cucumber
(4) Flattened structures of *Opuntia*

122. Which of the following statement(s) is/are **correct** about calyx?
(1) Calyx is the outermost whorl of the flower and are called sepals.
(2) Sepals are green, leaf like structure and protect the flower in the bud stage.
(3) The calyx may be gamosepalous (sepals free) or polysepalous (sepals united).
(4) Both (1) and (2)

123. Which of the following is not a class of pteridophytes?
(1) Psilopsida
(2) Lycopsida
(3) Bryopsida
(4) Sphenopsida

124. All are adventitious roots that provide extra mechanical support to the plants, **except**
A. Stilt root
B. Prop root
C. Pneumatophores
(1) Only (B)
(2) Only (A)
(3) Both (A) and (B)
(4) Only (C)

125. Syncarpous condition is seen in
(1) Lotus and mustard
(2) Rose and tomato
(3) Mustard and tomato
(4) Lotus and rose

126. Whorled phyllotaxy is found in
(1) Guava (2) China rose
(3) Mustard (4) *Alstonia*

127. In gymnosperms
(1) Pollen grains germinate inside the ovary
(2) The development of pollen grain takes place within the microsporangia
(3) The cones bearing megasporophylls are called male cones or male strobili
(4) All are correct

128. Identify the **incorrect** match
(1) Monocarpellary – Mango
(2) Sunflower – Basal placentation
(3) Parietal placentation – Cabbage
(4) Epigynous – Mustard

129. Soil binders and use as ornamental are the features of
(1) Pteridophyte (2) Bryophytes
(3) Gymnosperm (4) Angiosperm

130. When stamen is attach to petal it is observed in
(1) *Makoi* and *Aloe*
(2) Belladona and Chilli
(3) *Sesbania* and Pea
(4) Tomato and Tulip

131. Select the **true** statement from the following.
(1) Zygotic meiosis does not occur in *Volvox*
(2) *Fucus* does not show the same life-cycle pattern as most of the algae show
(3) In both bryophytes and pteridophytes, the dominant phase is diploid sporophyte
(4) All vascular plants are seed bearing plants

132. Cells of zone of elongation are
(1) Undergo rapid elongation
(2) Gradually differentiate and mature
(3) Responsible for growth of root in length
(4) All of the above

133. Floral formula of tomato/tobacco is

(1) $\oplus \male\!\!\female K_{4-5}A_{10}\underline{G}_{(2)}$

(2) $\oplus \male\!\!\female K_{2+2}C_4A_{2+4}\underline{G}_1$

(3) $\oplus \male\!\!\female P_2A_3\underline{G}_1$

(4) $\oplus \male\!\!\female K_{(5)}\overset{\frown}{C_{(5)}A_5}\underline{G}_{(2)}$

134. Which of the following statement(s) is/are **correct** about venation?

(i) The arrangement of veins and the veinlets in the lamina of leaf is called venation.

(ii) Reticulate venation is the characteristic of monocots.

(iii) When the veinlets form a network, the venation is termed as reticulate venation.

(iv) When the veins run parallel to each other within a lamina, the venation is termed as parallel venation.

(1) Only (i) (2) Both (i) and (ii)

(3) (i), (iii) and (iv) (4) All of these

135. Pigment present in *Kelp* and *Ectocarpus* is

(1) Chl a and Chl b

(2) Chl a, Chl d, and Phycoerythrin

(3) Chl a, Chl c and fucoxanthin

(4) Chl a and chl d

SECTION - B

136. In cucumber, the axillary bud is modified to form

(1) Bladders (2) Tendrils

(3) Thorns (4) Pitchers

137. When the margins of sepals or petals overlap one another in a particular direction, the condition is termed as

(1) Valvate (2) Vexillary

(3) Imbricate (4) Twisted

138. Flowers are zygomorphic in

(1) *Datura* (2) Mustard

(3) Gulmohur (4) Tomato

139. Root hairs are present in/on

(1) Region of elongation

(2) Region of maturation

(3) Region of meristematic activity

(4) Root cap

140. In china rose the flower are

(1) Actinomorphic, epigynous with valvate aestivation

(2) Zygomorphic, hypogynous with imbricate aestivation

(3) Zygomorphic, epigynous with twisted aestivation

(4) Actinomorphic, hypogynous with twisted aestivation

141. Giant redwood tree is

(1) *Sequoia* (2) *Ginkgo*

(3) *Ephedra* (4) *Wolfia*

142. Choose the **not correct** option w.r.t. first terrestrial plant.

(1) Haploid phase in the life cycle is more differentiated than that of algae

(2) Zygote divides by meiosis immediately

(3) The sporophyte is not free-living and independent

(4) The spores germinate to produce gametophyte either directly or by a protonema stage

143. Sporophyte in bryophytes is

(1) Free-living.

(2) Attached to the photosynthetic gametophyte.

(3) Unicellular.

(4) Produced by spores

144. Consider the following statements

A. Corm and Rhizome both are root modification

B. Axillary bud can modify into thorns

C. Axile placentation present in lemon and *Petunia*

Which statements is/are **correct**?

(1) B and C (2) All three

(3) A and B (4) Only A

145. Match column–I with column–II and choose the correct option.

	Column I (Members of Fabaceae)		**Column II (Economic importance)**
A.	*Sunhemp*	I.	Medicine
B.	Lupin, sweet potato	II.	Ornamental
C.	*Indigofera*	III.	Fodder
D.	*Mulaithi*	IV.	Fibres
E.	*Sesbania, Trifolium*	V	Dye

(1) A – IV, B – II, C – V, D – I, E – III

(2) A – III, B – II, C – V, D – I, E – IV

(3) A – II, B – III, C – V, D – I, E – IV

(4) A – V, B – III, C – II, D – I, E – IV

146. Prop or pillar roots are found in
(1) Carrot (2) Sweet potato
(3) Banyan tree (4) Maize

147. A lateral branch with short internodes and each node bearing a rosette of leaves and a tuft of roots are found in aquatic plants like
(1) *Pistia* (2) *Eichhornia*
(3) Pineapple (4) Both (1) and (2)

148. The morphological nature of the edible part of coconut is
(1) Perisperm (2) Endocarp
(3) Endosperm (4) Pericarp

149. Consider the following statements.
a. *Sphagnum* is haplo-diplontic.
b. *Psilotum* is haplo-diplontic.
c. *Gracilaria* have non-motile asexual Stage.
Which statement(s) is/are **correct**?
(1) Only a (2) Both a and b
(3) All three (4) Only b and c

150. An example of edible underground stem is
(1) Corm
(2) Carrot
(3) Turnip
(4) Sweet potato

(ZOOLOGY)

SECTION - A

151. Match the following columns and mark the correct option

	Column I		**Column II**
A	White muscle fibres	1.	Lactic acid
B	Red muscle fibres	2.	Contractile unit
C	Myosin filament	3.	Myoglobin
D	Sarcomere	4.	A-Band

Codes

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

152. Pubic symphysis is a
(1) Synovial joint (2) Cartilaginous joint
(3) Synarthrose (4) Fibrous joint

153. A- band contains
(1) Actin (2) Z line
(3) Myosin (4) Both (1) and (3)

154. A U-shaped bone present at the base of buccal cavity is
(1) Ethmoid bone (2) Malleus
(3) Hyoid bone (4) Lacrimal bone

.

155. Which of the following bones is/are part of human skull?
(1) Frontal bone (2) Parietal bone
(3) Temporal bone (4) All of these

156. Middle ear contains three tiny bones.
I. Maxillae
II. Malleus
III. Incus
IV. Stapes
V. Vomer
(1) I, and III (2) II, III and IV
(3) III, IV and V (4) I, II and V

157. Scapula is a part of
(1) Axial skeleton
(2) Pelvic girdle
(3) Leg bone
(4) Pectoral girdle

158. Which of the following is an incorrect match?
(1) Ball and socket joint: Elbow joint
(2) Hinge joint: Knee joint
(3) Pivot joint: B/W atlas and axis
(4) Sutures: Fibrous joints

159. The type of muscle present in our,
(1) Biceps are striated and voluntary
(2) Thigh are smooth muscle fibres and fusiform in shape
(3) Heart is involuntary and unbranched with intercalated discs
(4) Stomach wall are striated and involuntary

160. Atlas is
(1) 1st cervical vertebra
(2) 2nd cervical vertebra
(3) 1st thoracic vertebra
(4) 2nd lumbar vertebra

161. The number of cervical vertebrae in almost all mammals is
(1) Four (2) Five
(3) Six (4) Seven

162. The vertebral column in humans
(1) Protects the spinal cord
(2) Supports the head
(3) Provides surface as an attachment for ribs and musculature of back
(4) All of the above

163. Fused vertebrae in human are
I. Sacral **II**. Coccygeal
III. Thoracic **IV**. Cervical
V. Lumbar
(1) I and II (2) III and IV
(3) IV and V (4) II and V

164. Flat bone on the ventral midline of thorax to which ribs are attached is
(1) Coccyx (2) Sternum
(3) Sacrum (4) Ribs

165. How many pairs of ribs are present in human skeleton?
(1) 10 pairs (2) 12 pairs
(3) 9 pairs (4) 7 pairs

166. Out of 'X' pairs of ribs in humans only 'Y' pairs are true ribs. Select the option that correctly represents values of X and Y and provides their explanation.

(1)	$X = 12, Y = 7$	True ribs are attached dorsally to vertebral column and ventrally to the sternum.
(2)	$X = 12, Y = 5$	True ribs are attached dorsally to vertebral column and sternum on the two ends.
(3)	$X = 24, Y = 7$	True ribs are dorsally attached to vertebral column, but are free on ventral side.
(4)	$X = 24, Y = 12$	True ribs are dorsally attached to vertebral column, but are free on ventral side.

167. During muscle contraction which event occurs-?
(1) I band remains same
(2) A band decrease in size
(3) H zone disappears
(4) Sarcomere size increases

168. ATPase activity is present in
(1) Actin (2) Troponin
(3) Myosin (4) Tropomyosin

169. Select the correct option.
(1) 11^{th} and 12^{th} pairs of ribs are connected to the sternum with the help of hyaline cartilage
(2) Each rib is a flat thin bone and all the ribs are connected dorsally to the thoracic vertebrae and ventrally to the sternum
(3) There are seven pairs of vertebrosternal, three pairs of vertebrochondral and two pairs of vertebral ribs
(4) 8^{th}, 9^{th} and 10^{th} pairs of ribs articulate directly with the sternum

170. The joint between carpal and metacarpal of thumb is
(1) Pivot Joint
(2) Fibrous Joint
(3) Cartilaginous Joint
(4) Saddle Joint

171. **Statement I:** Human ribs are bicephalic.
Statement II: Human ribs articulate at two places on the ventral side with the sternum.
(1) Both statements I and II are correct
(2) Both statements are incorrect
(3) Only statement (I) is correct
(4) Only statement (II) is correct

172. Match the following columns and choose the correct option.

Column I	**Column II**
A. Intervertebral disc	I. Gliding joint
B. Carpals	II. Fibrous joint
C. Frontal – Parietal	III. Cartilaginous joint
D.Occipital-Atlas	IV. Condyloid joint

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

173. Pelvic girdle consists of two coxal bones and each coxal bone consists.
I. Ilium II. Incus
III. Ischium IV. Pubis
Choose the correct option containing all correct
(1) I, II and III (2) II, III and IV
(3) I, III and IV (4) I, II and IV

174. A cup-shaped bone that covers the knee ventrally is called
(1) Stapes
(2) Patella
(3) Malleus
(4) Incus

175. The portion of the myofibril between two successive 'Z' lines is considered as the functional unit of contraction and is called
(1) Sarcolemma
(2) Sarcoplasm
(3) Sarcomere
(4) Sarcoplasmic reticulum

176. Thin filament of myofibril contains 2 'F' actins and two other proteins namely -------- and -------.
(1) Myosin, Meromyosin
(2) G- Actin, Myosin
(3) Troponin, Tropomyosin
(4) Troponin, Meromyosin

177. Cross-bridges break when____ binds to myosin head.
Choose the option which correctly fills the blank
(1) ATP (2) ADP
(3) Ca^{++} (4) Mg^{++}

178. Match the following columns.

	Column I (Limb bones)	**Column II** (Number)
A.	Ulna	I. 14 bones
B.	Carpals	II. 5 bones
C.	Metacarpals	III. 8 bones
D.	Phalanges	IV. 1 bone

Codes:

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

179. Lower jaw bone is
(1) Vomer (2) Maxilla
(3) Mandible (4) Zygomatic

180. Match the following columns and choose the correct option.

Column I (Location)		**Column II (Bones)**
A.	Hand	I. Femur
B.	Wrist	II. Radius
C.	Thigh	III. Carpal
D.	Ankle	IV. Tarsals

Codes

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

181. Scapula is present between
(1) 2^{nd} - 9^{th} rib
(2) 2^{nd} - 7^{th} rib
(3) 1^{st} - 4^{th} rib
(4) 5^{th} - 10^{th} rib

182. Visceral muscles are found in
(1) Biceps (2) Heart
(3) Stomach (4) Legs

183. Cardiac muscles are
(1) Smooth and voluntary
(2) Smooth and involuntary
(3) Striated and involuntary
(4) Striated and voluntary

184. Which disorder is due to the accumulation of uric acid?
(1) Osteoporosis
(2) Myasthenia gravis
(3) Muscular dystrophy
(4) Gout

185. The regulatory protein of a muscle are respectively?
(1) Troponin and dystrophin
(2) Dystrophin and myosin
(3) Actin and myosin
(4) Tropomyosin and troponin

SECTION - B

186. Myofibrils appear striated due to the presence of
(1) Actin in lighter region and myosin in darker region
(2) Actin throughout the length of myofibril
(3) Myosin in lighter region and actin in darker region
(4) Myosin throughout the length of myofibril

187. Find the odd one out.
(1) Clavicle (2) Scapula
(3) Glenoid cavity (4) Coxal bone

188. In the centre of each I-band, there is an elastic fibre called
(1) Mine (2) Z-line
(3) A-line (4) H-zone

189. Acromion process is related to
(1) Coxal bone (2) Humerus
(3) Scapula (4) Clavicle

190. Which of the following is an inherited disorder related to muscle
(1) Muscular dystrophy
(2) Gout
(3) Myasthenia gravis
(4) Tetanus

191. In resting state, a subunit of _____ masks the active binding sites for myosin on actin filaments.
(1) Troponin (2) Globular actin
(3) Meromyosin (4) Tropomyosin

192. In anaerobic condition the skeletal muscle causes accumulation of
(1) Lactic acid
(2) Pyruvic acid
(3) Uric acid
(4) Nucleic acid

193. Amoeboid movements occur due to streaming of protoplasm in
(1) Macrophages and leucocytes
(2) Spermatozoa, *Amoeba* and erythrocytes
(3) Erythrocytes and leucocytes
(4) Spermatozoa and erythrocytes

194. **Statement (I):** Myasthenia gravis is an autoimmune disorder affecting neuromuscular junction.
Statement (II): Osteoporosis is age-related disorder due to hypersecretion of estrogen.
(1) Both statements I and II are correct
(2) Both statements are incorrect
(3) Only statement (I) is correct
(4) Only statement (II) is correct

195. To convert G- actin into F- actin which ion is required?
(1) Ca^{+2} (2) Mg^{+2}
(3) Zn^{+2} (4) Fe^{+2}

196. A cricket player is fast chasing a ball in the field. Which one of the following groups of bones is directly contributing to this movement?
(1) Malleus, tibia, metatarsals, femur
(2) Pelvis, patella, tarsals, incus
(3) Sternum, femur, tibia, fibula
(4) Tarsals, femur, metatarsals, tibia

197. Inflammation of joints is called as
(1) Osteoporosis (2) Myasthenia gravis
(3) Arthritis (4) Tetany

198. Glenoid cavity articulates
(1) Clavicle with acromion
(2) Scapula with acromion
(3) Clavicle with scapula
(4) Humerus with scapula

199. Rapid spasm (wild contractions) in muscle due to low Ca^{++} in body fluid is called:
(1) Fatigue (2) Tetany
(3) Arthritis (4) Muscular dystrophy

200. Which of the following is not applicable to red muscle fibres when compared to white muscle fibres:
(1) Contract slowly for longer duration
(2) Rich in mitochondria
(3) Accumulation of lactic acid in large amount
(4) Rich in myoglobin

Solution

108. (4)

The main functions of the root system are absorption of water and minerals from the soil, providing a proper anchorage to the plant parts, storing reserve food material and synthesis of plant growth regulators.

CLASS 11 NCERT Pg. No.66

109. (1)

Both Assertion & Reason are true and the reason is the correct explanation of the assertion

CLASS 11 NCERT Pg. No.35

110. (3)

* Actinomorphic– e.g.chilli mustard, *Datura.*
* Zygomorphic– e.g., pea, gulmohur, bean, *Cassia.*

CLASS 11 NCERT Pg. No.72

111. (1)

Both statements 1 and 2 are correct.

CLASS 11 NCERT Pg. No.31

112. (4)

Main plant body of bryophyte is haploid.

CLASS 11 NCERT Pg. No-35, 36.

113. (1)

* Epipetalous condition of stamen is present in Solanaceae
* Solanaceae –Tobacco.

CLASS 11 NCERT Pg. No.80

114. (3)

Valvate Aestivation.

CLASS 11 NCERT Pg. No.74

115. (3)

Seed bearing plants knows as Spermatophyta**.**

CLASS 11 NCERT Pg. 42

116. (4)

* Chilli – Cymose (Solanaceae family show cymose inflorescence)
* Pea – Zygomorphic
* *Datura* – Actinomorphic
* Mustard – Tetramerous

CLASS 11 NCERT Pg. No.79,80,81

117. (2)

Diplontic plants are gymnosperm and angiosperm.

* Double fertilization an event unique to angiosperms.

CLASS 11 NCERT Pg. 40, 42

118. (4)

One of the megaspores enclosed within the megasporangium develops into a multicellular female gametophyte that bears two or more archegonia or female sex organs. The multicellular female gametophyte is also retained within megasporangium.

CLASS 11 NCERT Pg. 39

119. (3)

The stems are unbranched (*Cycas*) or branched (*Pinus*, *Cedrus).*

CLASS 11 NCERT Pg. 38

120. (3)

* Fabaceae – Gram, *Arhar*, *Sunhemp*, Moong, Pea, *Lupin*.
* Liliaceae – Tulip, *Asparagus, Colchicine*, Onion
* Solanaceae – Chili, Tobacco.
* Brassicaceae – Mustard.

CLASS 11 NCERT Pg. No.79,80,81

121. (1)

Leaves of certain insectivorous plants such as pitcher plant, venus–fly trap are also modified leaves.

CLASS 11 NCERT Pg. No.71

122. (4)

The calyx is the outermost whorl of the flower and the members are called sepals. Generally, sepals are green, leaf like and protect the flower in the bud stage. The calyx may be gamosepalous (sepals united) or polysepalous (sepals free).

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123. (3)

* Pteridophyte classified into Psilopsida (*Psilotum*); Lycopsida (*Selaginella*, *Lycopodium*), Sphenopsida *(Equisetum)* and Pteropsida (*Dryopteris*, *Pteris*, *Adiantum*).
* Bryophytes –Bryopsid

CLASS 11 NCERT Pg. 38

124. (4)

Pneumatophores are respiratory roots.

Class 11th NCERT Pg. No.67

125. (3)

Syncarpous –when carpels are fused, as in mustard and tomato.

CLASS 11 NCERT Pg. No.75

126. (4)

If more than two leaves arise at a node and form a whorl, it is called whorled, as in *Alstonia*.

CLASS 11 NCERT Pg. No.71

127. (2)

* The development of pollen grains take place within the microsporangia.
* The cones bearing megasporophylls with ovules or megasporangia are called macrosporangiate or female strobili.

CLASS 11 NCERT Pg. 39

128. (4)

In epigynous flowers, the margin of thalamus grows upward enclosing the ovary completely and getting fused with it, the other parts of flower arise above the ovary. Hence, the ovary is said to be inferior as in flowers of guava and cucumber, and the ray florets of sunflower.

* Mustard-Hypogynous flower.

CLASS 11 NCERT Pg. No.73

129. (1)

The Pteridophytes include horsetails and ferns. Pteridophytes are used for medicinal purposes and as soil-binders. They are also frequently grown as ornamentals.

CLASS 11 NCERT Pg.36

130. (2)

When stamens are attached to the petals, they are epipetalous as in Solanaceae.

* Belladona and Chilli belongs to Solanaceae family.

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131. (2)

* Zygotic meiosis occur in *Volvox*
* *Fucus* shows diplontic life cycles
* In bryophytes dominant stage is gametophyte.
* In pteridophytes, the dominant phase is diploid sporophyte.
* Vascular plants are pteridophytes, gymnosperm and angiosperm but only gymnosperm and angiosperm are seed bearing plants.

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132. (4)

The cells proximal to this region undergo rapid elongation and enlargement and are responsible for the growth of the root in length. This region is called the region of elongation. The cells of the elongation zone gradually differentiate and mature.

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133. (4)

Solanaceae family.

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134. (3)

Reticulate venation is the characteristic of dicot.

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135. (3)

Chl a and Chl c and fucoxanthin.

* *Kelp* and *Ectocarpus* are brown algae

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136. (2)

* Stem tendrils which develop from axillary buds, are slender and spirally coiled and help plants to climb such as in gourds (cucumber, pumpkins, watermelon) and grapevines.
* Axillary buds of stems may also get modified into woody, straight and pointed thorns. Thorns are found in many plants such as *Citrus, Bougainvillea*

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137. (4)

If one margin of the appendage overlaps that of the next one and so on as in china rose, lady's finger and cotton, it is called twisted.

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138. (3)

Flowers in gulmohur are zygomorphic.

* Brassicaceae, Solanaceae and Liliaceae family shows actinomorphic symmetry.
* Fabaceae family shows zygomorphic symmetry**.**

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139. (2)

Root hairs are present in region of maturation.

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140. (4)

China rose flowers are

– Actinomorphic
– Hypogynous
– Twisted aestivation

CLASS 11 NCERT Pg. No.73,74

141. (1)
Giant redwood tree is *Sequoia.*
CLASS 11 NCERT Pg. 38

142. (2)
* Bryophytes are first terrestrial plant.
* Zygotes do not undergo reduction division immediately. They produce a multicellular body called a sporophyte

CLASS 11 NCERT Pg.34

143. (2)
* Sporophyte is not free-living but attached to the photosynthetic gametophyte and derives nourishment rom it.
* Sporophytes-Multicellular

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144. (1)
* Corm and *Rhizome* are stem modificaions.

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145. (1)
Many plants belonging to the family are sources of pulses (gram, *arhar*, sem, moong, soyabean; edible oil (soyabean, groundnut); dye *(Indigofera*); fibres *(sunhemp*); fodder (*Sesbania*, *Trifolium*), ornamentals (lupin, sweet pea); medicine *(muliathi*).
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146. (3)
Prop or pillar roots are found in banyan.
CLASS 11 NCERT Pg. No.67

147. (4)
A lateral branch with short internodes and each node bearing a rosette of leaves and a tuft of roots is found in aquatic plants like *Pistia and Eichhornia.*
CLASS 11 NCERT Pg. No.69

148. (3)
In coconut edible part is endosperm.
CLASS 11 NCERT Pg. No.76

149. (3)
All three are correct.
CLASS 11 NCERT Pg. No.36.38

150. (1)
An example of edible underground stem is corm.
* Carrot is example of modification of tap root.
* Tap roots of carrot, turnip and adventitious roots of sweet potato, get swollen and store food.

CLASS 11 NCERT Pg. No.68

(ZOOLOGY)

151. (3)
[NCERT Pg. No. -308]

152. (2)
[NCERT Pg. No. -311]

153. (4)
[NCERT Pg. No. - 304]

154. (3)
[NCERT Pg. No. -309]

155. (4)
NCERT Pg. No. - 309]

156. (2)
[NCERT Pg. No. - 309]

157. (4)
[NCERT Pg. No. - 311]

158. (1)
[NCERT Pg. No. -312]

159. (1)
[NCERT Pg. No. - 303]

160. (1)
[NCERT Pg. No. - 310]

161. (4)
[NCERT Pg. No. - 310]

162. (4)
[NCERT Pg. No. - 310]

163. (1)
[NCERT Pg. No. - 310]

164. (2)
[NCERT Pg. No. - 310]

165. (2)
[[NCERT Pg. No. - 310]

166. (1)
[NCERT Pg. No. - 310]

167. (3)
[NCERT Pg. No. - 308]

168. (3)
[NCERT Pg. No. - 306]

169. (3)
[NCERT Pg. No. - 310]

170. (4)
[NCERT Pg. No. - 312]

171. (3)
[NCERT Pg. No. - 310]

172. (3)
[NCERT Pg. No. - 312]

173. (3)
[NCERT Pg. No. - 311]

174. (2)
[NCERT Pg. No. - 311]

175. (3)
[NCERT Pg. No. - 308]

176. (3)
[NCERT Pg. No. - 306]

177. (1)
[NCERT Pg. No. - 307]

178. (2)
[NCERT Pg. No. - 311]

179. (3)
[NCERT Pg. No. - 309]

180. (1)
[NCERT Pg. No. – 310 & 311]

181. (2)
[NCERT Pg. No. - 311]

182. (3)
[NCERT Pg. No. - 303]

183. (3)
[NCERT Pg. No. - 303]

184. (4)
[NCERT Pg. No. - 312]

185. (4)
[NCERT Pg. No. - 306]

186. (1)
[NCERT Pg. No. - 304]

187. (4)
[NCERT Pg. No. - 311]

188. (2)
[NCERT Pg. No. - 304]

189. (3)
[NCERT Pg. No. - 311]

190. (1)
[NCERT Pg. No. - 312]

191. (1)
[NCERT Pg. No. - 305]

192. (1)
[NCERT Pg. No. - 303]

193. (1)
[NCERT Pg. No. - 303]

194. (3)
[NCERT Pg. No. - 312]

195. (2)
[NCERT Pg. No. - 307]

196. (4)
[NCERT –Pg. No.-311]

197. (3)
[NCERT Pg. No. - 312]

198. (4)
[NCERT Pg. No. - 311]

199. (2)
[NCERT Pg. No. - 312]

200. (3)
[NCERT Pg. No. - 308]