

107. The plastid that stores xanthophyll is known as _____.

- (1) amyloplast
- (2) chloroplast
- (3) chromoplast
- (4) aleuroplast

Answer (3)

108. In water, frogs respire using _____.

- (1) trachea
- (2) skin
- (3) buccal cavity
- (4) lungs

Answer (2)

109. Which of the following is **not** a characteristic of chordates?

- (1) Presence of post anal part (tail)
- (2) Presence of notochord
- (3) Central nervous system is dorsal
- (4) Absence of gills

Answer (4)

110. Smooth endoplasmic reticulum _____.

- (1) is a site for the synthesis of carbohydrates
- (2) has ribosomes attached to its surface
- (3) is the major site for the synthesis of lipids
- (4) is actively involved in protein synthesis

Answer (3)

111. Which of the following are characteristics of prokaryotic cells?

- (a) Ribosomes are made of 50S and 30S subunits
- (b) They can have plasmids
- (c) They contain mesosome
- (d) They have peroxisomes

Choose the **correct** answer from the options given below :

- (1) (a), (b) and (c) only
- (2) (b) and (c) only
- (3) (a) and (c) only
- (4) (a), (c) and (d) only

Answer (1)

112. Match **List-I** with **List-II**.

	List-I		List-II
A.	Cristae	I.	Flat membrane sacs in stroma of chloroplast
B.	Cisternae	II.	Infoldings in mitochondria
C.	Thylakoids	III.	Cell membrane
D.	Phospholipid	IV.	Disc shaped sacs in the Golgi apparatus

Choose the **correct** answer from the options given below:

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

Answer (3)

113. Which of the following statements related to pituitary gland are **correct**?

- (a) It is divided anatomically into adenohypophysis and neurohypophysis
- (b) It secretes follicle stimulating hormone
- (c) It secretes melanocyte stimulating hormone
- (d) It does not secrete prolactin

Choose the **correct** answer from the options given below :

- (1) (b) and (c) only
- (2) (a) and (b) only
- (3) (a), (b) and (c) only
- (4) (c) and (d) only

Answer (3)

114. Which of the following statements regarding photorespiration are correct?

- (a) Do not occur in C₃ plants
- (b) CO₂ is consumed and O₂ is generated
- (c) Phosphoglycolate is formed
- (d) No synthesis of ATP and NADPH

Choose the **correct** answer from the options given below:

- (1) (a) and (b) only
- (2) (a) and (d) only
- (3) (c) and (d) only
- (4) (b) and (d) only

Answer (3)

115. Which of the following statements is **incorrect**?

- (1) Fibrinogen is produced from fibrin
- (2) Blood coagulates in response to an injury
- (3) Blood clot consists of fibrins
- (4) Fibrin is produced from fibrinogen

Answer (1)

116. Arrange the following taxonomic categories in ascending order.

- | | |
|-------------|-------------|
| (a) Genus | (b) Class |
| (c) Order | (d) Phylum |
| (e) Family | (f) Kingdom |
| (g) Species | |

Choose the **correct** answer from the options given below :

- (1) (f), (c), (b), (g), (d), (e), (a)
- (2) (g), (a), (e), (c), (b), (d), (f)
- (3) (a), (c), (d), (g), (f), (b), (e)
- (4) (g), (c), (d), (b), (e), (a), (f)

Answer (2)

117. Select the correct sequence of experiments that led to a gradual understanding of photosynthesis in green plants.

- (1) Production of glucose → role of air → release of oxygen → absorption spectra of chlorophyll a and b
- (2) Absorption spectra of chlorophyll a and b → production of glucose → release of oxygen → role of air
- (3) Role of air → release of oxygen → production of glucose → absorption spectra of chlorophyll a and b
- (4) Release of oxygen → production of glucose → absorption spectra of chlorophyll a and b → role of air

Answer (3)

118. Match **List-I** with **List-II**.

	List-I		List-II
A.	Starch	I.	Fights infection
B.	Antibody	II.	Energy storage
C.	Concanavalin A	III.	Glucose transport
D.	Glut-4	IV.	Lectin

Choose the **correct** answer from the options given below :

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

Answer (3)

119. The number of vertebrae in a human is _____.

- (1) 206
- (2) 7
- (3) 12
- (4) 26

Answer (4)

120. Endomembrane system includes _____.

- (1) Golgi complex, chloroplast, peroxisomes and vacuole
- (2) endoplasmic reticulum, Golgi complex, lysosomes and vacuole
- (3) endoplasmic reticulum, chloroplast, peroxisomes and vacuole
- (4) mitochondria, chloroplast, peroxisomes and vacuole

Answer (2)

121. Length of the stem at time 0 is 20 cm. The arithmetic growth rate is 30 cm per day. What is the length of the stem at the end of the 7th day?

- (1) 460 cm
- (2) 50 cm
- (3) 170 cm
- (4) 230 cm

Answer (4)

122. Match **List-I** with **List-II**.

	List-I		List-II
A.	Spherical	I.	Vibrio
B.	Rod	II.	Cocci
C.	Comma	III.	Spirilla
D.	Spirillum	IV.	Bacilli

Choose the **correct** answer from the options given below :

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

Answer (1)

123. The number of action potentials generated by sino-atrial node (SAN) in a healthy human is _____ per minute.

- (1) 120 - 140
- (2) 28 - 30
- (3) 70 - 75
- (4) 100 - 110

Answer (3)

124. Match **List-I** with **List-II**.

	List-I		List-II
A.	Family	I.	Sapindales
B.	Genus	II.	Dicotyledonae
C.	Class	III.	Anacardiaceae
D.	Phylum	IV.	Angiospermae
E.	Order	V.	<i>Mangifera</i>

Choose the **correct** answer from the options given below :

- (1) A-III, B-V, C-II, D-IV, E-I
- (2) A-I, B-V, C-II, D-IV, E-III
- (3) A-II, B-I, C-III, D-IV, E-V
- (4) A-II, B-III, C-V, D-I, E-IV

Answer (1*) (Conceptual errata)

125. Which of the following is **not** a part of human central neural system?

- (1) Pericardium
- (2) Arachnoid
- (3) Dura mater
- (4) Pia mater

Answer (1)

126. Given below are two statements :

Statement I : Chromosomes are fully condensed at the end of prophase I.

Statement II : Meiosis I resembles mitosis.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (1) **Statement I** is incorrect, but **Statement II** is true
- (2) Both **Statement I** and **Statement II** are true
- (3) Both **Statement I** and **Statement II** are false
- (4) **Statement I** is correct, but **Statement II** is false

Answer (4)

127. Match **List-I** with **List-II**.

	List-I		List-II
A.	Marginal placentation	I.	<i>Argemone</i>
B.	Axile placentation	II.	Tomato
C.	Parietal placentation	III.	<i>Primrose</i>
D.	Free central placentation	IV.	Pea

Choose the **correct** answer from the options given below :

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

Answer (1)

128. Symbiotic association between fungi and algae are called _____.

- (1) chrysophytes
- (2) lichens
- (3) sponges
- (4) mycorrhiza

Answer (2)

129. Which of the following is **not** a prokaryote?

- (1) Fungi
- (2) Bacteria
- (3) Blue green algae
- (4) Mycoplasma

Answer (1)

130. Arrange the following elements in descending order of their contribution to percentage weight of the human body.

- (a) Oxygen
- (b) Carbon
- (c) Hydrogen
- (d) Nitrogen

Choose the **correct** answer from the options given below :

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

Answer (2)

131. Which one of the following statements is **incorrect**?

- (1) β -cells of pancreas secrete insulin
- (2) α -cells of pancreas secrete glucagon
- (3) α -cells of pancreas secrete insulin
- (4) Glucagon stimulates glycogenolysis

Answer (3)

132. Which of the following are characteristic features of Solanaceae family?
- Flowers are bisexual and actinomorphic
 - Calyx have five sepals and are united
 - Androecium have five stamens and are epipetalous
 - Ovary is inferior

Choose the **correct** answer from the options given below :

- (b), (c) and (d) only
- (a), (b) and (c) only
- (d) only
- (a) and (b) only

Answer (2)

133. Given below are two statements :

Statement I : When any plane passing through the central axis of the body divides the organism into two identical halves, it is called radial symmetry.

Statement II : In phylum Echinodermata, both adults and larvae are radially symmetrical.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- Statement I** is incorrect but **Statement II** is correct
- Both **Statement I** and **Statement II** are correct
- Both **Statement I** and **Statement II** are incorrect
- Statement I** is correct but **Statement II** is incorrect

Answer (4)

134. The correct sequence of adult cell cycle phases is _____.

- S-M-G₂-G₁
- G₁-G₂-S-M
- G₁-M-G₂-S
- G₁-S-G₂-M

Answer (4)

135. In frogs, the number of pairs of cranial nerves arising from the brain are _____.

- 12
- 6
- 9
- 10

Answer (4)

136. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R**.
Assertion A : In recombinant DNA technology, lysozyme is used for disrupting bacterial cells while cellulase is for plant cells.

Reason R : Isolation of genetic material needs disruption of cells.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (1) **A** is not correct but **R** is correct
- (2) Both **A** and **R** are correct and **R** is the correct explanation of **A**
- (3) Both **A** and **R** are correct but **R** is not the correct explanation of **A**
- (4) **A** is correct but **R** is not correct

Answer (2)

137. The method of directly of injecting a sperm into ovum in assisted reproductive technology is called :

- (1) Embryo transfer (ET)
- (2) Gamete intra fallopian transfer (GIFT)
- (3) Zygote intra fallopian transfer (ZIFT)
- (4) Intra cytoplasmic sperm injection (ICSI)

Answer (4)

138. Adaptive radiation in placental mammals and Australian Marsupials leading to similarity between distant species is an example of _____.

- (1) genetic drift
- (2) divergent evolution
- (3) convergent evolution
- (4) founder effect

Answer (3)

139. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R**.

Assertion A : In an experiment, Mendel observed that the F₁ progeny plants are all tall and none are dwarf.

Reason R : Stem height is a contrasting trait, with tall being dominant and dwarf being recessive.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (1) **A** is not correct but **R** is correct
- (2) Both **A** and **R** are correct and **R** is the correct explanation of **A**
- (3) Both **A** and **R** are correct but **R** is not the correct explanation of **A**
- (4) **A** is correct but **R** is not correct

Answer (2)

140. Arrange the following in descending order of number of species in the Amazonian rain forest.

- | | |
|-------------|-------------------|
| (a) Plants | (b) Birds |
| (c) Fishes | (d) Invertebrates |
| (e) Mammals | |

Choose the **correct** answer from the options given below :

- | | |
|---------------------------------|---------------------------------|
| (1) (b) > (a) > (d) > (c) > (e) | (2) (c) > (b) > (d) > (e) > (a) |
| (3) (d) > (a) > (c) > (b) > (e) | (4) (e) > (b) > (a) > (c) > (d) |

Answer (3)

141. Sponges exchange O_2 with CO_2 by _____.
- (1) gills
 - (2) simple diffusion over their entire body surfaces
 - (3) moist cuticle
 - (4) tracheal tubes

Answer (2)

142. For a person with blood group 'O', which of the following is **not** a possible combination of parents' blood group genotypes?
- (1) Father : $I^A I^B$ and Mother : $I^A i$
 - (2) Father : $I^A i$ and Mother : $I^B i$
 - (3) Father : $I^A i$ and Mother : $I^A i$
 - (4) Father : $I^B i$ and Mother : $I^B i$

Answer (1)

143. Given below are two statements :

Statement I : Modern *Homo sapiens* arose in Australia and moved across continents.

Statement II : *Homo sapiens* arose around 75000 to 10000 years ago.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (1) **Statement I** is incorrect but **Statement II** is correct
- (2) Both **Statement I** and **Statement II** are correct
- (3) Both **Statement I** and **Statement II** are incorrect
- (4) **Statement I** is correct but **Statement II** is incorrect

Answer (1)

144. Which of the following is used as an effective sedative and painkiller for treating post-surgery patients?
- (1) Anti-retroviral drugs
 - (2) Interferon
 - (3) Antibiotics
 - (4) Morphine

Answer (4)

145. Which of the following plant produces non-albuminous seeds?

- (1) Pea
- (2) Wheat
- (3) Maize
- (4) Barley

Answer (1)

146. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R**.

Assertion A : Abingdon tortoise in Galapagos islands became extinct within a decade after goats were introduced.

Reason R : Goats were more efficient at browsing than Abingdon tortoise.

In the light of the above statements, choose the **most appropriate** answer from the options given below:

- (1) **A** is not correct but **R** is correct
- (2) Both **A** and **R** are correct and **R** is the correct explanation of **A**
- (3) Both **A** and **R** are correct but **R** is not the correct explanation of **A**
- (4) **A** is correct but **R** is not correct

Answer (2)

147. The covering of ovum at ovulation is _____.

- (1) chorion
- (2) endometrium
- (3) zona radiata
- (4) zona pellucida

Answer (4)

148. Which of the following is used as a clot buster?

- (1) Statins
- (2) Streptokinase
- (3) Penicillin
- (4) Cyclosporin A

Answer (2)

149. Which of the following structure is **not** a part of the male reproductive system?

- (1) Infundibulum
- (2) Rete testis
- (3) Epididymis
- (4) Vasa efferentia

Answer (1)

150. Given below are two statements:

Statement I : Ovulation is caused by LH surge leading to rupture of Graafian follicles.

Statement II: Graafian follicle remaining after ovulation transform into corpus luteum and secretes large amount of estrogen.

In the light of the above statements, choose the **most appropriate** answer from the options given below:

- (1) **Statement I** is incorrect but **Statement II** is correct
- (2) Both **Statement I** and **Statement II** are correct
- (3) Both **Statement I** and **Statement II** are incorrect
- (4) **Statement I** is correct but **Statement II** is incorrect

Answer (4)

151. The opening between the right atrium and the right ventricle is guarded by _____.

- (1) sino-atrial node
- (2) bicuspid valve
- (3) tricuspid valve
- (4) semilunar valve

Answer (3)

152. Which of the following is **not** evidence for evolution?

- (1) Divergent evolution of anatomical structures such as forelimbs
- (2) Convergent evolution of traits like wings of birds and butterflies
- (3) Paleontological evidence from fossil records
- (4) Embryological support for evolution as proposed by Ernst Haeckel

Answer (2,4)

153. The inactive form of Bt toxin is converted to the active form in the insect gut _____
- (1) by nucleases
 - (2) due to alkaline pH
 - (3) due to acidic pH
 - (4) by proteases

Answer (2)

154. Colostrum, secreted by mother during initial days of lactation, is abundant in _____.
- (1) IgD
 - (2) IgG
 - (3) IgM
 - (4) IgA

Answer (4)

155. Which of the following in female gametophyte of an angiosperm helps in guiding the pollen tube for fertilizing the eggs?
- (1) Polar nucleus
 - (2) Antipodals
 - (3) Synergids
 - (4) Central cells

Answer (3)

156. Which of the following disease is **not** sexually transmitted?
- (1) Genital warts
 - (2) Syphilis
 - (3) Tuberculosis
 - (4) Gonorrhoea

Answer (3)

157. Which of the following statements about lac-operon is **correct**?
- (1) Galactose can act as an inducer of lac operon
 - (2) Gene *i* is constitutively expressed
 - (3) Lactose activates repressor to bind to the operator
 - (4) Genes *i*, *z*, *y* and *a* share single common promoter

Answer (2)

158. Match **List-I** with **List-II**.

	List-I		List-II
A.	Transformation	I.	Restriction enzyme
B.	Cloning site	II.	Transfer DNA to host bacteria
C.	Selection	III.	Replication
D.	Ori	IV.	Antibiotic

Choose the **correct** answer from the options given below:

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

Answer (2)

159. A population of diploid organisms is at Hardy-Weinberg equilibrium. If the frequency of allele A is 0.1, the frequency of AA is _____.
- (1) 0.99 (2) 0.01
(3) 0.02 (4) 0.10

Answer (2)

160. Sperm motility is due to _____.
- (1) muscular movement
(2) flagellar movement
(3) ciliary movement
(4) amoeboid movement

Answer (2)

161. Consider a population of 10 million cells. Given the per-capita birth rate of 0.002 (per unit time) and the per-capita death rate of 0.002 (per unit time), the expected number of cells after 10 generations is _____.
- (1) 100 million
(2) 1 million
(3) 5 million
(4) 10 million

Answer (4)

162. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R**.
- Assertion A** : Forelimbs of human and bats are homologous.
Reason R : Forelimbs of humans and bats have similar anatomical structure.
- In the light of the above statements, choose the **most appropriate** answer from the options given below.
- (1) **A** is false but **R** is true
(2) Both **A** and **R** are correct and **R** is the correct explanation of **A**
(3) Both **A** and **R** are true, but **R** is not the correct explanation of **A**
(4) **A** is true but **R** is false

Answer (2)

163. Muscle contraction is initiated by a signal sent by the central nervous system by the release of _____ .
- (1) cyclic adenine monophosphate
(2) acetyl choline
(3) acetyl coenzyme A
(4) cyclic guanine monophosphate

Answer (2)

164. Which of the following hormone is **not** secreted by human placenta?
- (1) LH
(2) hCG
(3) Estrogen
(4) Progesterone

Answer (1)

165. Which of the following statements is **correct** about *Plasmodium*?

- (1) Fertilization takes place in mosquito gut
- (2) Reproduces sexually in liver cells
- (3) Reproduces sexually in RBCs
- (4) Gametocytes develop in mosquito gut

Answer (1)

166. Which of the following are primary consumers in a food chain?

- (1) Carnivores
- (2) Parasites
- (3) Predators
- (4) Herbivores

Answer (4)

167. Which of the following statements about the reabsorption process in Henle's loop are **correct**?

- (a) The descending limb of Henle's loop is permeable to water but almost impermeable to electrolytes.
- (b) Urine gets concentrated in Henle's loop.
- (c) Reabsorption of Na^+ and water takes place in Henle's loop.
- (d) Active or passive transport of electrolytes occurs in the ascending limb of Henle's loop.

Choose the **correct** answer from the options given below:

- | | |
|---------------------------|---------------------------|
| (1) (a), (b) and (d) only | (2) (a) and (b) only |
| (3) (b), (c) and (d) only | (4) (a), (b) and (c) only |

Answer (*)

168. Given below are two statements : one is labelled as **Assertion A** and the other is labelled as **Reason R**.

Assertion A : The logistic growth model of populations is considered more realistic than the exponential growth model.

Reason R : Resources are finite.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (1) **A** is not correct but **R** is correct
- (2) Both **A** and **R** are correct and **R** is the correct explanation of **A**
- (3) Both **A** and **R** are correct but **R** is not the correct explanation of **A**
- (4) **A** is correct but **R** is not correct

Answer (2)

169. Which of the following is the **correct** order of arrangement of vertebrate column from the head to toe?

- (1) Cervical vertebra, thoracic vertebra, lumbar vertebra, sacrum
- (2) Cervical vertebra, thoracic vertebra, sacrum, lumbar vertebra
- (3) Sacrum, lumbar vertebra, thoracic vertebra, cervical vertebra
- (4) Cervical vertebra, lumbar vertebra, thoracic vertebra, sacrum

Answer (1)

170. Match List-I with List-II.

	List-I		List-II
A.	Both species are harmed	I.	Predation
B.	One species is harmed and the other is benefited	II.	Mutualism
C.	Both species are benefited	III.	Competition
D.	One is benefited while the other has no effect	IV.	Commensalism

Choose the **correct** answer from the options given below:

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

Answer (1)

171. If the diploid chromosome number of typical angiosperm is 36, what would be the chromosome number in its endosperm?

- (1) 72
- (2) 18
- (3) 36
- (4) 54

Answer (4)

172. Which of the following enzymes synthesizes precursor mRNA?

- (1) DNA polymerase
- (2) RNA polymerase I
- (3) RNA polymerase II
- (4) RNA polymerase III

Answer (3)

Sol. The RNA polymerase II transcribes precursor of mRNA, the heterogeneous nuclear RNA (hnRNA)

173. Given below are two statements :

Statement I : Plasmids are autonomously replicating DNA.

Statement II : Plasmids are extrachromosomal DNA.

In the light of the above statements, choose the **most appropriate** answer from the options given below :

- (1) **Statement I** is incorrect but **Statement II** is correct
- (2) Both **Statement I** and **Statement II** are correct
- (3) Both **Statement I** and **Statement II** are incorrect
- (4) **Statement I** is correct but **Statement II** is incorrect

Answer (2)

174. How many theca are present in each lobe of a typical bilobed angiosperm anther ?

- (1) 12
- (2) 2
- (3) 6
- (4) 8

Answer (2)

175. Natural selection can lead to _____.
- (a) stabilisation (b) genetic drift
(c) directional change (d) disruption

Choose the **correct** answer from the options given below :

- (1) (a) and (c) only
(2) (a) only
(3) (a), (c) and (d) only
(4) (a), (b), (c) and (d)

Answer (3)

176. Which of the following statements are **Correct** ?
- (a) Energy flow from producers to consumers is unidirectional
(b) Energy pyramid can never be inverted
(c) Transfer of energy follows the 1% law

Choose the **correct** answer from the options given below :

- (1) (b) and (c) only
(2) (a), (b) and (c)
(3) (a) and (b) only
(4) (a) and (c) only

Answer (3)

177. Match **List-I** with **List-II**.

List-I

- (A) Excess growth hormone
(B) Luteinizing hormone
(C) Vasopressin
(D) Oxytocin

List-II

- (I) Reabsorption of water and electrolytes in kidney
(II) Contraction of uterus during child birth
(III) Acromegaly
(IV) Ovulation

Choose the **correct** answer from the options given below:

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

Answer (3)

178. Which of the following are secondary lymphoid organs?
- (a) Bone marrow (b) Tonsils
(c) Spleen (d) Thymus

Choose the correct answer from the options given below:

- (1) (a) and (d) only (2) (a) and (b) only
(3) (b) and (c) only (4) (b) and (d) only

Answer (3)

179. During PCR, primers bind to the DNA strands in the _____ step.
- (1) ligation (2) denaturation
(3) extension (4) annealing

Answer (4)

180. Given below are two statements :

Statement I : Down's syndrome is caused by the absence of one of the X-chromosomes.

Statement II : Turner's syndrome is caused by the presence of an additional copy of the chromosomes.

In the light of the above statements, choose the **correct** answer from the options given below :

- (1) **Statement I** is incorrect but **Statement II** is correct
(2) Both **Statement I** and **Statement II** are correct
(3) Both **Statement I** and **Statement II** are incorrect
(4) **Statement I** is correct but **Statement II** is incorrect

Answer (3)

