

91. Which one of the following is wrong for fungi?

- (1) They are eukaryotic.
- (2) All fungi possess a purely cellulose cell wall.
- (3) They are heterotrophic.
- (4) They are both unicellular and multicellular.

92. Methanogens belong to

- (1) Eubacteria
- (2) Archaeobacteria
- (3) Dinoflagellates
- (4) Slime moulds

93. Select the wrong statement.

- (1) The walls of diatoms are easily destructible.
- (2) 'Diatomaceous earth' is formed by the cell walls of diatoms.
- (3) Diatoms are chief producers in the oceans.
- (4) Diatoms are microscopic and float passively in water.

94. The label of a herbarium sheet does not carry information on

- (1) date of collection
- (2) name of collector
- (3) local names
- (4) height of the plant

95. Conifers are adapted to tolerate extreme environmental conditions because of

- (1) broad hardy leaves
- (2) superficial stomata
- (3) thick cuticle
- (4) presence of vessels

96. Which one of the following statements is wrong?

- (1) Algae increase the level of dissolved oxygen in the immediate environment.
- (2) Algin is obtained from red algae, and carrageenan from brown algae.
- (3) Agar-agar is obtained from *Gelidium* and *Gracilaria*.
- (4) *Laminaria* and *Sargassum* are used as food.

97. The term 'polyadelphous' is related to

- (1) gynoecium
- (2) androecium
- (3) corolla
- (4) calyx

98. How many plants among *Indigofera*, *Sesbania*, *Salvia*, *Allium*, *Aloe*, mustard, groundnut, radish, gram and turnip have stamens with different lengths in their flowers?

- (1) Three
- (2) Four
- (3) Five
- (4) Six

99. Radial symmetry is found in the flowers of

- (1) *Brassica*
- (2) *Trifolium*
- (3) *Pisum*
- (4) *Cassia*

100. Free-central placentation is found in

- (1) *Dianthus*
- (2) *Argemone*
- (3) *Brassica*
- (4) *Citrus*

101. Cortex is the region found between

- (1) epidermis and stele
- (2) pericycle and endodermis
- (3) endodermis and pith
- (4) endodermis and vascular bundle

102. The balloon-shaped structures called tyloses

- (1) originate in the lumen of vessels
- (2) characterize the sapwood
- (3) are extensions of xylem parenchyma cells into vessels
- (4) are linked to the ascent of sap through xylem vessels

103. A non-proteinaceous enzyme is

- (1) lysozyme
- (2) ribozyme
- ✓ (3) ~~ligase~~
- (4) deoxyribonuclease

104. Select the **mismatch**.

- (1) Gas vacuoles—Green bacteria
- ✓ (2) Large central vacuoles—Animal cells
- (3) Protists—Eukaryotes
- (4) Methanogens—Prokaryotes

105. Select the **wrong** statement.

- (1) Bacterial cell wall is made up of peptidoglycan.
- ✓ (2) Pili and fimbriae are mainly involved in motility of bacterial cells.
- (3) Cyanobacteria lack flagellated cells.
- (4) *Mycoplasma* is a wall-less microorganism.

106. A cell organelle containing hydrolytic enzymes is

- ✓ (1) lysosome
- (2) microsome
- (3) ribosome
- (4) mesosome

107. During cell growth, DNA synthesis takes place in

- (1) S phase
- (2) G₁ phase
- (3) G₂ phase
- (4) M phase

108. Which of the following biomolecules is common to respiration-mediated breakdown of fats, carbohydrates and proteins?

- (1) Glucose-6-phosphate
- (2) Fructose 1,6-bisphosphate
- (3) Pyruvic acid
- (4) Acetyl CoA

109. A few drops of sap were collected by cutting across a plant stem by a suitable method. The sap was tested chemically. Which one of the following test results indicates that it is phloem sap?

- (1) Acidic
- (2) Alkaline
- (3) Low refractive index
- (4) Absence of sugar

110. You are given a tissue with its potential for differentiation in an artificial culture. Which of the following pairs of hormones would you add to the medium to secure shoots as well as roots?

- (1) IAA and gibberellin
- ✓ (2) Auxin and cytokinin
- (3) Auxin and abscisic acid
- (4) Gibberellin and abscisic acid

Phytochrome is a

- (1) flavoprotein
- (2) glycoprotein
- (3) lipoprotein
- ✓ (4) ~~chromoprotein~~

112. Which is essential for the growth of root tip?

- ✓ (1) Zn
- (2) Fe
- (3) Ca
- (4) Mn

113. The process which makes major difference between C₃ and C₄ plants is

- (1) glycolysis
- (2) Calvin cycle
- ✓ (3) photorespiration
- (4) respiration

114. Which one of the following statements is **not** correct?

- (1) Offspring produced by the asexual reproduction are called clone.
- ✓ (2) Microscopic, motile asexual reproductive structures are called zoospores.
- (3) In potato, banana and ginger, the plantlets arise from the internodes present in the modified stem.
- (4) Water hyacinth, growing in the standing water, drains oxygen from water that leads to the death of fishes.

115. Which one of the following generates new genetic combinations leading to variation?

- (1) Vegetative reproduction
- (2) Parthenogenesis
- (3) Sexual reproduction
- (4) Nucellar polyembryony

116. Match **Column—I** with **Column—II** and select the correct option using the codes given below

Column—I

- a. Pistils fused together
- b. Formation of gametes
- c. Hyphae of higher Ascomycetes
- d. Unisexual female flower

Column—II

- (i) Gametogenesis
- (ii) Pistillate
- (iii) Syncarpous
- (iv) Dikaryotic

Codes :

- | | a | b | c | d |
|-----|-------|-------|------|-------|
| (1) | (iv) | (iii) | (i) | (ii) |
| (2) | (ii) | (i) | (iv) | (iii) |
| (3) | (i) | (ii) | (iv) | (iii) |
| (4) | (iii) | (i) | (iv) | (ii) |

117. In majority of angiosperms

- (1) egg has a filiform apparatus
- (2) there are numerous antipodal cells
- (3) reduction division occurs in the megaspore mother cells
- (4) a small central cell is present in the embryo sac

118. Pollination in water hyacinth and water lily is brought about by the agency of

- (1) water
- (2) insects or wind
- (3) birds
- (4) bats

119. The ovule of an angiosperm is technically equivalent to

- (1) megasporangium
- (2) megasporophyll
- (3) megaspore mother cell
- (4) megaspore

120. Taylor conducted the experiments to prove semiconservative mode of chromosome replication on

- (1) *Vinca rosea*
- (2) *Vicia faba*
- (3) *Drosophila melanogaster*
- (4) *E. coli*

121. The mechanism that causes a gene to move from one linkage group to another is called

- (1) inversion
- (2) duplication
- (3) translocation
- (4) crossing-over

122. The equivalent of a structural gene is

- (1) muton
- (2) cistron
- (3) operon
- (4) recon

A true breeding plant is

- (1) one that is able to breed on its own
- (2) produced due to cross-pollination among unrelated plants
- (3) near homozygous and produces offspring of its own kind
- (4) always homozygous recessive in its genetic constitution

124. Which of the following rRNAs acts as structural RNA as well as ribozyme in bacteria?

- (1) 5 S rRNA
- (2) 18 S rRNA
- (3) 23 S rRNA
- (4) 5.8 S rRNA

125. stirred-tank bioreactors have been designed for

- (1) purification of product
- (2) addition of preservatives to the product
- (3) availability of oxygen throughout the process
- (4) ensuring anaerobic conditions in the culture vessel

A foreign DNA and plasmid cut by the same restriction endonuclease can be joined to form a recombinant plasmid using

- (1) *Eco* RI
- (2) *Taq* polymerase
- (3) polymerase III
- (4) ligase

127. Which of the following is **not** a component of downstream processing?

- (1) Separation
- (2) Purification
- (3) Preservation
- (4) Expression

128. Which of the following restriction enzymes produces blunt ends?

- (1) *Sal* I
- (2) *Eco* RV
- (3) *Xho* I
- (4) *Hind* III

129. Which kind of therapy was given in 1990 to a four-year-old girl with adenosine deaminase (ADA) deficiency?

- (1) Gene therapy
- (2) Chemotherapy
- (3) Immunotherapy
- (4) Radiation therapy

130. How many hot spots of biodiversity in the world have been identified till date by Norman Myers?

- (1) 17
- (2) 25
- (3) 34
- (4) 43

131. The primary producers of the deep-sea hydrothermal vent ecosystem are

- (1) green algae
- (2) chemosynthetic bacteria
- (3) blue-green algae
- (4) coral reefs

132. Which of the following is **correct** for *r*-selected species?

- (1) Large number of progeny with small size
- (2) Large number of progeny with large size
- (3) Small number of progeny with small size
- (4) Small number of progeny with large size

133. If '+' sign is assigned to beneficial interaction, '-' sign to detrimental and '0' sign to neutral interaction, then the population interaction represented by '+ -' refers to

- (1) mutualism
- (2) amensalism
- (3) commensalism
- (4) parasitism

134. Which of the following is **correctly** matched?

- (1) Aerenchyma—*Opuntia*
- (2) Age pyramid—Biome
- (3) *Parthenium hysterophorus*—Threat to biodiversity
- (4) Stratification—Population

135. Red List contains data or information on

- (1) all economically important plants
- (2) plants whose products are in international trade
- (3) threatened species
- (4) marine vertebrates only

136. Which of the following sets of diseases is caused by bacteria?

- (1) Cholera and tetanus
- (2) Typhoid and smallpox
- (3) Tetanus and mumps
- (4) Herpes and influenza

137. Match Column-I with Column-II for housefly classification and select the correct option using the codes given below :

Column-I	Column-II
a. Family	(i) Diptera
b. Order	(ii) Arthropoda
c. Class	(iii) Muscidae
d. Phylum	(iv) Insecta

Codes :

- | | a | b | c | d |
|-----|-------|-------|------|-------|
| (1) | (iii) | (i) | (iv) | (ii) |
| (2) | (iii) | (ii) | (iv) | (i) |
| (3) | (iv) | (iii) | (ii) | (i) |
| (4) | (iv) | (ii) | (i) | (iii) |

138. Choose the correct statement.

- (1) All mammals are viviparous.
- (2) All cyclostomes do not possess jaws and paired fins.
- (3) All reptiles have a three-chambered heart.
- (4) All Pisces have gills covered by an operculum.

139. Study the four statements (A-D) given below and select the two correct ones out of them :

- A. Definition of biological species was given by Ernst Mayr.
- B. Photoperiod does not affect reproduction in plants.
- C. Binomial nomenclature system was given by R. H. Whittaker.
- D. In unicellular organisms, reproduction is synonymous with growth.

The two correct statements are

- (1) B and C
- (2) C and D
- (3) A and D
- (4) A and B

140. In male cockroaches, sperms are stored in which part of the reproductive system?

- (1) Seminal vesicles
- (2) Mushroom glands
- (3) Testes
- (4) Vas deferens

141. Smooth muscles are

- (1) involuntary, fusiform, non-striated
- (2) voluntary, multinucleate, cylindrical
- (3) involuntary, cylindrical, striated
- (4) voluntary, spindle-shaped, uninucleate

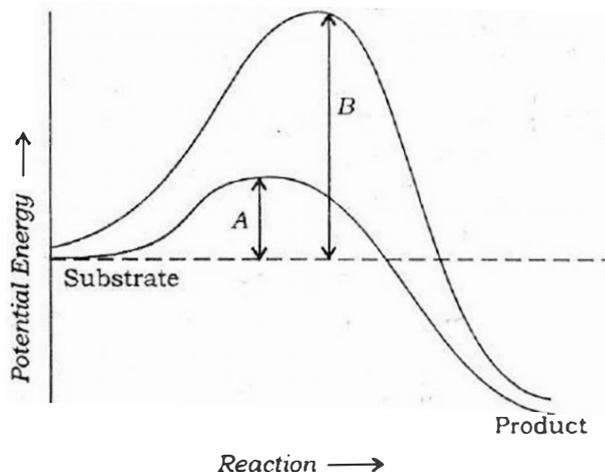
142. Oxidative phosphorylation is

- (1) formation of ATP by transfer of phosphate group from a substrate to ADP
- (2) oxidation of phosphate group in ATP
- (3) addition of phosphate group to ATP
- (4) formation of ATP by energy released from electrons removed during substrate oxidation

143. Which of the following is the least likely to be involved in stabilizing the three-dimensional folding of most proteins?

- (1) Hydrogen bonds
- (2) Electrostatic interaction
- (3) Hydrophobic interaction
- (4) Ester bonds

144. Which of the following describes the given graph correctly?



- (1) Endothermic reaction with energy A in presence of enzyme and B in absence of enzyme
- (2) Exothermic reaction with energy A in presence of enzyme and B in absence of enzyme
- (3) Endothermic reaction with energy A in absence of enzyme and B in presence of enzyme
- (4) Exothermic reaction with energy A in absence of enzyme and B in presence of enzyme

145. When cell has stalled DNA replication fork, which checkpoint should be predominantly activated?

- (1) G₁/S
- (2) G₂/M
- (3) M
- (4) Both G₂/M and M

146. Match the stages of meiosis in **Column—I** to their characteristic features in **Column—II** and select the correct option using the codes given below :

Column—I	Column—II
a. Pachytene	(iv) Pairing of homologous chromosomes
b. Metaphase I	(ii) Terminalization of chiasmata
c. Diakinesis	(iii) Crossing-over takes place
d. Zygotene	(iv) Chromosomes align at equatorial plate

Codes :

a	b	c	d
(1) (iii)	(iv)	(ii)	(i)
(2) (i)	(iv)	(ii)	(iii)
(3) (ii)	(iv)	(iii)	(i)
(4) (iv)	(iii)	(ii)	(i)

147. Which hormones do stimulate the production of pancreatic juice and bicarbonate?

- (1) Angiotensin and epinephrine
- (2) Gastrin and insulin
- (3) Cholecystokinin and secretin
- (4) Insulin and glucagon

148. The partial pressure of oxygen in the alveoli of the lungs is

- (1) equal to that in the blood
- (2) more than that in the blood
- (3) less than that in the blood
- (4) less than that of carbon dioxide

149. Choose the **correct** statement.

- (1) Nociceptors respond to changes in pressure.
- (2) Meissner's corpuscles are thermo-receptors.
- (3) Photoreceptors in the human eye are depolarized during darkness and become hyperpolarized in response to the light stimulus.
- (4) Receptors do not produce graded potentials.

150. Graves' disease is caused due to

- (1) hyposecretion of thyroid gland
- (2) hypersecretion of thyroid gland
- (3) hyposecretion of adrenal gland
- (4) hypersecretion of adrenal gland

151. Name the ion responsible for unmasking of active sites for myosin for cross-bridge activity during muscle contraction.

- (1) Calcium
- (2) Magnesium
- (3) Sodium
- (4) Potassium

152. Name the blood cells, whose reduction in number can cause clotting disorder, leading to excessive loss of blood from the body.

- (1) Erythrocytes
- (2) Leucocytes
- (3) Neutrophils
- (4) Thrombocytes

153. Name a peptide hormone which acts mainly on hepatocytes, adipocytes and enhances cellular glucose uptake and utilization.

- (1) Insulin
- (2) Glucagon
- (3) Secretin
- (4) Gastrin

154. Osteoporosis, an age-related disease of skeletal system, may occur due to

- (1) immune disorder affecting neuro-muscular junction leading to fatigue
- (2) high concentration of Ca^{++} and Na^+
- (3) decreased level of estrogen
- (4) accumulation of uric acid leading to inflammation of joints

155. Serum differs from blood in

- (1) lacking globulins
- (2) lacking albumins
- (3) lacking clotting factors
- (4) lacking antibodies

156. Lungs do not collapse between breaths and some air always remains in the lungs which can never be expelled because

- (1) ~~there is~~ a negative pressure in the lungs
- (2) there is a negative intrapleural pressure pulling at the lung walls
- (3) there is a positive intrapleural pressure
- (4) pressure in the lungs is higher than the atmospheric pressure

157. The posterior pituitary gland is ~~not a 'true'~~ endocrine gland because

- (1) s provided with a duct
- (2) it only stores and releases hormones
- (3) it is under the regulation of hypothalamus
- (4) it secretes enzymes

158. The part of nephron involved in active reabsorption of sodium is

- (1) distal convoluted tubule
- (2) proximal convoluted tubule
- (3) Bowman's capsule
- (4) descending limb of Henle's loop

159. Which of the following is hormone-releasing IUD?

- (1) LNG-20
- (2) Multiload 375
- (3) Lippes loop
- (4) Cu7

160. Which of the following is incorrect regarding vasectomy?

- (1) No sperm occurs in seminal fluid
- (2) No sperm occurs in epididymis
- (3) Vasa deferentia is cut and tied
- (4) Irreversible sterility

161. Embryo with more than 16 blastomeres formed due to *in vitro* fertilization is transferred into

- (1) uterus
- (2) fallopian tube
- (3) fimbriae
- (4) cervix

162. Which of the following depicts the correct pathway of transport of sperms?

- (1) Rete testis → Efferent ductules → Epididymis → Vas deferens
- (2) Rete testis → Epididymis → Efferent ductules → Vas deferens
- (3) Rete testis → Vas deferens → Efferent ductules → Epididymis
- (4) Efferent ductules → Rete testis → Vas deferens → Epididymis

163. Match Column-I with Column-II and select the correct option using the codes given below

Column-I

- a. Mons pubis
- b. Antrum
- c. Trophoblast
- d. Nebenkern

Column-II

- (i) Embryo formation
- (ii) Sperm
- (iii) Female external genitalia
- (iv) Graafian follicle

Codes :

- | | a | b | c | d |
|-----|-------|------|-------|------|
| (1) | (iii) | (iv) | (ii) | (i) |
| (2) | (iii) | (iv) | (i) | (ii) |
| (3) | (iii) | (i) | (iv) | (ii) |
| (4) | (i) | (iv) | (iii) | (ii) |

164. Several hormones like hCG, hPL, estrogen, progesterone are produced by

- (1) ovary
- (2) placenta
- (3) fallopian tube
- (4) pituitary

165. If a colour-blind man marries a woman who is homozygous for normal colour vision, the probability of their son being colour-blind is

- (1) 0
- (2) 0.5
- (3) 0.75
- (4) 1

166. Genetic drift operates in

- (1) small isolated population
- (2) large isolated population
- (3) non-reproductive population
- (4) slow reproductive population

167. In Hardy-Weinberg equation, the frequency of heterozygous individual is represented by

- (1) p^2
- (2) $2pq$
- (3) pq
- (4) q^2

168. The chronological order of human evolution from early to the recent is

- (1) *Australopithecus* → *Ramapithecus* → *Homo habilis* → *Homo erectus*
- (2) *Ramapithecus* → *Australopithecus* → *Homo habilis* → *Homo erectus*
- (3) *Ramapithecus* → *Homo habilis* → *Australopithecus* → *Homo erectus*
- (4) *Australopithecus* → *Homo habilis* → *Ramapithecus* → *Homo erectus*

169. Which of the following is the correct sequence of events in the origin of life?

- I. Formation of protobionts
 - II. Synthesis of organic monomers
 - III. Synthesis of organic polymers
 - IV. Formation of DNA-based genetic systems
- (1) I, II, III, IV
 - (2) I, III, II, IV
 - (3) II, III, I, IV
 - (4) II, III, IV, I

170. A molecule that can act as a genetic material must fulfill the traits given below, **except**

- (1) it should be able to express itself in the form of 'Mendelian characters'
- (2) it should be able to generate its replica
- (3) it should be unstable structurally and chemically
- (4) it should provide the scope for slow changes that are required for evolution

171. DNA-dependent RNA polymerase catalyzes transcription on one strand of the DNA which is called the

- (1) template strand
- (2) coding strand
- (3) alpha strand
- (4) antistrand

172. Interspecific hybridization is the mating of

- (1) animals within same breed without having common ancestors
- (2) two different related species
- (3) superior males and females of different breeds
- (4) more closely related individuals within same breed for 4-6 generations

173. Which of the following is **correct** regarding AIDS causative agent HIV?

- (1) HIV is enveloped virus containing one molecule of single-stranded RNA and one molecule of reverse transcriptase.
- (2) HIV is enveloped virus that contains two identical molecules of single-stranded RNA and two molecules of reverse transcriptase.
- (3) HIV is unenveloped retrovirus.
- (4) HIV does not escape but attacks the acquired immune response.

174. Among the following edible fishes, which one is a marine fish having rich source of omega-3 fatty acids?

- (1) Mystus
- (2) Mangur
- (3) Mrigala
- (4) Mackerel

75. Match **Column-I** with **Column-II** and select the correct option using the codes given below :

Column-I	Column-II
a. Citric acid	(i) <i>Trichoderma</i>
b. Cyclosporin A	(ii) <i>Clostridium</i>
c. Statins	(iii) <i>Aspergillus</i>
d. Butyric acid	(iv) <i>Monascus</i>

Codes :

	a	b	c	d
(1)	(iii)	(i)	(ii)	(iv)
(2)	(iii)	(i)	(iv)	(ii)
(3)	(i)	(iv)	(ii)	(iii)
(4)	(iii)	(iv)	(i)	(ii)

76. Biochemical Oxygen Demand (BOD) may **not** be a good index for pollution for water bodies receiving effluents from

- (1) domestic sewage
- (2) dairy industry
- (3) petroleum industry
- (4) sugar industry

177. The principle of competitive exclusion was stated by

- (1) C. Darwin
- (2) G. F. Gause
- (3) MacArthur
- (4) Verhulst and Pearl

178. Which of the following National Parks is home to the famous musk deer or hangul?

- (1) Keibul Lamjao National Park, Manipur
- (2) Bandhavgarh National Park, Madhya Pradesh
- (3) Eaglenest Wildlife Sanctuary, Arunachal Pradesh
- (4) Dachigam National Park, Jammu & Kashmir

179. A lake which is rich in organic waste may result in

- (1) increased population of aquatic organisms due to minerals
- (2) drying of the lake due to algal bloom
- (3) increased population of fish due to lots of nutrients
- (4) mortality of fish due to lack of oxygen

180. The highest DDT concentration in aquatic food chain shall occur in

- (1) phytoplankton
- (2) seagull
- (3) crab
- (4) eel

NATIONAL ELIGIBILITY CUM ENTRANCE TEST-2016

Answer Key Phase- II (AA,PP,WW)

QN	Ans		QN	Ans		QN	Ans		QN	Ans
1	1		46	3		91	2		136	1
2	4		47	2		92	2		137	1
3	3		48	1		93	1		138	2
4	1		49	3		94	4		139	3
5	3		50	2		95	3		140	1
6	2		51	1		96	2		141	1
7	3		52	2		97	2		142	4
8	3		53	4		98	2		143	4
9	2		54	2		99	1		144	2
10	1		55	3		100	1		145	2
11	2		56	1		101	1		146	1
12	2		57	4		102	3		147	3
13	2		58	2		103	2		148	2
14	2		59	1		104	2		149	3
15	2		60	3		105	2		150	2
16	2		61	3		106	1		151	1
17	4		62	2		107	1		152	4
18	2		63	4		108	4		153	1
19	2		64	3		109	2		154	3
20	4		65	3		110	2		155	3
21	2		66	2		111	4		156	2
22	4		67	9		112	3		157	2
23	2		68	3		113	3		158	2
24	3		69	4		114	3		159	1
25	4		70	3		115	3		160	2
26	3		71	4		116	4		161	1
27	2		72	3		117	3		162	1
28	2		73	2		118	2		163	2
29	1		74	3		119	1		164	2
30	3		75	2		120	2		165	1
31	4		76	4		121	3		166	1
32	3		77	1		122	2		167	2
33	1		78	4		123	3		168	2
34	4		79	3		124	3		169	3
35	3		80	3		125	3		170	3
36	2		81	3		126	4		171	1
37	2		82	3		127	4		172	2
38	4		83	4		128	2		173	2
39	1		84	3		129	1		174	4
40	4		85	2		130	3		175	2
41	3		86	3		131	2		176	3
42	4		87	2		132	1		177	2
43	2		88	1		133	4		178	4
44	1		89	2		134	3		179	4
45	3		90	1		135	3		180	2

**9 - All Candidates awarded 04 Marks*

1. 04 Mrks have been awarded for each correct response

2. For each incorrect response, one (01) mark has been deducted.