[]JIPMER MBBS Entrance Question Paper – 2017

BIOLOGY

121. One of the breeding techniques useful to eliminate harmful recessive genes by selection is

(a) artificial insemination

(b) outbreeding

(c) inbreeding

(d) MOET

Answer: (c)

122. Herbicide that blocks electron transport from PS-II to PS-I by inhibiting electron flow between plastoquinone → cytochrome is

(a) DCMU

(b) Paraquat

(c) DCPIP

(d) None of these

Answer: (a)

123. **Statement** I Microtubules are formed only in animals cells.

Statement II Microtubules are made up of a protein called myosin.

Choose the correct option

(a) Statement I is correct and statement II is incorrect.

(b) Statement II is correct and statement I is incorrect.

(c) Both statements are correct.

(d) Both statements are incorrect.

Answer: (d)

124. Some functions of nutrient element are given below

(I) Important constituent of proteins involved in ETS.

(II) Activator of catalase.

(III) Important constituent of cytochrome..

(IV) Essential for chlorophyll synthesis.

The concerned nutrient is

(a) Cu

(b) Fe

(c) Ca

(d) Mo

Answer: (b)

125. Torsion of visceral mass is seen in animals belonging to class

(a) Cephalopoda

(b) Scaphopoda

(c) Amphineura

(d) Gastropoda

Answer: (d)

126. A plant is provided with ideal conditions for photosynthesis and supplied with isotope 14 CO_2. When the products of the process are analyzed carefully, what would be the nature of products?

(a) Glucose and oxygen are labelled

(b) Oxygen is labelled, but glucose is normal

(c) Glucose and oxygen are normal

(d) Glucose is labelled, but oxygen is normal

Answer: (d)

127. Match the following columns,

Column I	Column II
A. Sacral nerves	1. 1 Pair
B. Thoraic nerves	2. 8 Pairs
C. Cocygeal nerves	3. 7 Pairs
D. Cervical nerves	4. 12 Pairs
	5. 5 Pairs

(a) A – 4; B – 1; C – 3; D – 2

(b) A – 5; B – 3; C – 1; D – 2

(c) A – 5; B – 4; C – 1; D – 2

(d) A – 2; B – 5; C – 3; D – 1

Answer: (c)

128. Pick the hormone which is not secreted by human placenta.

(a) hCG

(b) hPL

(c) Prolactin

(d) Oestrogen

Answer: (c)

129. Fixation of one CO_2 molecule through Calvin cycle requires.

(a) 1 ATP and $2NADPH_2$

(b) 2 ATP and $2NADPH_2$

(c) 3ATP and $2NADH_2$

(d) 2ATP and $1NADPH_2$

Answer: (c)

130. Oxygen dissociation curve of haemoglobin is

(a) sigmoid

(b) hyperbolic

(c) linear

(d) hypobolic

Answer: (a)

131. A hormone, secreted by the endocrinal cells of duodenal mucosa which influences the release of pancreatic juice is

(a) relaxin

(b) cholecystokinin

(c) secretin

(d) progesterone

Answer: (b)

132. Cotyledons and testa are edible parts of

(a) ground nut and pomegranate

(b) walnut and tamarind

(c) french bean and coconut

(d) cashew nut and litchi

Answer: (a)

133. Intrinsic and extrinsic pathways of blood clotting are interlinked at the activation steps of which of the following factors?

(a) Factor IX

(b) Factor IV

(c) Factor X

(d) Factor XIII-a

Answer: (c)

134. Match the storage products listed under column I with the organism given under column II, choose the appropriate option from the given options

Column I	Column II
A. Glycogen	1. *Sargassum*
B. Pyrenoids	2. *Nostoc*
C. Laminarin and mannitol	3. *Polysiphonia*
D. Floridean starch	4. *Spirogyra*
	5. *Agaricus*

(a) A – 3; B – 4; C – 1; D – 5

(b) A – 4; B – 3; C – 5; D – 2

(c) A – 5; B – 4; C – 1; D – 3

(d) A – 2; B – 1; C – 4; D – 3

Answer: (c)

135. With respect to angiosperms, identify the incorrect pair from the following

(a) antipodal-2n

(b) vegetative all of male gametophyte – n

(c) primary endosperm nucleus – 3n

(d) cell of nucellus of ovule – 2n

Answer: (a)

136. The globular head of myosin contains

(a) calcium ions in large quantities

(b) troponin

(c) ATPase enzyme

(d) ATP

Answer: (c)

137. Parbhani Kranti, a variety of bhindi (lady finger) is resistant to

(a) bacterial blight

(b) yellow mosaic virus

(c) black rot

(d) leaf curl

Answer: (b)

138. Gastrula is the embryonic stage in which

(a) cleavage occurs

(b) blastocoels forms

(c) germinal layers form

(d) villi form

Answer: (c)

139. Dense regular connective tissue is present in

(a) ligament and tendons

(b) joint capsule and Wharton's Jelly

(c) periosteum and endosteum

(d) pericardium and heart valves

Answer: (a)

140. Minisatellites or VNTR's are used in

(a) DNA fingerprinting

(b) Polymerase Chain Reaction, (PCR)

(c) gene therapy

(d) gene mapping

Answer: (a)

141. Note the following features and choose the ones applicable to *Wuchereriabancrofti*.

(I) Coelozoic parasite

(II) Histozoic parasite

(III) Monogenetic parasite

(IV) Digenetic parasite

(V) Monomorphic, acoelomate parasite

(VI) Dimorphic, pseudocoelomate paraiste

(a) II, III, V

(b) II, III, VI

(c) II, IV, VI

(d) I, III, VI

Answer: (c)

142. hnRNA undergoes two additional process. Out of them in one process an unusual nucleotide (methyl GPT) is added to the 5' end of What would you called this?

(a) Tailing

(b) Splicing

(c) Termination

(d) Capping

Answer: (d)

143. Which type of immunoglobin is/are abundantly found in foetus?

(a) IgE

(b) IgG

(c) IgM

(d) IgD

Answer: (b)

144. IUCN stands for

(a) Indian Union for Conservation of Nature

(b) International Union for Conservation of Nature

(c) International Union for Chemical Nomenclature

(d) International Union for Conservation for Nutrients

Answer: (b)

145. The secretory phase in the human menstrual cycle is also called as

(a) luteal phase and last for about 6 days

(b) follicular phase lasting for about 6 days

(c) luteal phase and last for about 13 days

(d) follicular phase and last for about 13 days

Answer: (c)

146. Which one of the following statements is correct?

(a) Hard outer layer of pollen is called intine

(b) Sporogenous tissue is haploid

(c) Endothelium produces the microspores

(d) Tapetum nourishes the developing pollen

Answer: (d)

147. Variation in gene frequencies within population can occur by chance rather than by natural selection. This is reffered to as

(a) genetic flow

(b) genetic drift

(c) random mating

(d) genetic load

Answer: (b)

148. The first stable product of fixation of atmospheric nitrogen in leguminous plant is

(a) NO_2^-

(b) ammonia

(c) NO_3^-

(d) glutamate

Answer: (b)

149. If two persons with 'AB' blood group marry and have sufficiently large number of children, these children could be classified as 'A' blood group. 'AB blood group 'B' blood group in 1 : 2 : 1 ratio.

Modern technique of protein electrophoresis reveals presence of both 'A' and 'B' type proteins in 'AB' blood group individuals. This is an example of

(a) codominance

(b) incomplete dominance

(c) partial dominance

(d) complete dominance

Answer: (a)

150. Which of the following DNA sequences qualifies to be designated as a palindrome?

(a) 5'-GACCAG-3' in one strand

(b) 3'-GACCAG-5' in one strand

(c) 5'-GACGAG-3', 3'-CIGGIC-5'

(d) 5'-AGCGCT-3', 3'-TCGCGA-5'

Answer: (d)

151. Which one of the following pairs is not correctly matched?

(a) Vitamin-B_{12} : Pernicious anaemia

(b) Vitamin-B_6 : Loss of appetite

(c) Vitamin-B_1 : Beri-beri

(d) Vitamin-B_2: Pellagra

Answer: (d)

152. Humoral immunity is mediated by

(a) R-cells

(b) T-cells

(c) NK-cells

(d) plasma cells

Answer: (d)

153. In the lac operon model, lactose molecules function as

(a) inducers, which bind with the operator gene

(b) repressors, which bind with the operator gene

(c) inducers, which bind with the repressor protein

(d) corepressors, which bind with repressor protein

Answer: (c)

154. Which one of the following generally acts as an antagonist to gibberellins?

(a) Zeatin

(b) Ethylene

(c) ABA

(d) IAA

Answer: (c)

155. The *ornithine* cycle removes two waste products from the blood in liver. These products are

(a) CO_2 and urea

(b) ammonia and urea

(c) CO_2 and ammonia

(d) ammonia and uric acid

Answer: (b)

156. Macromolecule chitin is

(a) nitrogen containing polysaccharide

(b) phosphorous containing polysaccharide

(c) sulphur containing polysaccharide

(d) simple polysaccharide

Answer: (a)

157. Which of the following statement is correct in relation to the endocrine system?

(a) Adenohypophysis is under diriect neural regulation of the hypothalamus

(b) Organs in the body like gastro-intestinal tract, heart, kidney and liver do not produce any hormones

(c) Non-nutrient chemical produced by the body in trace amount that act as inter-cellular messanger are known as hormones

(d) Releasing and inhibitory hormones are produced by the pituitary gland

Answer: (c)

158. Following are the two statements regarding the origin of life.

(I) The earliest organisms that appeared on the earth were non-green and presumably anaerobes.

(II) The first autotrophic organisms were the chemoautotrophs that never released oxygen of the above statements which one of the following options is correct?

(a) II is correct, but I is false

(b) Both I and II are correct

(c) Both I and II are false

(d) I is correct, but II is false

Answer: (b)

159. Taxonomic key is one of the taxonomic tools in the identification and classification of plants and animals. It is used in the preparation of

(a) monographs

(b) flora

(c) Both (a) and (b)

(d) None of these

Answer: (b)

160. Match the following columns.

Column I	Column II
A. Pinocytosis	1. *Euglena gracilis*
B. Holozoic	2. *Paramecium*
C. Parasitic	3. *Amoeba proteus*
D. Mixotrophic	4. *Monocystis*

(a) A – 3; B – 2; C – 4; D – 1

(b) A – 2; B – 3; C – 4; D – 1

(c) A – 4; B – 3; C – 1; D – 2

(d) A – 1; B – 4; C – 2; D – 3

Answer: (a)

161. Phellogen and phellem respectively denote

(a) cork and cork cambium

(b) cork cambium and cork

(c) secondary cortex and cork

(d) cork and secondary cortex

Answer: (b)

Which one of the following combinations is incorrect?

(a) Rio convention : Air pollution

(b) Kyoto protocol : Climatechange

(c) Montreal protocol : Ozone depletion

(d) Ramsar convention : Wetlandconservation

Answer: (a)

162. 'Organ of Jacobson' helpsin

(a) touch

(b) vision

(c) smell

(d) hearing

Answer: (c)

163. Which one correctly describe reproduction and life cycle of fern?

(a) Spore → Gamete → Prothallus → Sporophyte

(b) Gamete → Spore → Prothallus → Plant

(c) Prothallus → Sporophyte → Gamete → Fern

(d) Sporangia → Spore → Prothallus → Sporophyte → Plant

Answer: (d)

164. Monoclonal antibodies and polyclonal antibodies are produced by

(a) T-memory cells

(b) NK-cells

(c) plasma cells of B-lymphocytes

(d) memory cells of B-lymphocytes

Answer: (c)

165. All monerons

(a) contain DNA and RNA

(b) demonstrate a long circular strand of DNA, not formed enclosed in a nuclear membrane

(c) are bacteria

(d) All of the above

Answer: (d)

166. Match the following columns

Column I	Column II
A. *Opuntia*	1. Stem thorns
B. *Asparagus*	2. Phylloclades
C. *Citrus*	3. Cladodes

(a) A – 1; B – 2; C – 3

(b) A – 2; B – 3; C – 1

(c) A – 3; B – 2; C – 1

(d) A – 2; B – 1; C – 3

Answer: (b)

167. The chromosome in which centromere is situated close to one end are

(a) metacentric

(b) acrocentric

(c) telocentric

(d) sub-metacentric

Answer: (b)

168. Sliding filament theory can be best explained as

(a) when myofilaments slide pass each other actin filaments shorten while myosin filament donot shorten

(b) actin myosin filament shorten and slide pass each

other

(c) actin and myosin filaments do not shorten, but rather slide pass each other

(d) when myofilament slide pass each other myosin filament shorten while actin filament do not shorten

Answer: (b)

169. Select the correct combination of statements regarding Myasthenia gravis

(I) It is an auto immune disorder.

(II) It causes insufficient acetylecholine binding that effects muscular contraction.

(III) Antibodies are developed against acetylcholine.

(IV) Antibodies are developed against acetylcholine receptors.

(V) It causes drooping of eyelids.

(a) I, III, IV, VI

(b) I, III, V, II

(c) I, II, IV, VI

(d) II, III, IV, V

Answer: (c)

170. Study the following statements and select the option with correct statements.

(I) Pulvinus leaf base is present in some leguminous plants.

(II) In *Eichhornia* the petioles expand, becomes green and synthesise food.

(III) Opposite phyllotaxy is seen in guava.

(a) I and II

(b) I and III

(c) II and III

(d) I, II and III

Answer: (b)

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

(a) GIFT

(b) ZIFT

(c) ICSI

(d) ET

Answer: (c)

172. Appearance of antibiotic resistant bacteria is an example of

(a) adaptive radiation

(b) transduction

(c) pre-existing variation

(d) divergent evolution in the population

Answer: (c)

173. Post mitotic gap phase is characterized by all, except

(a) synthesis of RNA and nucleotides

(b) no change in DNA content

(c) synthesis of histone proteins

(d) growth phase of the cell

Answer: (c)

174. Munch hypothesis is based on

(a) translocation of food due to Turgor Pressure (TP) gradient and imbibitions force

(b) translocation of food due to Turgor Pressure (TP) gradient

(c) translocation of food due to imbition force

(d) None of the above

Answer: (b)

175. Match the following columns

Column I	**Column II**
(A) Molecular oxygen	(1) α-ketoglutaric acid
(B) Electron acceptor	(2) Hydrogen acceptor
(C) Pyruvate dehydrogenase	(3) Cytochrome-C
(D) Decarboxylation	(4) Acetyle Co-A

(a) A – 2; B – 3; C – 4; D – 1

(b) A – 3; B – 4; C – 2; D – 1

(c) A – 2; B – 1; C – 3; D – 4

(d) A – 4; B – 3; C – 1; D – 2

Answer: (a)

176. Roquefort cheese is ripended by using a

(a) type of yeast

(b) fungus

(c) bacterium

(d) cyanobacteria

Answer: (b)

177. Identify the wrong combination

(a) *Dryopteris* : Rhizome

(b) *Cycas* : Corralloid roots

(c) *Volvox* : Colonial form

(d) *Marchantia* : Pseudoelaters

Answer: (d)

178. Foramen ovale

(a) connects the two atria in the foetal heart.

(b) is a condition in which the heart valves do not completely close

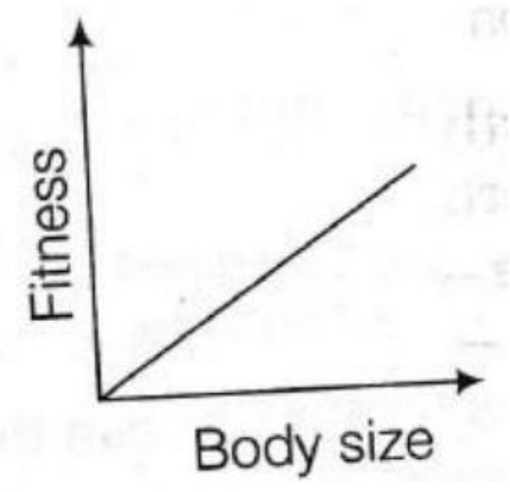
(c) is a shallow depression in the inter ventricular septum

(d) is a connection between the pulmonary trunk and the aorta in the foetus

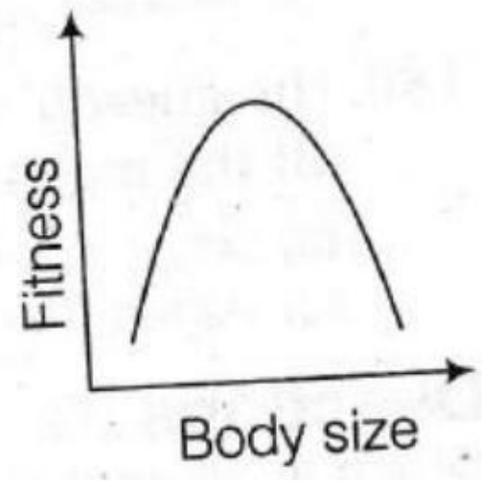
Answer: (a)

179. Which one of the following graphs correctly describes disruptive selection? When studying fitness level associated with body size?

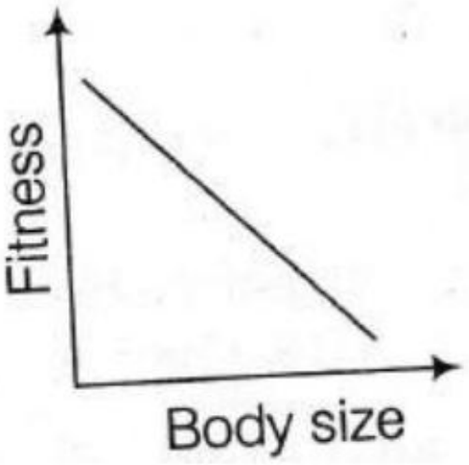
(a)



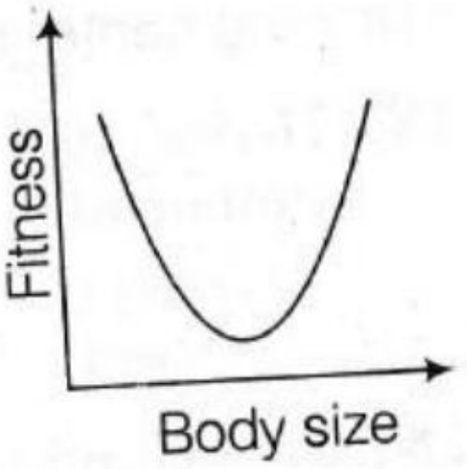
(b)



(c)



(d)



Answer: (d)