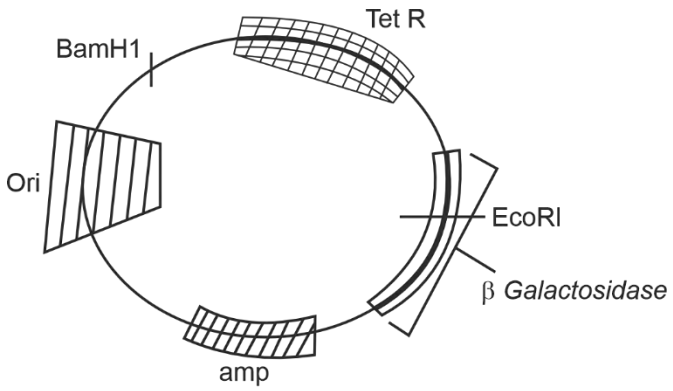
BIOLOGY

91.



In the above represented plasmid, an alien piece of DNA is inserted at EcoRI site. Which of the following strategies will be chosen to select the recombinant colonies?

(1) White color colonies will be selected.

(2) Blue color colonies grown on ampicillin plates can be selected.

(3) Using ampicillin & tetracyclin containing medium plate.

(4) Blue color colonies will be selected.

Answer (1)

92. The protein portion of an enzyme is called:

(1) Apoenzyme

(2) Prosthetic group

(3) Cofactor

(4) Coenzyme

Answer (1)

93. Given below are two statements:

Statement I : The primary source of energy in an ecosystem is solar energy.

Statement II : The rate of production of organic matter during photosynthesis in an ecosystem is called net primary productivity (NPP).

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

(1) Statement I is correct but statement II is incorrect

(2) Statement I is incorrect but statement II is correct

(3) Both statement I and statement II are correct

(4) Both statement I and statement II are incorrect

Answer (1)

94. Given below are two statements : One is labelled as **Assertion (A)** and the other is labelled as **Reason (R).**

Assertion (A) : A typical unfertilised, angiosperm embryo sac at maturity is 8 nucleate and 7-celled.

Reason (R) : The egg apparatus has 2 polar nuclei.

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

(1) **A** is true but **R** is false

(2) **A** is false but **R** is true

(3) Both **A** and **R** are true and **R** is the correct explanation of **A**

(4) Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**

Answer (1)

95. Neoplastic characteristics of cells refer to :

A. A mass of proliferating cell

B. Rapid growth of cells

C. Invasion and damage to the surrounding tissue

D. Those confined to original location

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

(1) A, B, D only

(2) B, C, D only

(3) A, B only

(4) A, B, C only

Answer (4)

96. Which one of the following is the characteristic feature of gymnosperms.

(1) Seeds are absent

(2) Gymnosperms have flowers for reproduction

(3) Seeds are enclosed in fruits

(4) Seeds are naked

Answer (4)

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

	List-I		**List-II**
A.	Progesterone	I.	Pars intermedia
B.	Relaxin	II.	Ovary
C.	Melanocyte stimulating hormone	III.	Adrenal Medulla
D.	Catecholamines	IV.	Corpus luteum

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

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

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

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

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

Answer (3)

98. Which chromosome in the human genome has the highest number of genes?

(1) Chromosome 1

(2) Chromosome 10

(3) Chromosome X

(4) Chromosome Y

Answer (1)

99. Which of the following statements about RuBisCo is true

(1) It is an enzyme involved in the photolysis of water

(2) It catalyzes the carboxylation of RuBP

(3) It is active only in the dark

(4) It has higher affinity for oxygen than carbon dioxide

Answer (2)

100. The first menstruation is called :

(1) Diapause

(2) Ovulation

(3) Menopause

(4) Menarche

Answer (4)

101. Which of the following genetically engineered organisms was used by Eli Lilly to prepare human insulin?

(1) Virus

(2) Phage

(3) Bacterium

(4) Yeast

Answer (3)

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

Assertion (A) : All vertebrates are chordates but all chordates are not vertebrate.

Reason (R) : The members of subphylum vertebrata possess notochord during the embryonic period, the notochord is replaced by cartilaginous or bony vertebral column in adults.

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

(1) **A** is true but **R** is false

(2) **A** is false but **R** is true

(3) Both **A** and **R** are true and **R** is the correct explanation of **A**

(4) Both **A** and **R** are true but **R** is **not** the correct explanation of **A**

Answer (3)

103. What is the main function of the spindle fibers during mitosis?

(1) To repair damaged DNA

(2) To regulate cell growth

(3) To separate the chromosomes

(4) To synthesize new DNA

Answer (3)

104. Match **List I** with **List II**:

	List-I		**List-II**
A.	Alfred Hershey and Martha Chase	I.	Streptococcus pneumoniae
B.	Euchromatin	II.	Densely packed and dark-stained
C.	Frederick Griffith	III.	Loosely packed and light-strained
D.	Heterochromatin	IV.	DNA as genetic material confirmation

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

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

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

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

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

Answer (1)

105. Match **List I** with **List II**:

	List-I		**List-II**
A.	Adenosine	I.	Nitrogen base
B.	Adenylic acid	II.	Nucleotide
C.	Adenine	III.	Nucleoside
D.	Alanine	IV.	Amino acid

Choose the option with all **correct** matches.

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

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

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

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

Answer (1)

106. In frog, the Renal portal system is a special venous connection that acts to link :

(1) Kidney and intestine

(2) Kidney and lower part of body

(3) Liver and intestine

(4) Liver and kidney

Answer (2)

107. Which of the following are the post-transcriptional events in an eukaryotic cell?

A. Transport of pre-mRNA to cytoplasm prior to splicing.

B. Removal of introns and joining of exons.

C. Addition of methyl group at 5’ end of hnRNA.

D. Addition of adenine residues at 3' end of hnRNA.

E. Base pairing of two complementary RNAs.

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

(1) B, C, E only

(2) C, D, E only

(3) A, B, C only

(4) B, C, D only

Answer (4)

108. Polymerase chain reaction (PCR) amplifies DNA following the equation.

(1) $2n + 1$

(2) $2N^2$

(3) N^2

(4) 2^n

Answer (4)

109. Given below are two statements : One is labelled as **Assertion (A)** and the other is labelled as **Reason (R)**.

Assertion (A) : Both wind and water pollinated flowers are not very colourful and do not produce nectar.

Reason (R) : The flowers produce enormous amount of pollen grains in wind and water pollinated flowers.

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

(1) **A** is true but **R** is false

(2) **A** is false but **R** is true

(3) Both **A** and **R** are true and **R** is the correct explanation of **A**

(4) Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**

Answer (4)

110. Epiphytes that are growing on a mango branch is an example of which of the following?

(1) Predation

(2) Amensalism

(3) Commensalism

(4) Mutualism

Answer (3)

111. Find the correct statement :

(A) In human pregnancy, the major organ systems are formed at the end of 12 weeks.

(B) In human pregnancy the major organ systems are formed at the end of 8 weeks.

(C) In human pregnancy heart is formed after one month of gestation.

(D) In human pregnancy, limbs and digits develop by the end of second month.

(E) In human pregnancy the appearance of hair is usually observed in the fifth month.

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

(1) B, C, D and E only

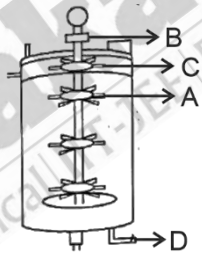
(2) A, C, D and E only

(3) A and E only

(4) B and C only

Answer (2)

112. Identify the part of a bio-reactor which is used as a foam braker from the given figure.



(1) D

(2) C

(3) A

(4) B

Answer (2)

113. Frogs respire in water by skin and buccal cavity and on land by skin, buccal cavity and lungs.

Choose the **correct** answer from the following :

(1) The statement is false for water but true for land

(2) The statement is false for both the environment

(3) The statement is true for water but false for land

(4) The statement is true for both the environment

Answer (1)

114. Consider the following statements regarding function of adrenal medullary hormones :

(A) It causes pupilary constriction.

(B) It is a hyperglycemic hormone.

(C) It causes piloerection.

(D) It increases strength of heart contraction.

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

(1) A, C and D only

(2) D only

(3) C and D only

(4) B, C and D only

Answer (4)

115. Read the following statements on plant growth and development.

(A) Parthenocarpy can be induced by auxins.

(B) Plant growth regulators can be involved in promotion as well as inhibition of growth.

(C) Dedifferentiation is a pre-requisite for re-differentation.

(D) Abscisic acid is a plant growth promoter.

(E) Apical dominance promotes the growth of lateral buds.

Choose the option with all correct statements.

(1) A, D, E only

(2) B, D, E only

(3) A, B, C only

(4) A, C, E only

Answer (3)

116. Which of the following hormones released from the pituitary is actually synthesized in the hypothalamus?

(1) Follicle-stimulating hormone (FSH)

(2) Adrenocorticotropic hormone (ACTH)

(3) Luteinizing hormone (LH)

(4) Anti-diuretic hormone (ADH)

Answer (4)

117. Which of the following is an example of non-distilled alcoholic beverage produced by yeast?

(1) Beer

(2) Rum

(3) Whisky

(4) Brandy

Answer (1)

118. What is the pattern of inheritance for polygenic trait?

(1) Autosomal dominant pattern

(2) X-linked recessive inheritance pattern

(3) Mendelian inheritance pattern

(4) Non-mendelian inheritance pattern

Answer (4)

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

	List - I		**List - II**
A.	Head	(i)	Enzymes
B.	Middle piece	(ii)	Sperm motility
C.	Acrosome	(iii)	Energy
D.	Tail	(iv)	Genetic material

Choose the correct answer from the options given below :

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

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

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

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

Answer (3)

120. Which of the following is an example of a zygomorphic flower?

(1) Pea

(2) Chilli

(3) *Petunia*

(4) *Datura*

Answer (1)

121. Which of following organisms **cannot** fix nitrogen?

A. *Azotobacter*

B. *Oscillatoria*

C. *Anabaena*

D. *Volvox*

E. *Nostoc*

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

(1) B only

(2) E only

(3) A only

(4) D only

Answer (4)

122. Which one of the following is an example of ex-situ conservation?

(1) Zoos and botanical gardens

(2) Protected areas

(3) National Park

(4) Wildlife Sanctuary

Answer (1)

123. Who is known as the father of Ecology in India?

(1) Ram Udar

(2) Birbal Sahni

(3) S.R. Kashyap

(4) Ramdeo Misra

Answer (4)

124. Given below are two statements :

Statement I : In the RNA world, RNA is considered the first genetic material evolved to carry out essential life processes. RNA acts as a genetic material and also as a catalyst for some important biochemical reactions in living systems. Being reactive, RNA is unstable.

Statement II : DNA evolved from RNA and is a more stable genetic material. Its double helical strands being complementary, resist changes by evolving repairing mechanism.

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

(1) Statement I is correct but statement II is incorrect

(2) Statement I is incorrect but statement II is correct

(3) Both statement I and statement II are correct

(4) Both statement I and statement II are incorrect

Answer (3)

125. Given below are two statements :

Statement I : Transfer RNAs and ribosomal RNA do not interact with mRNA.

Statement II : RNA interference (RNAi) takes place in all eukaryotic organisms as a method of cellular defence.

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

(1) Statement I is correct but statement II is incorrect

(2) Statement I is incorrect but statement II is correct

(3) Both statement I and statement II are correct

(4) Both statement I and statement II are incorrect

Answer (2)

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

	List-I		List-II
A.	Heart	(i)	Erythropoietin
B.	Kidney	(ii)	Aldosterone
C.	Gastro-interstinal tract	(iii)	Atrial natriuretic factor
D.	Adrenal Cortex	(iv)	Secretin

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

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

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

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

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

Answer (2)

127. All living members of the class Cyclostomata are :

(1) Symbiotic

(2) Ectoparasite

(3) Free living

(4) Endoparasite

Answer (2)

128. Streptokinase produced by *bacterium Streptococcus* is used for

(1) Liver disease treatment

(2) Removing clots from blood vessels

(3) Curd production

(4) Ethanol production

Answer (2)

129. Role of the water vascular system in Echinoderms is :

A. Respiration and Locomotion

B. Excretion and Locomotion

C. Capture and transport of food

D. Digestion and Respiration

E. Digestion and Excretion

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

(1) B and C Only

(2) B, D and E Only

(3) A and B Only

(4) A and C Only

Answer (4)

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

	List-I		List-II
A.	Pteridophyte	(i)	*Salvia*
B.	Bryophyte	(ii)	*Ginkgo*
C.	Angiosperm	(iii)	*Polytrichum*
D.	Gymnosperm	(iv)	*Salvinia*

Choose the option with all **correct** matches.

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

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

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

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

Answer (4)

131. Which are correct:

A. Computed tomography and magnetic resonance imaging detect cancers of internal organs.

B. Chemotherapeutics drugs are used to kill non-cancerous cells.

C. α -interferon activate the cancer patients' immune system and helps in destroying the tumour.

D. Chemotherapeutic drugs are biological response modifiers.

E. In the case of leukaemia blood cell counts are decreased.

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

(1) C and D only

(2) A and C only

(3) B and D only

(4) D and E only

Answer (2)

132. What are the potential drawbacks in adoption of the IVF method?

A. High fatality risk to mother

B. Expensive instruments and reagents

C. Husband/wife necessary for being donors

D. Less adoption of orphans

E. Not available in India

F. Possibility that the early embryo does not survive

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

(1) A, B, C, D only

(2) A, B, C, E, F only

(3) B, D, F only

(4) A, C, D, F only

Answer (3)

133. Consider the following :

A. The reductive division for the human female gametogenesis starts earlier than that of the male gametogenesis.

B. The gap between the first meiotic division and the second meiotic division is much shorter for males compared to females.

C. The first polar body is associated with the formation of the primary oocyte.

D. Luteinizing Hormone (LH) surge leads to disintegration of the endometrium and onset of menstrual bleeding.

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

(1) B and D are true

(2) B and C are true

(3) A and B are true

(4) A and C are true

Answer (3)

134. In bryophytes, the gemmae help in which one of the following?

(1) Nutrient absorption

(2) Gaseous exchange

(3) Sexual reproduction

(4) Asexual reproduction

Answer (4)

135. Given below are two statements : one is labelled as **Assertion (A)**, and the other is labelled as **Reason (R)**.

Assertion (A) : The primary function of the Golgi apparatus is to package the materials made by the endoplasmic reticulum and deliver it to intracellular targets and outside the cell.

Reason (R) : Vesicles containing materials made by the endoplasmic reticulum fuse with the cis face of the Golfi apparatus, and they are modified and released from the trans face of the Golgi apparatus.

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

(1) **A** is true but **R** is false

(2) **A** is false but **R** is true

(3) Both **A** and **R** are true and **R** is the correct explanation of **A**

(4) Both **A** and **R** are true but **R** is not the correct explanation of **A**

Answer (4)

136. Which one of the following statements refers to Reductionist Biology?

(1) Chemical approach to study and understand living organisms

(2) Behavioural approach to study and understand living organisms

(3) Physico-chemical approach to study and understand living organisms

(4) Physiological approach to study and understand living organisms

Answer (3)

137. After maturation, in primary lymphoid organs, the lymphocytes migrate for interaction with antigens to secondary lymphoid organ(s) / tissue(s) like

A. thymus

B. bone marrow

C. spleen

D. lymph nodes

E. Peyer's patches

Choose the *correct* answer from the options given below

(1) E, A, B only

(2) C, D, E only

(3) B, C, D only

(4) A, B, C only

Answer (2)

138. Match **List I** with **List II**:

	List I		**List I**
A.	The Evil Quartet	I.	Cryopreservation
B.	Ex situ conservation	II.	Alien species invasion
C.	*Lantana camara*	III.	Causes of biodiversity losses
D.	Dodo	IV.	Extinction

Choose the option with all correct matches.

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

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

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

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

Answer (4)

139. How many meiotic and mitotic divisions need to occur for the development of a mature female gametophyte from the megaspore mother cell in an angiosperm plant?

(1) 1 Meiosis and 3 Mitosis

(2) No Meiosis and 2 Mitosis

(3) 2 Meiosis and 3 Mitosis

(4) 1 Meiosis and 2 Mitosis

Answer (1)

140. Which of the following type of immunity is present at the time of birth and is a non-specific type of defence in the human body?

(1) Cell-mediated Immunity
(2) Humoral Immunity
(3) Acquired Immunity
(4) Innate Immunity

Answer (4)

141. Given below are two statements :

Statement I : Fig fruit is a non-vegetarian fruit as it has enclosed fig wasps in it.

Statement II : Fig wasp and fig tree exhibit mutual relationship as fig wasp completes its life cycle in fig fruit and fig fruit gets pollinated by fig wasp.

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

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

Answer (4)

142. Given below are two statements : One is labelled as **Assertion (A)** and other is labelled as **Reason (R)**.

Assertion (A) : Cells of the tapetum possess dense cytoplasm and generally have more than one nucleus.

Reason (R) : Presence of more than one nucleus in the tapetum increases the efficiency of nourishing the developing microspore mother cells.

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

(1) **A** is true but **R** is false
(2) **A** is false but **R** is true
(3) Both **A** and **R** are true and **R** is the correct explanation of **A**
(4) Both **A** and **R** are true but **R** is **NOT** the correct explanation of **A**

Answer (1)

143. From the statements given below choose the **correct** option :

A. The eukaryotic ribosomes are 80S and prokaryotic ribosomes are 70S.
B. Each ribosome has two sub-units.
C. The two sub-units of 80S ribosome are 60S and 40S while that of 70S are 50S and 30S.
D. The two sub-units of 80S ribosome are 60S and 20S and that of 70S are 50S and 20S.
E. The two sub-units of 80S are 60S and 30S and that of 70S are 50S and 30S.

(1) A, B, E are true
(2) B, D, E are true
(3) A, B, C are true
(4) A, B, D are true

Answer (3)

144. Which one of the following enzymes contains 'Haem' as the prosthetic group?

(1) Succinate dehydrogenase
(2) Catalase
(3) RuBisCo
(4) Carbonic anhydrase

Answer (2)

145. What is the name of the blood vessel that carries deoxygenated blood from the body to the heart in a frog?

(1) Pulmonary vein
(2) Vena cava
(3) Aorta
(4) Pulmonary artery

Answer (2)

146. Given below are the stages in the life cycle of pteridophytes. Arrange the following stages in the correct sequence.

A. Prothallus stage
B. Meiosis in spore mother cells
C. Fertilisation
D. Formation of archegonia and antheridia in gametophyte.
E. Transfer of antherozoids to the archegonia in presence of water.

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

(1) D, E, C, A, B
(2) E, D, C, B, A
(3) B, A, D, E, C
(4) B, A, E, C, D

Answer (3)

147. The blue and white selectable markers have been developed which differentiate recombinant colonies from non-recombinant colonies on the basis of their ability to produce colour in the presence of a chromogenic substrate.

Given below are two statements about this method:

Statement I : The blue coloured colonies have DNA insert in the plasmid and they are identified as recombinant colonies.

Statement II : The colonies without blue colour have DNA insert in the plasmid and are identified as recombinant colonies.

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

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

Answer (2)

148. Which of the following microbes in **NOT** involved in the preparation of household products?

A. Aspergillus niger
B. Lactobacillus
C. Trichoderma polysporum
D. Saccharomyces cerevisiae
E. Propionibacterium sharmanii

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

(1) C and D only
(2) C and E only
(3) A and B only
(4) A and C only

Answer (4)

149. Silencing of specific mRNA is possible via RNAi because of

(1) Complementary tRNA
(2) Non-complementary ssRNA
(3) Complementary dsRNA
(4) Inhibitory ssRNA

Answer (3)

150. The complex II of mitochondrial electron transport chain is also known as

(1) Cytochrome c oxidase
(2) NADH dehydrogenase
(3) Cytochrome bc_1
(4) Succinate dehydrogenase

Answer (4)

151. While trying to find out the characteristic of a newly found animal, a researcher did the histology of adult animal and observed a cavity with presence of mesodermal tissue towards the body wall but no mesodermal tissue was observed towards the alimentary canal. What could be the possible coelome of that animal?

(1) Schizocoelomate
(2) Spongocoelomate
(3) Acoelomate
(4) Pseudocoelomate

Answer (4)

152. Given below are two statements:

Statement I: In a floral formula ⊕ stands for zygomorphic nature of the flower, and G stands for inferior ovary.

Statement II: In a floral formula ⊕ stands for actinomorphic nature of the flower and G stands for superior ovary.

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

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

Answer (2)

153. Given below are two statements:

Statement I: In ecosystem, there is unidirectional flow of energy of sun from producers to consumers.

Statement II: Ecosystems are exempted from 2nd law of thermodynamics.

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

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

Answer (1)

154. Which of the following is the unit of productivity of an Ecosystem?

(1) KCal m^{-3}

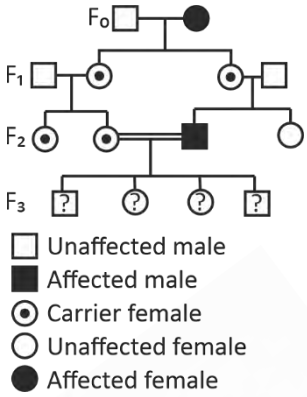
(2) (KCal m^{-2})yr^{-1}

(3) gm^{-2}

(4) KCal m^{-2}

Answer (2)

155. With the help of given pedigree, find out the probability for the birth of a child having no disease and being a carrier (has the disease mutation in one allele of the gene) in F_3 generation.



(1) 1/8

(2) Zero

(3) 1/4

(4) 1/2

Answer (3)

156. In the seeds of cereals, the outer covering of endosperm separates the embryo by a protein-rich layer called :

(1) Integument

(2) Aleurone layer

(3) Coleoptile

(4) Coleorhiza

Answer (2)

157. Match **List I** with **List II**:

	List-I		**List-II**
A.	Chlorophyll a	(i)	Yellow-green
B.	Chlorophyll b	(ii)	Yellow
C.	Xanthophylls	(iii)	Blue-green
D.	Carotenoids	(iv)	Yellow to Yellow-orange

Choose the option with all **correct** matches.

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

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

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

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

Answer (4)

158. Who proposed that the genetic code for amino acids should be made up of three nucleotides?

(1) Jacque Monod
(2) Franklin Stahl
(3) George Gamow
(4) Francis Crick

Answer (3)

159. Histones are enriched with -

(1) Phenylalanine & Leucine
(2) Phenylalanine & Arginine
(3) Lysine & Arginine
(4) Leucine & Lysine

Answer (3)

160. Which of the following enzyme(s) are **NOT** essential for gene cloning?

A. Restriction enzymes
B. DNA ligase
C. DNA mutase
D. DNA recombinase
E. DNA polymerase

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

(1) D and E only
(2) B and C only
(3) C and D only
(4) A and B only

Answer (3)

161. A specialised membranous structure in a prokaryotic cell which helps in cell well wall formation, DNA replication and respiration is

(1) Cristae
(2) Endoplasmic Reticulum
(3) Mesosome
(4) Chromatophores

Answer (3)

162. Which factor is important for termination of transcription?

(1) ρ (rho)
(2) γ (gamma)
(3) α (alpha)
(4) σ (sigma)

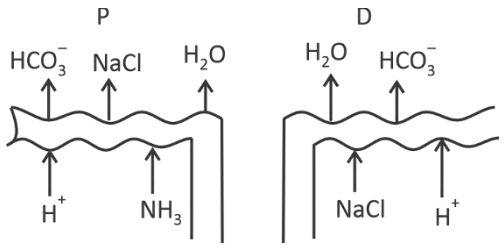
Answer (1)

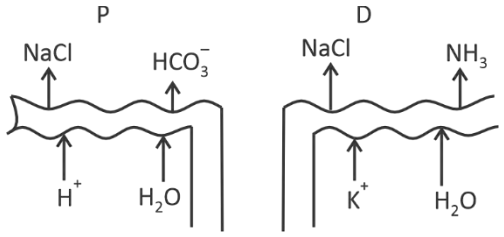
163. Which of the following statement is **correct** about location of the male frog copulatory pad?

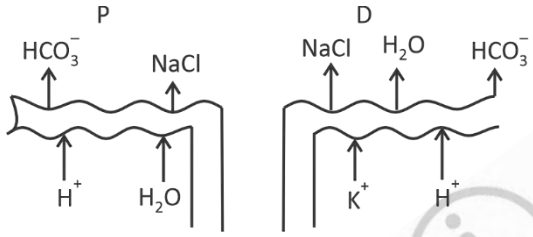
(1) Second digit of fore limb
(2) First digit of the fore limb
(3) First and Second digit of fore limb
(4) First digit of hind limb

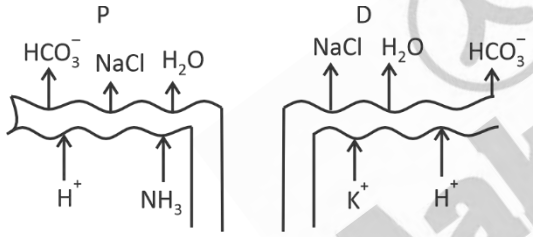
Answer (2)

164. Which of the following diagrams is correct with regard to the proximal (P) and distal (D) tubule of the Nephron.

(1)


(2)


(3)


(4)


Answer (4)

165. Identify the statement that is **NOT** correct.

(1) Antigen binding site is located at C-terminal region of antibody molecules.

(2) Constant region of heavy and light chains are located at C-terminus of antibody molecules

(3) Each antibody has two light and two heavy chains.

(4) The heavy and light chains are held together by disulfide bonds.

Answer (1)

166. Match **List I** with **List II** :

	List I		**List II**
A.	Scutellum	I.	Persistent nucellus
B.	Non-albuminous seed	II.	Cotyledon of Monocot seed
C.	Epiblast	III.	Groundnut
D.	Perisperm	IV.	Rudimentary cotyledon

Choose the option with all **correct** matches.

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

Answer (3)

167. Find the statement that is **NOT** correct with regard to the structure of monocot stem.

(1) Vascular bundles are conjoint and closed.
(2) Phloem parenchyma is absent.
(3) Hypodermis is parenchymatous.
(4) Vascular bundles are scattered.

Answer (3)

168. Twins are born to a family that lives next door to you. The twins are a boy and a girl. Which of the following must be true?

(1) They were conceived through in vitro fertilization.
(2) They have 75% identical genetic content.
(3) They are monozygotic twins.
(4) They are fraternal twins.

Answer (4)

169. Sweet potato and potato represent a certain type of evolution. Select the correct combination of terms to explain the evolution.

(1) Homology, convergent
(2) Analogy, divergent
(3) Analogy, convergent
(4) Homology, divergent

Answer (3)

170. Which one of the following phytohormones promotes nutrient mobilization which helps in the delay of leaf senescence in plants?

(1) Gibberellin
(2) Cytokinin
(3) Ethylene
(4) Abscisic acid

Answer (2)

171. Why can't insulin be given orally to diabetic patients?

(1) Because of structural variation
(2) Its bioavailability will be increased
(3) Human body will elicit strong immune response
(4) It will be digested in Gastro-Intestinal (GI) tract

Answer (4)

172. Name the class of enzyme that usually catalyze the following reaction :

$S - G + S^{\#} \rightarrow S + S^{\#} - G$

Where, G $\rightarrow$ a group other than hydrogen

S $\rightarrow$ a substrate

$S^{\#}$ $\rightarrow$ another substrate

(1) Transferase
(2) Ligase
(3) Hydrolase
(4) Lyase

Answer (1)

173. Given below are two statements :

Statement I : The DNA fragments extracted from gel electrophoresis can be used in construction of recombinant DNA.

Statement II : Smaller size DNA fragments are observed near anode while larger fragments are found near the wells in an agarose gel.

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

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

Answer (3)

174. The correct sequence of events in the life cycle of bryophytes is

A. Fusion of antherozoid with egg.
B. Attachment of gametophyte to substratum.
C. Reduction division to produce haploid spores.
D. Formation of sporophyte.
E. Release of antherozoids into water.

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

(1) B, E, A, D, C
(2) D, E, A, B, C
(3) D, E, A, C, B
(4) B, E, A, C, D

Answer (1)

175. Genes R and Y follow independent assortment. If RRYY produce round yellow seeds and rryy produce wrinkled green seeds, what will be the phenotypic ratio of the F2 generation?

(1) Phenotypic ratio - 9 : 3 : 3 : 1
(2) Phenotypic ratio - 9 : 7
(3) Phenotypic ratio - 1 : 2 : 1
(4) Phenotypic ratio - 3 : 1

Answer (1)

176. Each of the following characteristics represent a Kingdom proposed by Whittaker. Arrange the following in increasing order of complexity of body organization.

A. Multicellular heterotrophs with cell wall made of chitin.
B. Heterotrophs with tissue/organ/organ system level of body organization.
C. Prokaryotes with cell wall made of polysaccharides and amino acids.
D. Eukaryotic autotrophs with tissue/organ level of body organization.
E. Eukaryotes with cellular body organization.

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

(1) A, C, E, D, B
(2) C, E, A, B, D
(3) A, C, E, B, D
(4) C, E, A, D, B

Answer (4)

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

	List-I		List-II
A.	Centromere	I.	Mitochondrion
B.	Cilium	II.	Cell division
C.	Cristae	III.	Cell movement
D.	Cell membrane	IV.	Phospholipid Bilayer

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

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

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

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

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

Answer (2)

178. Which one of the following equations represents the Verhulst-Pearl Logistic Growth of population?

(1) $\frac{dN}{dt} = rN\left(\frac{N-K}{N}\right)$

(2) $\frac{dN}{dt} = N\left(\frac{r-K}{K}\right)$

(3) $\frac{dN}{dt} = r\left(\frac{K-N}{K}\right)$

(4) $\frac{dN}{dt} = rN\left(\frac{K-N}{K}\right)$

Answer (4)

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

	List-I		List-II
A.	Emphysema	I.	Rapid spasms in muscle due to low Ca^{++} in body fluid
B.	Angina Pectoris	II.	Damaged alveolar walls and decreased respiratory surface
C.	Glomerulonephritis	III.	Acute chest pain when not enough oxygen is reaching to heart muscle
D.	Tetany	IV.	Inflammation of glomeruli of kidney

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

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

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

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

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

Answer (2)

180. Cardiac activities of the heart are regulated by:

A. Nodal tissue

B. A special neural centre in the medulla oblongata

C. Adrenal medullary hormones

D. Adrenal cortical hormones

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

(1) A, C and D Only

(2) A, B and D Only

(3) A, B and C Only

(4) A, B, C and D

Answer (3)

❑ ❑ ❑