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AIPMT 2014 Biology Solution Set-Q

46. Five kingdom system of classification suggested by R.H. Whittaker is not based on :

(1) Mode of reproduction.

(2) Mode of nutrition.

(3) Complexity of body organisation

(4) Presence or absence of a well-defined nucleus.

Sol. 1

47. The main function of mammalian corpus luteum is to produce :

(1) progesterone

(2) human chorionic gonadotropin

(3) relaxin only

(4) estrogen only

Sol. 1

48. In which one of the following processes CO_2 is not released?

(1) Aerobic respiration in animals

(2) Alcoholic fermentation

(3) Lactate fermentation

(4) Aerobic respiration in plants

Sol. 3

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49. Choose the correctly matched pair :

(1) Moist surface of buccal cavity - Glandular epithelium

(2) Tubular parts of nephrons – Cuboidal epithelium

(3) Inner surface of bronchioles – squamous epithelium

(4) Inner lining of salivary ducts – Ciliated epithelium

Sol. 2

50. Which of the following shows coiled RNA strand and capsomeres?

(1) Tobacco mosaic virus

(2) Measles Virus

(3) Retrovirus

(4) Polio virus

Sol. 1

51. Just as a person moving from Delhi to Shimla to escape the heat for the duration of hot summer, thousands of migratory birds from Siberia and other extremely cold northern regions move to :

(1) Meghalaya

(2) Corbett National Park

(3) Keolado National Park

(4) Western Ghat

Sol. 3

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52. You are given a fairly old piece of dicot stem and a dicot root. Which of the following anatomical structures will you use to distinguish between the two ?

(1) Secondary phloem

(2) protoxylem

(3) Cortical cells

(4) Secondary xylem

Sol. 2

53. In 'S' phase of the cell cycle :

(1) amount of DNA remains same in each cell.

(2) chromosome number is increased

(3) amount of DNA is reduced to half in each cell.

(4) amount of DNA doubles in each cell.

Sol. 4

54. A species facing extremely high risk of extinction in the immediate future is called :

(1) Endemic

(2) Critically Endangered

(3) Extinct

(4) Vulnerable

Sol. 2

55. Fruit colour in squash is an example of :

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(1) Dominant epistasis

(2) Complementary genes

(3) Inhibitory genes

(4) Recessive epistasis

Sol. 1

56. Identity the hormone with its correct matching of source and function

(1) Melatonin – Pineal gland, regulates the normal rhythm of sleepwake cycle

(2) Progesterone – corpus – luteum, secondary sex organs.

(3) Atrial natriuretic factor –ventricular wall increases the blood pressure

(4) Oxytocin – posterior pituitary growth and maintenance of mammary glands

Sol. 1

57. An example of edible underground stem is

(1) Groundnut

(2) Sweet potato

(3) Potato

(4) Carrot

Sol. 3

58. Which of the following causes an increase in sodium reabsorption in the distal convoluted tubule ?

(1) Increase in antidiuretic hormone levels

(2) Decrease in aldosterone levels

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(3) Decrease in antidiuretic hormone levels

(4) Increase in aldosterone levels

Sol. 2

59. Which structures perform the function of mitochondria in bacteria ?

(1) Ribosomes

(2) Cell wall

(3) Mesosomes

(4) Nucleoid

Sol. 3

60. Select the option which is not correct with respect to enzyme action :

(1) Addition of lot of succinate does not reverse the inhibition of succinic dehydrogenase by malonate.

(2) A non – competitive inhibitor binds the enzyme at a site distinct from that which binds the substrate.

(3) Malonate is a competitive inhibitor of succinic dehydrogenase.

(4) Substrate binds with enzyme at its active site.

Sol. 1

61. Which the particular type of drug that is obtained from the plant whose one flowering branch is shown below?

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1) Depressant
2) Stimulant
3) Pain – killer
4) Hallucinogen

Sol. 1

62. Fructose is absorbed into the blood through mucosa cells of intestine by the process called:
1) facilitated transport
2) simple diffusion
3) co-transport mechanism
4) active transport

Sol. 1

63. The solid linear cytoskeletal elements having a diameter of 6 nm and made up of a single type of monomer are known as;
1) Microfilaments
2) Intermediate filaments
3) Lamins
4) Microtubules

Sol. 1

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64. Which one of the following living organisms completely lacks a cell wall?
1) Sea – fan (Gorgonia)
2) Sacharomyces
3) Blue – green algae
4) Cyanobacteria

Sol. 1

65. Tracheids differ from other tracheary elements in:
1) being imperforate
2) lacking nucleus
3) being lignified
4) having casparian strips

Sol. 1

66. Select the correct matching of the type of the joint with the example in human skeletal system:

Type of joint		**Example**
(1) Pivot joint		Between third and fourth cervical vertebrae
(2) Hinge joint	-	Between humerus and pectoral girdle
(3) Gliding joint	-	Between carpals
(4) Cartilaginous joint	-	Between frontal and pariental

Sol. 3

67. A man whose father was colour blind marries a woman who had a colour blind mother and normal father. What percentage of male children of this couple will be colour blind?
1) 0%
2) 50%
3) 75%
4) 25%

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Sol. 2

68. A few normal seedlings of tomato were kept in a dark room After a few days they were found to have become white-coloured lime albinos, Which of the following terms will you use to describe them?
1) Embolised
2) Etiolated
3) Defoliated
4) Mutated

Sol. 2

69. Function of filiform apparatus is to:
1) Stimulate division of generative
2) Produce nectar
3) Guide entry of pollen tube
4) Recognize the suitable pollen at stigma

Sol. 3

70. Choose the correctly matched pair:
1) Adipose tissue – Dense connective tissue
2) Areolar tissue – Loose connective tissue
3) Cartilage – Loose connective tissue
4) Tendon – Specialized connective tissue

Sol. 2

71. Forelimbs of cat, lizard used in walking forelimbs of whale used in swimming and forelimbs of bats used in flying are an example of:
1)
2)
3) Convergent evolution
4) Analogous organs

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Sol. 2

72. Which one of the following is a non – reducing carbohydrate?
1) Sucrose
2) Lactose
3) Ribose 5 – phosphate
4) Maltose

Sol.1

73. At which stage of HIV infection does one usually show symptoms of AIDS?
1) When the infected retro virus enters host cells.
2) When HIV damage large number of helper T – Lymphocytes.
3) When the viral DNA is produced by reverse transcriptase.
4) Within 15 days of sexual contact with an infected person.

Sol. 2

74. What gases are produced in anaerobic sludge digesters?
1) Methane, Hydrogen Sulphide and CO_2
2) Methane, Hydrogen Sulphide and O_2
3) Hydrogen Sulphide and CO_2
4) Mehane and CO_2 only

Sol. 1

75. Anoxygenic photosynthesis is characteristic of :
1) Spirogyra
2) Chlamydomonas
3) Ulva
4) Rhodospirillum

Sol. 4

76. Match the following and select the correct option:

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a) Earthworm	(i) Pioneer species
b) Succession	(ii) Detritivore
c) Ecosystem service	(iii) Natality
d) Population growth	(iv) Pollination

Sol. 3

77. A location with luxuriant growth of lichens on the trees indicates that the:
1) trees heavily infested
2) location is highly polluted
3) location is not polluted
4) trees are very healty

Sol. 3

78. In vitro clonal propagation in plants is characterized by:
1) Northern blotting
2) Electrophoresis and HPLC
3) Microscopy
4) PCR and RAPD

Sol. 4

79. An alga which can be employed as food for human being is:
1) chlorella
2) Spirogyra
3) Polysiphonia
4) Ulothrix

Sol. 2

80. Which one of the following growth regulators is known as ‘stress hormone’?
1) Ethylene
2) GA3
3) Indole acetic acid

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(4) Abscissic and

Sol. 4

81. The enzyme recombinase is required at which stage of meiosis:
1) Zygontene
2) Diplotene
3) Diakinesis
4) Pachytene

Sol. 4

82. Assisted reproductive technology, IVF involves transfer of:
1) Zygote into the fallopian tube.
2) Zygote into the uterus.
3) Embryo with 16 blastomeres into the fallopian tube.
4) Ovum into the fallopian tube.

Sol. 1

83. An example of ex situ conservation is:
1) Seed Bank
2) Wildlife Sanctuary
3) Sacred Grove
4) National Park

Sol. 1

84. The osmotic of a cell kept in water is chiefly regulated by:
1) Vacuoles
2) Plastids
3) Ribosomes
4) Mitohondria

Sol. 1

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85. Which one of the following is wrong about Chara?
1) Globule and nucule present on the same plant.
2) Upper antheridium and lower oogonium
3) Globule is male reproductive structure
4) Upper oogonium and lower round antheridium.

Sol. 2

86. The first human hormone produced by recombinant DNA technology is:
1) Estrogen
2) Thyroxin
3) Progesterone
4) Insulin

Sol. 2

87. Which one of the following statements is not correct?
1) In retina the rods have the photo pigment rhodopsin while cones have three different photo pigments.
2) Retinal is a derivative of Vitamin C.
3) Rhodopsin is the purplish red protein present in rods only.
4) Retinal is the light absorbing portion of visual photo pigment.

Sol. 2

88. Which one of the following statements is correct?
1) Mango is a parthenocarpic fruit.
2) A proteinaceous aleurone layer is present in maize grain.
3) A sterile pistile is called a staminode.
4) The speed in grasses is not endospemic.

Sol.2

89. Pollen tablet are available in the market for:

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1) Breeding programmes
2) Supplementing food
3) Ex situ conservation
4) In vitro fertilization

Sol. 4

90. Select the correct option:

	Direction of RNA synthesis	Direction of reading of the template DNA strand
(1)	3’ – 5’	5’ – 3’
(2)	5’- 3’	5’ -3’
(3)	3’ – 5’	3’ – 5’
(4)	5’ – 3’	3’ – 5’

Sol. 4

91. The organization which publishes the Red List of species is:
1) IUCN
2) UNEP
3) WWF
4) ICFRE

Sol. 1

92. A human female with Turner’ s syndrome:
1) has one additional X chromosome.
2) exhibits male characters.
3) is able to produce children with normal husband.
4) has 45 chromosomes with XO.

Sol. 4

93. Match the following and select the correct answer:
a) Centriole (i) Infoldings in mitochondria

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b) Chlorophyll (ii) Thylakoids
c) Cristae (iii) Nucleic acids
d) Ribozymes (iv) Basal body cilia or flagella

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

Sol. 4

94. Approximately seventy percent of carbon-dioxide absorbed by the blood will be transported to the lungs:
1) in the form of dissolved gas molecules
2) by binding to R.B.C
3) as carbamino – haemoglobin
4) as bicarbonate ions

Sol. 4

95. Which vector can clone only a small fragment of DNA?
1) Yeast artificial chromosome
2) Plasmid
3) Cosmind
4) Bacterial artificial chromosome

Sol. 2

96. The zone of atmosphere in which the ozone layer is present is called:
1) Mesoshpere
2) Stratosphere
3) Troposphere
4) Ionosphere
Sol. 2

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97. Which one of the following fungi contains hallucinogens?
1) Amanita muscaria
2) Neurospora sp.
3) Ustilago sp.
4) Morchella esculenta

Sol. 1

98. A scrubber in the exhaust of a chemical industrial plant removes:
1) particulate matter of the size 5 micrometer or above
2) gases like ozone and methane
3) particulate matter of the size 2.5 micrometer or less
4) gases like sulphur dioxide

Sol. 4

99. Select the Taxon mentioned that represents both marine and fresh water species:
1) Ctenophora
2) Cephalochordata
3) Cnidaria
4) Echinoderms

Sol. 3

100. When the margins of sepals or petals overlap one another without any particular direction, the condition is termed as:
1) Imbricate
2) Twisted
3) Valvate
4) Vexillary

Sol. 1

101. An aggregate fruit is one which develops from:

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1) Multicarpellary apocarpus gynoecium
2) Complete inflorescence
3) Multicarpellary superior ovary
4) Multicarpellary syncarpous gynoecium

Sol. 1

102. Commonly used vector for human genome sequencing are:
1) BAC and YAV
2) Expression Vectors
3) T/A Cloning Vectors
4) T – DNA

Sol. 1

103. To obtain virus – free healthy plants from a diseased one by tissue culture technique, which part/parts of the diseased plant will be taken?
1) Palisade parenchyma
2) Both apical and axillary meristems
3) Epidermis only
4) Apical meristem only

Sol. 2

104. Fight-or-flight reactions cause activation of:
1) the kidney, leading to suppression of reninangiotensin-aldosterone pathway.
2) the adrenal medulla, leading to increased secretion of epinephrine and norepinephrine.
3) the pancreas leading to a reduction in the blood sugar levels.
4) the parathyroid glands, leading to increased metabolic rate.

Sol. 2

105. Stimulation of a muscle fiber by o motor neuron occurs at:
1) the transverse tubules

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2) the myofibril
3) the sarcoplasmic reticulum
4) the neuromuscular junction

Sol. 4

106. Planaria posses high capacity of:
1) regeneration
2) alternation of generation
3) bioluminescence
4) metamorphosis

Sol. 1

107. Placenta and pericarp are both edible portions in:
1) Banana
2) Tomato
3) Potato
4) Apple

Sol. 2

108. Deficiency symptoms of nitrogen and potassium are visible first in:
1) Young leaves
2) Roots
3) Buds
4) Senescent leaves

Sol. 4

109. Geitonogamy involves:
1) fertilization of a flower by the pollen from the same flower.
2) fertilization of a flower by the pollen from a flower of another plant in the same population.

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3) fertilization of a flower by the pollen from another flower of plant belonging to a distant population.
4) fertilization of a flower by the pollen from another flower of the same plant.

Sol. 1

110. Viruses have:
1) Prokaryotic nucleus
2) Single chromosome
3) Both DNA and RNA
4) DNA enclosed in a protein coat

Sol. 4

111. How do parasympathetic neural signals affect the working of the heart?
1) Heart rate is increased without affecting the cardiac output.
2) Both heart rate and cardiac output increase.
3) Heart rate decrease but cardiac output increases.
4) Reduce both heart rate and cardiac output .

Sol. 4

112. A marine cartilaginous fish that can produce electric current is
1) Torpedo
2) Trygon
3) Scoliodon
4) Pristis

Sol. 1

113. An analysis of chromosomal DNA using the Southern hybridization technique does not use:
1) Blotting
2) Autoradiography
3) PCR

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4) Electrophoresis

Sol. 3

114. Archaebacteria differ from eubacteria in:
1) Mode of nutrition
2) Cell shape
3) Mode of reproduction
4) Cell membrane structure

Sol. 4

115. If 20 J of energy is trapped at producer level, then how much energy will be available to peacock as food in the following chain?
Plant → mice → snake → peacock
1) 0.002 J
2) 0.2 J
3) 0.0002 J
4) 0.02 J

Sol. 4

116. Which one of the following are analogous structures?
1) Gills of Prawn and Lungs of Man.
2) Thorns of Bougainvillea and Tendrils of Cucurbita
3) Flippers of Dolphin and Legs of Horse.
4) Wings of Bat and Wings of Pigeon.

Sol. 4

117. Dr.F. Went noted that if coleoptile tips were removed and placed on agar for one hour, the agar would produce a bending when placed on one side of freshly-cut coleoptile stumps. Of what significance is this experiment?
1) It is the basis for quantitative determination of small amounts of growth-promoting substances.

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2) It supports the hypothesis that IAA is auxin.
3) It demonstrated polar movement of auxins.
4) It made possible the isolation and exact identification of auxin.

Sol. 4

118. Non-albuminous seed is produced in:
1) Castor
2) Wheat
3) Pea
4) Maize

Sol. 3

119. During which phase(s) of cell cycle, amount of DNA in a cell remains at 4C level if the initial amount is denoted as 2C?
1) G_1 and S
2) Only G_2
3) G_2 and M
4) G_0 and G_1

Sol. 2

120. Transformation was discovered by:
1) Hershey and Chase
2) Griffith
3) Watson and Crick
4) Meselson and Stahl

Sol. 2

121. Given below s a simplified model of phosphorus cycling in a terrestrial ecosystem with four blanks (A-D). Identify the blanks.

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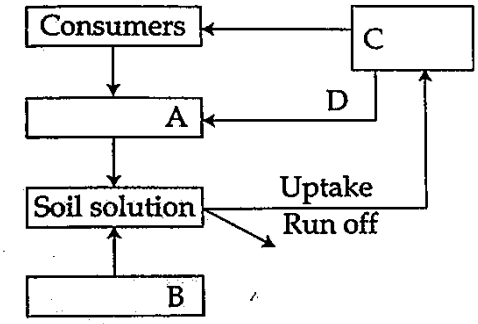

	A	B	C	D
(1)	Litter fall	Producers	Rock minerals	Detritus
(2)	Detritus	Rock minerals	Producers	Litter fall
(3)	Producers	Litter fall	Rock minerals	Detritus
(4)	Rock minerals	Detritus	Litter fall	Producers

Sol. 2

122. In a popular of 1000 individuals 360 belong to genotype AA, 480 to Aa and the remaining 160 to aa. Based on this data, the frequency of allele A in the population is :

a. 0.5

b. 0.6

c. 0.7

d. 0.4

Sol. 2

123. Tubectomy is a method of sterilization in which :

a. ovaries are removed surgically.

b. small part of vas deferens is removed or tied up.

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c. uterus is removed surgically
d. small part of the fallopian tube is removed or tied up.

Sol. 4

124. Which of the following is responsible for peat formation ?
a. Riccia
b. Funaria
c. sphagnum
d. Marchantia

Sol. 3

125. Which one of the following shows isogamy with non-flagellated gametes ?
a. Ectocarpus
b. Ulothrix
c. Spirogyra
d. Sargassum

Sol. 3

126. Which one of the following is wrongly matched ?
a. Translation – Using information in m-RNA to make protein.
b. Repressor protein-Binds to operator to stop enzyme synthesis.
c. Operon – Structural genes, operator and promoter.
d. Transcription – Writing information from DNA to t-RNA
Sol. 3

127. Which of the following is a hormone releasing intra Uterine Device (IUD) ?
a. LNA – 20
b. Cervical cap

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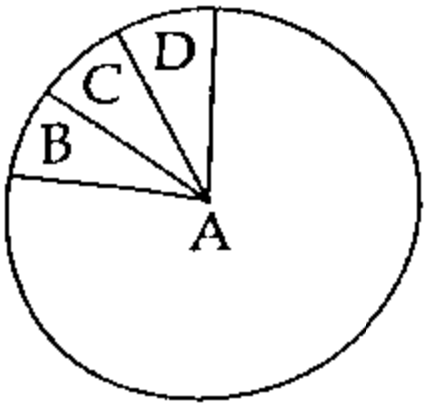
c. Vault
d. Multiload 375

Sol. 4

128. Given below is the representation of the extent of global diversity of invertebrates. What groups the four portions (A-D) represent respectively ?



Option :

	A	**B**	**C**	**D**
(1)	Crustaceans	Insects	Molluscs	Other animal group
(2)	Molluscs	Other animal group	Crustaceans	Insects
(3)	insects	Molluscs	Crustaceans	Other animal group
(4)	Insects	Crustaceans	Other animal group	Molluscs

Sol. 3

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129. Male gametophyte with least number of cells is present in :
a. Funaria
b. Lilium
c. Pinus
d. Pteris

Sol. 2

130. The shared terminal duct of the reproductive and urinary system in the human male is :
a. Ureter
b. Vas deferens
c. Vasa efferentia
d. Urethra

Sol. 4

131. Injury localized to the hypothalamus would most likely disrupt :
a. co-ordination during locomotion.
b. executive functions, such as decision making.
c. regulation of body temperature.
d. short – term memory.

Sol. 3

132. Select the correct option describing gonadotropin activity in a normal pregnant female :
a. High level of FSH and LH facilitate implantation of the embryo.
b. High level of hCG stimulates the synthesis of estrogen and progesterone.
c. High level of hCG stimulates the thickening of endometrium.

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d. High level of FSH and LH stimulates the thickening of endometrium.

Sol. 2

133. The initial step in the digestion of milk humans is carried out by ?
a. Trypsin
b. Rennin
c. Pepsin
d. Lipase

Sol. 3

134. The motile bacteria are able to move by :
a. flagella
b. cilia
c. pili
d. fimbriae

Sol. 1

135. Person with blood group AB is considered as universal recipient because he has :
a. both A and B antibodies in the plasma.
b. no antigen on RBC and no antibody in the plasma.
c. both A and B antigens in the plasma but no antibodies.
d. both A and B antigens on RCB but no antibodies in the plasma.

Sol. 4

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