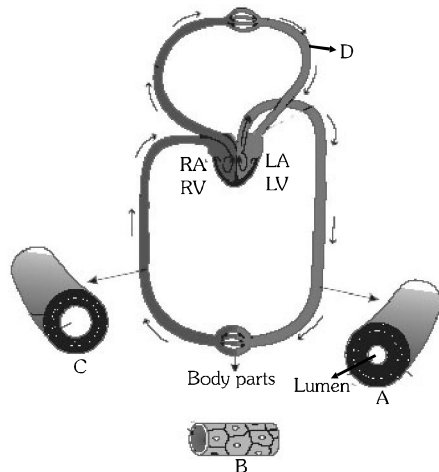


**NEET-UG (KARNATAKA) 2013 TEST PAPER WITH ANSWER KEY
(HELD ON SATURDAY 18th MAY, 2013)**

46. Figure shows blood circulation in humans with labels A to D. Select the option which gives correct identification of label and functions of the part :-



- (1) B - Capillary - thin without muscle layers and well two cell thick
 (2) C - Vein - thin walled and blood flows in jerks./spurts
 (3) D - Pulmonary vein - takes oxygenated blood to heart $PO_2 = 95$ mm Hg
 (4) A - Artery - thick walled and blood flows evenly

Ans. (3)

47. Which enzymes are likely to act on the baked potatoes eaten by a man, starting from the mouth and as it moves down the alimentary canal ?

- (1) Pancreatic amylase → salivary amylase → lipases
 (2) Disaccharidase like maltase → lipases → nucleases
 (3) Salivary amylase → pancreatic amylase → disaccharidases
 (4) Salivary maltase → carboxy peptidase → trypsinogen

Ans. (3)

48. The largest tiger reserve in India is :-

- (1) Valmiki
 (2) Nagarjunsagar - Srisailam
 (3) Periyar
 (4) Nagarhole

Ans. (2)

49. The characteristics of class Reptilia are :-

- (1) Body covered with moist skin which is devoid of scales, the ear is represented by a tympanum, alimentary canal, urinary and reproductive tracts open into a common cloaca
 (2) Fresh water animals with bony endoskeleton, air-bladder to regulate buoyancy
 (3) Marine animals with cartilaginous endoskeleton, body covered with placoid scales
 (4) Body covered with dry and cornified skin, scales over the body are epidermal, they do not have external ears

Ans. (4)

50. Among flowers of *Calotropis*, tulip, *Sesbania*, *Asparagus*, Colchicine, Sweet pea, *Petunia*, *Indigofera*, Mustard, Soybean, Tobacco and groundnut how many plants have corolla with valvate aestivation ?

- (1) Six (2) Seven
 (3) Eight (4) Five

Ans. (2)

51. During muscle contraction in humans the :-

- (1) Sarcomere does not shorten
 (2) A band remain same
 (3) A, H and I bands shorten
 (4) Actin filaments shorten

Ans. (2)

52. Which one of the following statements is correct regarding Sexually Transmitted Diseases (STD) ?

- (1) A person may contract syphilis by sharing milk with one already suffering from the disease
 (2) Haemophilia is one of the STD
 (3) Genital herpes and sickle-cell anaemia are both STD
 (4) The chances of a 5 year boy contacting a STD are very little

Ans. (1)

53. During meiosis I, the chromosomes start pairing at:
- (1) Zygotene
 - (2) Pachytene
 - (3) Diplotene
 - (4) Leptotene

Ans. (1)

54. Identify the tissue shown in the diagram and match with its characteristics and its location :-



- (1) Smooth muscles, show branching, found in the walls of the heart.
- (2) Cardiac muscles, unbranched muscles, found in the walls of the heart
- (3) Striated muscles, tapering at both-ends, attached with the bones of the ribs
- (4) Skeletal muscle, shows striations and closely attached with the bones of the limbs

Ans. (4)

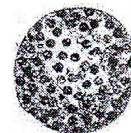
55. One of the most frequently used techniques in DNA fingerprinting is :-
- (1) VNTR
 - (2) SSCP
 - (3) SCAR
 - (4) AFLP

Ans. (1)

56. The common characteristics between tomato and potato will be maximum at the level of their :-
- (1) Family
 - (2) Order
 - (3) Division
 - (4) Genus

Ans. (1)

57. The figure shows a human blood cell. Identify it and give its characteristics :-



	Blood cell	Characteristics
(1)	Basophil	Secrete serotonin, inflammatory response
(2)	B-lymphocyte	form about 20% of blood cells involved in immune response
(3)	Neutrophil	Most abundant blood cell, phagocytic
(4)	Monocyte	Life span 3 days, produce antibodies

Ans. (1)

58. Random unidirectional change in allele frequencies that occur by chance in all populations and especially in small populations is known as :-
- (1) Migration
 - (2) Natural selection
 - (3) Genetic drift
 - (4) Mutation

Ans. (3)

59. The plant body is thalloid in :-
- (1) *Sphagnum*
 - (2) *Salvinia*
 - (3) *Marchantia*
 - (4) *Funaria*

Ans. (3)

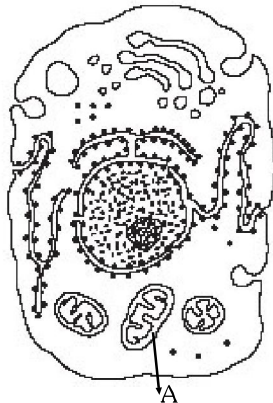
60. Select the correct option with respect to Cockroaches :-
- (1) Malpighian tubules convert nitrogenous wastes into urea
 - (2) Males bear short and styles not present in females
 - (3) Nervous system comprises of a dorsal nerve cord and ten pairs of ganglion
 - (4) The fore wings are tegmina which are used in flight

Ans. (2)

61. During the metaphase stage of mitosis spindle fibres attach to chromosomes at :-
- (1) kinetochore
 - (2) both centromere and kinetochore
 - (3) centromere, kinetochore and areas adjoining centromere
 - (4) centromere

Ans. (1)

62. Select the alternative giving correct identification and function of the organelle 'A' in the diagram



- (1) Mitochondria - produce cellular energy in the form of ATP
- (2) Golgi body - provides packaging material
- (3) Lysosomes - secrete hydrolytic enzymes
- (4) Endoplasmic reticulum - synthesis of lipids

Ans. (1)

63. RNA interference involves :-

- (1) Synthesis of cDNA from RNA using reverse transcriptase
- (2) Silencing of specific mRNA due to complementary RNA
- (3) Interference of RNA in synthesis of DNA
- (4) Synthesis of mRNA from DNA

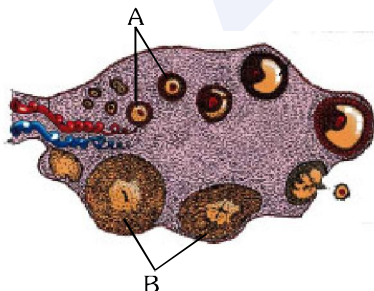
Ans. (2)

64. Which one of the following groups of animals reproduces only by sexual means ?

- (1) Cnidaria
- (2) Porifera
- (3) Protozoa
- (4) Ctenophora

Ans. (4)

65. The figure shows a section of human ovary. Select the option which gives the correct identification of A and B with function/characteristic :-



- (1) B - Corpus luteum - secretes progesterone
- (2) A - Tertiary follicle - forms Graafian follicle
- (3) B - Corpus luteum - secretes estrogen
- (4) A - Primary oocyte - it is the prophase - I of the meiotic division

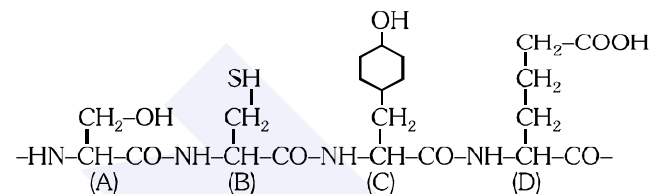
Ans. (1)

66. The stage transferred into the uterus after induced fertilization of ova in the laboratory is :-

- (1) embryo at 4 blastomere stage
- (2) embryo at 2 blastomere stage
- (3) Morula
- (4) Zygote

Ans. (3)

67. The figure shows a hypothetical tetrapeptide portion of a protein with parts labelled A-D. Which one of the following option is correct ?



- (1) D is the acidic amino acid - glutamic acid
- (2) C is an aromatic amino acid - tryptophan
- (3) A is the C-terminal amino acid and D is N terminal amino acid
- (4) A is the sulphur containing amino acid-methionine

Ans. (1)

68. Identify the site where *Wuchereria bancrofti* is normally found on human body :-

- (1) Muscles of the legs
- (2) Blood vessels of the thigh region
- (3) Skin between the fingers
- (4) Lymphatic vessels of the lower limbs

Ans. (4)

69. In our society women are blamed for producing female children. Choose the correct answer for the sex-determination in humans :

- (1) due to some defect like aspermia in man
- (2) due to the genetic make up of the particular sperm which fertilizes the egg
- (3) due to the genetic make up of the egg
- (4) due to some defect in the women

Ans. (2)

70. Genetic variation in a population arises due to :

- (1) Recombination only
- (2) Mutations as well as recombination
- (3) Reproductive isolation and selection
- (4) Mutations only

Ans. (2)

71. The second commitment period for Kyoto Protocol was decided at :

- (1) Durban (2) Bali
(3) Doha (4) Cancun

Ans. (3)

72. Climate of the world is threatened by :

- (1) Decreasing amount of atmospheric oxygen
(2) Increasing amount of atmospheric carbon dioxide
(3) Decreasing amount of atmospheric carbon dioxide
(4) Increasing concentration of atmospheric oxygen

Ans. (2)

73. Which of the following statement is not true for stomatal apparatus ?

- (1) Guard cells invariably posses chloroplasts and mitochondria
(2) Guard cells are always surrounded by subsidiary cells
(3) Stomata are involved in gaseous exchange
(4) Inner walls of guard cells are thick

Ans. (2)

74. The age pyramid with broad base indicates :

- (1) high percentage of old individuals
(2) low percentage of young individuals
(3) a stable population
(4) high percentage of young individuals

Ans. (4)

75. Select the option which shows correct matching of animal with excretory organs and excretory product :

	Animal	Excretory organs	Excretory product
(1)	<i>Labeo</i> (Rohu)	Nephridial tubes	Ammonia
(2)	Salamander	Kidney	Urea
(3)	Peacock	Kidney	Urea
(4)	Housefly	Renal tubules	Uric acid

Ans. (2)

76. Which of the following best illustrates FEEDBACK in development ?

- (1) Tissue (X) secretes RNA which changes the development of tissue (Y)
(2) As tissue (X) develops, it secretes enzymes that inhibit the development of tissue (Y)
(3) As tissue (X) develops, it secretes something that induces tissue (Y) to develop
(4) As tissues (X) develops, it secretes something that shows down the growth of tissue (Y)

Ans. (4)

77. Which of the following type of plastids does not contain stored food material ?

- (1) Chromoplasts (2) Eleioplasts
(3) Aleuoplasts (4) Amyloplasts

Ans. (1)

78. Tissue culture technique can produce infinite number of new plants from a small parental tissue. The economic importance of the technique is in raising:

- (1) genetically uniform population identical to the original parent
(2) homozygous diploid plants
(3) development of new species
(4) variants through picking up somaclonal variations

Ans. (1)

79. Inflorescence is racemose in :

- (1) Brinjal (2) Tulip
(3) Aloe (4) Soyabean

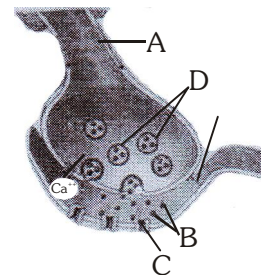
Ans. (4)

80. Which one of the following is **wrongly** matched ?

- (1) *Spirogyra* - Motile gametes
(2) *Sargassum* - Chlorophyll C
(3) Basidiomycetes - Puffballs
(4) *Nostoc* - Water blooms

Ans. (1)

81. The figure shows an axon terminal and synapse. Select the option giving correct identifications of labels A-D :



- (1) A-Action potential
C-Neurotransmitter
(2) B-Neurotransmitter
D-Receptor capsules
(3) C-Receptor
D-Synaptic vesicles
(4) A-Axon terminal
B-Serotonin complex

Ans. (3)

82. Which one of the following vectors is used to replace the defective gene in gene therapy ?

- (1) Adenovirus (2) Cosmid
(3) Ri plasmid (4) Ti plasmid

Ans. (1)

83. Animal vectors are required for pollination in :

- (1) Vallisneria (2) Mulbery
(3) Cucumber (4) Maize

Ans. (3)

84. Which one of the following is not a parasitic adaptation ?

- (1) Development of adhesive organs
(2) Loss of digestive organs
(3) Loss of reproductive capacity
(4) Loss of unnecessary sense organs

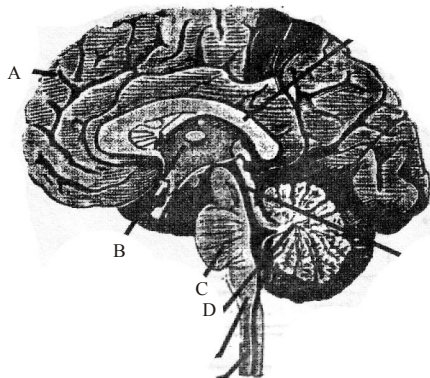
Ans. (3)

85. The pineapple which under natural conditions is difficult to blossom has been made to produce fruits throughout the year by application of :

- (1) NAA, 2, 4- D (2) Phenyl acetic acid
(3) Cytokinin (4) IAA, IBA

Ans. (1)

86. A sagittal section of human brain is shown here. Identify at least two labels from A-D :



- (1) C-Mid brain
D-Cerebellum
(2) A-Cerebrum
C-Pons
(3) B-Corpus callosum
D-Medulla
(4) A-Cerebral hemispheres
B-Cerebellum

Ans. (2)

87. Microbe used for biocontrol of pest butterfly caterpillars is :

- (1) Saccharomyces cerevisiae
(2) Bacillus thuringiensis
(3) Streptococcus sp.
(4) Trichoderma sp.

Ans. (2)

88. Down's syndrome in humans is due to :

- (1) Three 'X' chromosomes
(2) Three copies of chromosome 21
(3) Monosomy
(4) Two 'Y' chromosomes

Ans. (2)

89. The viability of seeds is tested by :

- (1) 2, 6 dichlorophenol indophenols
(2) 2, 3, 5 triphenyl tetrazolium chloride
(3) DMSO
(4) Safranin

Ans. (2)

90. What is common in all the three, Funaria, Dryopteris and Ginkgo ?

- (1) Presence of archegonia
(2) Well developed vascular tissues
(3) Independent gametophyte
(4) Independent sporophyte

Ans. (1)

91. Albuminous seeds store their reserve food mainly in :

- (1) Endosperm (2) Cotyledons
(3) Hypocotyl (4) Perisperm

Ans. (1)

92. Megaspores are produced from the megaspore mother cells after :

- (1) Mitotic division
(2) Formation of a thick wall
(3) Differentiation
(4) Meiotic division

Ans. (4)

93. Benthic organism are affected most by :

- (1) Light reaching the forest floor
(2) Surface turbulence of water
(3) Sediment characteristics of aquatic ecosystems
(4) Water-holding capacity of soil

Ans. (3)

94. Bundle sheath cells :

- (1) are rich in PEP carboxylase
(2) lack RuBisCo
(3) lack both RuBisCo and PEP carboxylase
(4) are rich in RuBisCo

Ans. (4)

95. Meristematic tissue responsible for increase in girth of tree trunk is :

- (1) Intercalary meristem
(2) Lateral meristem
(3) Phellogen
(4) Apical meristem

Ans. (2)

96. Which one of the following animals is correctly matched with its one characteristics and the taxon?

	Animal	Characteristic	Taxon
(1)	Millipede	Ventral nerve cord	Arachnida
(2)	Sea Anemone	Triploblastic	Cnidaria
(3)	Silverfish	Pectoral and Pelvic fins	Chordata
(4)	Duckbilled platypus	Oviparous	Mammalian

Ans. (4)

97. Which one of the following is **not correct** as regards the harmful effects of particulate matter of the size 2.5 micro meters or less ?

- (1) It can cause respiratory problems
- (2) It can directly enter into our circulatory system
- (3) It can cause inflammation and damage to the lungs
- (4) It can be inhaled into the lungs

Ans. (2)

98. Which of the following has maximum genetic diversity in India?

- (1) Mango
- (2) Wheat
- (3) Groundnut
- (4) Rice

Ans. (4)

99. Which one is the **incorrect** statement with regards to the importance of pedigree analysis?

- (1) It confirms that DNA is the carrier of genetic information
- (2) It helps to understand whether the trait in question is dominant or recessive
- (3) It confirms that the trait is linked to one of the autosome
- (4) It helps to trace the inheritance of a specific trait

Ans. (1)

100. Specialized cells for fixing atmospheric nitrogen in *Nostoc* are :

- (1) Heterocysts
- (2) Hormogonia
- (3) Nodules
- (4) Akinetes

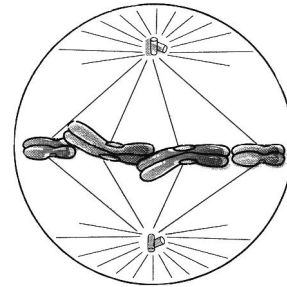
Ans. (1)

101. One of the following is **not** a method of contraception- which one ?

- (1) condoms
- (2) pills of a combination of oxytocin and vasopressin
- (3) Lippes loop
- (4) tubectomy

Ans. (2)

102. A stage of mitosis is shown in the diagram. Which stage is it and what are its characteristics ?



- (1) Metaphase-spindle fibers attached to kinetochores, centromeres split and chromatids separate
- (2) Metaphase- chromosomes moved to spindle equator chromosomes made up of two sister chromatids
- (3) Anaphase - centromeres split and chromatids separate and start moving away
- (4) late prophase - chromosomes move to spindle equator

Ans. (2)

103. In a cymose inflorescence the main axis :

- (1) has unlimited growth
- (2) bears a solitary flower
- (3) has unlimited growth but lateral branches end in flowers
- (4) terminates in a flower

Ans. (4)

104. Sharks and dogfishes differ from skates and rays by:

- (1) Gill slits are ventrally placed
- (2) Head and trunk are widened considerably
- (3) Distinct demarcation between body and tail
- (4) Their pectorals fins distinctly marked off from cylindrical bodies

Ans. (4)

105. The term 'glycocalyx' is used for :

- (1) a layer present between cell wall and membrane of bacteria
- (2) cell wall of bacteria
- (3) bacterial cell glyco-engineered to possess N-glycosylated proteins
- (4) a layer surrounding the cell wall of bacteria

Ans. (4)

106. In an inducible operon, the genes are :

- (1) usually not expressed unless a signal turns them "on"
- (2) usually expressed unless a signal turns them "off"
- (3) never expressed
- (4) always expressed

Ans. (1)

107. Select the option which correctly matches the endocrine gland with its hormone and its function:

	Endocrine gland	Hormone	Function
(1)	Placenta	estrogen	initiates secretion of the milk
(2)	Corpus luteum	estrogen	essential for maintenance of endometrium
(3)	Leydig cells	androgen	initiates the production of sperms
(4)	Ovary	FSH	stimulates follicular development and the secretion of estrogens

Ans. (3)

108. Genes of interest can be selected from a genomic library by using :

- (1) Cloning vectors
- (2) DNA probes
- (3) Gene targets
- (4) Restriction enzymes

Ans. (2)

109. A healthy person eats the following diet-5gm raw sugar, 4 gm albumin, 10 gm pure buffalo ghee adulterated with 2gm vegetable ghee (hydrogenated vegetable oil) and 5 gm lignin. How many calories he is likely to get ?

- (1) 126
- (2) 164
- (3) 112
- (4) 144

Ans. (4)

110. Select the correct statement with respect to disorders of muscles in humans :

- (1) Failure of neuromuscular transmission in myasthenia gravis can prevent normal swallowing
- (2) Accumulation of urea and creatine in the joints cause their inflammation
- (3) An overdose of vitamin D causes osteoporosis
- (4) Rapid contractions of skeletal muscles causes muscle dystrophy

Ans. (1)

111. How many plants among China rose, *Ocimum*, sunflower, mustard, *Alstonia*, guava, *Calotropis* and *Nerium* (Oleander) have opposite phyllotaxy ?

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

Ans. (1)

112. Which of the following statements is **not** true about somatic embryogenesis ?

- (1) The pattern of development of a somatic embryo is comparable to that of a zygotic embryo
- (2) Somatic embryos can develop from microspores
- (3) Somatic embryo is induced usually by an auxin such as 2, 4-D
- (4) A somatic embryo develops from a somatic cell

Ans. (2)

113. Which one of the following statements is correct ?

- (1) Cleistogamous flowers are always autogamous
- (2) Xenogamy occurs only by wind pollination
- (3) Chasmogamous flowers do not open at all
- (4) Geitonogamy involves the pollen and stigma of flowers of different plants

Ans. (1)

114. Norepinephrine :

- (a) is released by sympathetic fibers
- (b) is released by parasympathetic fibers
- (c) increases the heart rate
- (d) decreases blood pressure

Which of the above said statements are correct ?

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

Ans. (1)

115. Dinosaurs dominated the World in which of the following geological era ?

- (1) Coenozoic
- (2) Jurassic
- (3) Mesozoic
- (4) Devonian

Ans. (3)

116. Which of the following statements is correct ?

- (1) Sporopollenin can be degraded by enzymes
- (2) Sporopollenin is made up of inorganic materials
- (3) Sporopollenin can withstand high temperatures as well as strong acids and alkalis
- (4) Sporopollenin can withstand high temperatures but not strong acids

Ans. (3)

117. Which one of the following is a hallucinogenic drug?

- (1) Caffeine
- (2) Morphine
- (3) Lysergic acid diethylamide
- (4) Opium

Ans. (3)

118. The finch species of Galapagos Islands are grouped according to their food sources. Which of the following is not a finch food ?

- (1) Carrion
- (2) Insects
- (3) Tree buds
- (4) Seeds

Ans. (1)

119 Which of the following is not a property of the genetic code ?

- (1) Non-overlapping
- (2) Ambiguous
- (3) Degeneracy
- (4) Universal

Ans. (2)

120. Which of the following elements is a constituent of biotin ?

- (1) Magnesium
- (2) Calcium
- (3) Phosphorus
- (4) Sulphur

Ans. (4)

121. Satellite RNA are present in some :

- (1) Viroids
- (2) Prions
- (3) Bacteriophages
- (4) Plant viruses

Ans. (4)

122. Which two distinct microbial processes are responsible for the release of fixed nitrogen as dinitrogen gas (N_2) to the atmosphere ?

- (1) Aerobic nitrate oxidation, and nitrite reduction
- (2) Decomposition of organic nitrogen, and conversion of dinitrogen to ammonium compounds
- (3) Enteric fermentation in cattle, and nitrogen fixation by *Rhizobium* in root nodules of legumes
- (4) Anaerobic ammonium oxidation, and denitrification

Ans. (4)

123. Which of the following represents the action of insulin ?

- (1) Increases blood glucose levels by stimulating glucagon production
- (2) Decreases blood glucose levels by forming glycogen
- (3) Increases blood glucose level by promoting cellular uptake of glucose
- (4) Increases blood glucose levels by hydrolysis of glycogen

Ans. (2)

124. Which one of the following is true for fungi ?

- (1) They lack a rigid cell wall
- (2) They are heterotrophs
- (3) They lack nuclear membrane
- (4) They are phagotrophs

Ans. (2)

125. Why is a capsule advantageous to a bacterium ?

- (1) It protects the bacterium from desiccation
- (2) It provides means of locomotion
- (3) It allows bacterium to "hide" from host's immune system.
- (4) It allows the bacterium to attach to the surface.

Ans. (3)

126. The foetal ejection reflex in humans triggers release of :

- (1) oxytocin from foetal pituitary
- (2) human Chorionic Gonadotropin (hCG) from placenta
- (3) human Placental Lactogen (hPL) from placenta
- (4) oxytocin from maternal pituitary

Ans. (4)

127. Which one of the following is a primary consumer in maize field ecosystem ?

- (1) Grasshopper (2) Wolf
(3) Phytoplankton (4) Lion

Ans. (1)

128. During the process of isolation of DNA, chilled ethanol is added to :

- (1) Precipitate DNA
(2) Break open the cell to release DNA
(3) Facilitate action of restriction enzymes
(4) Remove proteins such as histones

Ans. (1)

129. When man eats fish which feeds on zooplankton which have eaten small plants, the producer in the chain is:

- (1) Small plants (2) Fish
(3) Man (4) Zooplankton

Ans. (1)

130. Syngamy can occur outside the body of the organism in :

- (1) Mosses (2) Algae
(3) Ferns (4) Fungi

Ans. (2)

131. $\text{DNA} \xrightarrow{\text{C}} \text{mRNA} \xrightarrow{\text{B}} \text{protein} \xrightarrow[\text{A}]{\text{Proposed by}}$

The figure gives an important concept in the genetic implication of DNA . Fill the blanks A, B and C.

- (1) A - Maurice Wilkins
 B - transcription
 C - translation
(2) A - James Watson
 B - replication
 C - extension
(3) A - Erwin Chargaff
 B - translation
 C - replication
(4) A - Francis Crick
 B - translation
 C - transcription

Ans. (4)

132. Uridine, present only in RNA is :

- (1) nucleoside
(2) nucleotide
(3) purine
(4) pyrimidine

Ans. (1)

133. Which one of the following is one of the paths followed by air/O₂ during respiration in an adult male *Periplaneta americana* as it enters the animal body ?

- (1) Spiracle in metathorax, trachea, tracheoles, oxygen diffuses into cells
(2) Mouth, bronchial tube, trachea, oxygen enters cells
(3) Spiracles in prothorax, tracheoles, trachea oxygen diffuses into cells
(4) Hypopharynx, mouth, pharynx, trachea, tissues

Ans. (1)

134. Which of the following statements about enzymes is wrong ?

- (1) Enzymes are denatured at high temperatures
(2) Enzymes are mostly proteins but some are lipids also
(3) Enzymes are highly specific.
(4) Enzymes require optimum pH and temperature for maximum activity.

Ans. (2)

135. Which organization publishes the 'Red Data Book' ?

- (1) IUCN
(2) UNEP
(3) WWF
(4) GEF

Ans. (1)