A

21735 **120 MINUTES**

1. Transfer of Taenia to secondary host occurs as:
   A) oncosphere B) cysticercus
   C) cercaria D) egg.

2. In frog, "fenestra ovalis" is:
   A) The communication between the pharynx and the tympanic cavity
   B) The external opening of the tympanic cavity which is covered by the tympanic membrane
   C) The air filled cavity of the middle ear
   D) The opening in the auditory capsule which separates the middle ear from the internal ear.

3. Which of the following pairs are correct matches?
   1. Crocodile – 4-chambered heart
   2. Sea urchin – Parapodia
   3. Obelia – Metagenesis
   4. Lemur – Thecodont

   A) 2, 3 & 4 only B) 1 & 4 only \
   C) 1 & 2 only D) 1, 3 & 4 only

4. Which of the followint is <u>not</u> considered an insect growth regulator?
   A) Synthetic pyrethroid B) Juvenile hormone analogue
   C) Chitin inhibitor D) Ecdysteroid

5. The sterile-male technique would probably not work well for an insect pest whose:
   A) Population is extremely abundant
   B) Individuals are easily mass reared
   C) Females mate only once in their lifetime
   D) Males are very strong fliers

6. Which one of the following is a part of Geological cycle?
   A) Hydrological cycle B) Nitrogen cycle
   C) Hydrogen cycle D) Carbon cycle

7. Bartholin's glands are situated:
   A) on the sides of the head of some amphibians
   B) at the reduced tail end of birds
   C) on either side of vagina in humans
   D) on either side of vas deferens in humans

8. Match the following enzymes with its substrates-

a) Hexokinase	1. Fructose-1,6 bisphosphate
b) Pyruvate kinase	2. 2-phosphoglycerate
c) Enolase	3. Phospho-enol pyruvate
d) Aldolase	4. Glucose

A) a-4, b-3, c-2, d-1 B) a-2, b-1, c-4, d-3
C) a-4, b-2, c-3, d-1 D) a-1, b-4, c-2, d-3

9. Which of the following statement is correct about membrane cholesterol?
A) The hydroxyl group is located near the centre of the lipid layer
B) Most of the cholesterol is in the form of a cholesterol ester
C) The steroid nucleus form forms a rigid, planar Structure
D) The hydrocarbon chain of cholesterol projects into the extracellular fluid

10. Koshland's theory of enzyme action is known as:
A) Lock and key theory B) Reduced fit theory
C) Induced fit theory D) Enzyme coenzyme theory

11. Which of the following phospholipids is localized to a greater extent in the outerleaflet of the membrane lipid bilayer?
A) Choline phosphoglycerides
B) Ethanolamine phosphoglycerides
C) Inositol phosphoglycerides
D) Serine phosphoglycerides

12. The following points about microfilaments are true except:
A) They form cytoskeleton with microtubules
B) They provide support and shape
C) They form intracellular conducting channels
D) They are involved in muscle cell contraction

13. Histones are:
A) Identical to protamine
B) Proteins rich in lysine and arginine
C) Proteins with high molecular weight
D) Insoluble in water and very dilute acids

14. Inactive zymogens are precursors of all the following gastrointestinal enzymes Except:
A) Carboxypeptidase B) Pepsin
C) Amino peptidase D) Chymotrypsin.

15. The deficiency of both energy and protein causes:
A) Marasmus B) Kwashiorkar C) Diabetes D) Beri-beri

16. During each cycle of β-oxidation:
A) One carbon atom is removed from the carboxyl end of the fatty acid
B) One carbon atom is removed from the methyl end of the fatty acid
C) Two carbon atoms are removed from the carboxyl end of the fatty acid
D) Two carbon atoms are removed from the methyl end of the fatty acid

17. The bond present in the primary structure of protein?
A) Ester B) Hydrogen C) Ionic bond D) Peptide

18. Which of the statements given below is/are correct with reference to productivity ?
1. Primary production is defined as the amount of biomass or organic matter produced per unit area over a time period by plants during photosynthesis.
2. The rate of biomass production is called productivity.
3. Net primary productivity of an ecosystem is the rate of production of organic matter during photosynthesis.
4. Secondary productivity is defined as the rate of formation of new organic matter by consumers.

A) 1, 2 and 3 only B) 1, 2 and 4 only
C) 1, 2, 3 and 4 D) 1 and 3 only

19. Which one of the following groups of animals belongs to the category of endangered species?
A) Great Indian Bustard, Musk Deer, Red Panda and Asiatic Wild Ass
B) Kashmir Stag, Cheetah, Blue Bull and Great Indian Bustard
C) Snow Leopard, Swamp Deer, Rhesus Monkey and Saras
D) Lion-tailed Macaque, Blue Bull, Hanuman Languor and Cheetah.

20. Which of the following are declared Tiger Reserves?
1. Bandipur 2. Bhitarkanika 3. Manas 4. Sunderbans

A) 1 and 2 only B) 1, 3 and 4 only
C) 2, 3 and 4 only D) l, 2, 3 and 4

21. The ecosystem known as the 'Land of Big Games':
A) Prairie B) Taiga C) Savannah D) Selvas

22. The Ramsar convention is associated with :
A) Wet lands B) Dry lands C) Forests D) Bio fuels

23. Which one of the following adopted "Agenda 21"?
A) Kyoto Protocol
B) Montreal Protocol
C) Summit on Sustainable Development
D) Reo De Genero Earth Summit

24. The categories of protected areas in India where local people are not allowed to collect and use the biomass:
A) Biosphere Reserves B) National Parks
C) Declared areas as wetlands D) Wildlife Sanctuaries

25. The formation of ozone hole in the Antarctic region has been a cause ofconcern. What could be the reason for the formation of this hole ?

A) Presence of prominent tropospheric turbulence; and inflow of chlorofluorocarbons.
B) Presence of prominent polar front and stratospheric clouds; and inflow of chlorofluorocarbons.
C) Absence of polar front and stratospheric clouds; and inflow of methane and chlorofluorocarbons.
D) Increased temperature at polar region due to global warming.

26. **Assertion(A)**: Cytoplasmic inheritance occurs only due to plasma genes.
Reason(R): Plasma genes are restricted to only two cell organelles mitochondria and chloroplast

A) A is true but R is false
B) A is false but R is true
C) Both A and R are true and R is correct explanation of A
D) Both A and R are true but R is not correct explanation of A

27. In homology modelling the most suitable BLAST is:

A) PSI-BLAST B) PHI-BLAST
C) GEOI-BLAST D) rp-BLAST

28. With reference to the Geological Time Scale, which of the following statement/s is/are correct?

1. Sometime around 3,800 million years ago, life began to evolve.
2. Extinction of Dinosaurs happened in Jurassic period .
3. The Quaternary Period began with an ice age about 2 million years ago. It is often called the Age of Humans. It is divided into two epochs: Holocene and Pleistocene.

A) 1 and 2 only B) 2 only C) 1 and 3 only D) 1, 2 and 3

29. The notion of "fixed action patterns" to describe animal behaviour was developed by:

A) Herbert Spencer B) Niko Tinbergen
C) Alfred Russell Wallace D) Konrad Lorenz

30. **Assertion(A)**: Microfilariae can be detected from peripheral human blood only during night
Reason(R): Microfilariae remain inactive throughout day time

A) Both A and R are true and R is correct explanation of A
B) Both A and R are true but R is not correct explanation of A)
C) A is true but R is false
D) A is false but R is true

31. Which of the following statement/s is/are incorrect?
    1. The exclusive right for declaring certain area as 'Wildlife Sanctuaries' lies with the state govt. while the exclusive right for declaration of 'National Parks' lies with the central govt.
    2. National parks can be created for protection of a particular species while Wildlife sanctuaries are not primarily focused on a particular species.

    A) 1 only B) 2 only
    C) Both 1 and 2 D) None of these

32. Failure of descending testis into the scrotum is known as:
    A) Paedogenes B) Castration
    C) Cryptorchidism D) Paedophilia

33 Embryonic stem cells of mammals are derived from:
    A) Trophoectoderm B) Inner cell mass
    C) Gametes D) Blastocoel

34. The ability of the cell or tissue to respond to a specific induction signal is known as:
    A) Competence B) Morphogenesis
    C) Ingression D) Potency

35. Which one of the following is true about Herpes viruses?
    A) Icosahedral, with envelope, ds DNA
    B) Polyhedral with envelope, ds DNA
    C) RNA, helical with envelope
    D) ds DNA, brick shape

36. Peptone water medium is an example for:
    A) Synthetic medium B) Semisynthetic medium
    C) Differential medium D) None of these

37. An example of competitive inhibition of an enzyme is the inhibition of
    A) Succinic dehydrogenase by malonic acid
    B) Cytochrome oxidase by cyanide
    C) Hexokinase by glucose-6-phosphate
    D) Carbonic anhydrase by carbon dioxide

38. Plasmids are ideal vectors for gene cloning as:
    A) They can be multiplied by culturing
    B) They can be multiplied in the laboratory using enzymes
    C) They can replicate freely outside the bacterial cell
    D) They are self replicating within the bacterial cell

39. Crossing-over occurs during:
    A) Prophase I B) Prophase II C) Anaphase I D) Telophase II

40. Out of the following which are the examples of autoimmune disease?
    A) Acquired Haemolytic anaemia
    B) Rheumatoid arthritis
    C) Hashiomoto disease
    D) All of these

41. Nucleic acids are highly negatively charged polymers because:
    A) There is phosphodiester bond between 5'- hydroxyl of one ribose and 3'– hydroxyl of next ribose
    B) They have positive and negative ends
    C) Nucleotides are charged structures
    D) Nitrogenous bases are highly ionized compounds

42. The antibody that is first formed after infection is:
    A) IgG B) IgM C) IgD D) IgE

43. The order of stains in Gram-staining procedure is:
    A) Crystal violet, Iodine solution, Alcohol,Saffranine
    B) Iodine solution, Crystal Violet, Saffranine,Alcohol
    C) Alcohol, Crystal Violet, Iodine solution,Saffranine
    D) All of these

44. What is the function of bacterial capsule?
    A) Protection of organism from phagocytosis
    B) Helps in adherence of bacteria to surface in it's environment
    C) Both A and B
    D) None of these

45. The transfer of genetic material during transformation was proved based on Griffith's experiment by:
    A) Avery Macleod &Mc Carthy
    B) Lederberg &Taulum
    C) Zinder & Lederberg
    D) Watson & Crick

46. The coating of a bacterium with antibody or complement that leads to enhanced phagocytosis of the bacterium by phagocytes is called:
    A) Opsonisation B) Aggulation C) CFT D) None of these

47. Lyophilization means:
    A) Sterilization B) Freeze-drying
    C) Burning to ashes D) Exposure to formation

48. The principle in microbiological assays is:
    A) At certain range the concentration of growth factor will bear a linear relationship to the amount of nutrients added
    B) Concentration of growth factor have a linear relationship with the growth of the organism
    C) Both A and B
    D) None of the above

49. One of the genes present exclusively on the X-chromosome in humans is concerned with:
    A) Baldness
    B) Red-green colour blindness
    C) Facial hair/moustache in males
    D) Night blindness

50. Example of anaerobic medium:
    A) Wilson Blair medium
    B) Mc Conkey broth
    C) Robertson's cooked meat medium
    D) EMB agar

51. Oxygenated blood is carried to the heart by which of the following structures?
    A) Aorta B) Carotid arteries
    C) Inferior vena cava D Pulmonary veins.

52. Microbiosensors are based on:
    A) Ions effect B) Ionsensitive field effect transistor
    C) Piezoelectric effect D) magnetic effect

53. High resolving power of electron microscope is related to:
    A) Electromagnets
    B) Long wavelength of electrons
    C) Short wavelength of electrons
    D) High voltage

54. The tool used for the identification of motifs:
    A) BLAST B) COPIA
    C) PROSPECT D) Pattern hunter

55. Proteomics refers to the study of:
    A) Set of proteins in a specific region of the cell
    B) Informational proteins
    C) Set of proteins
    D) The entire set of expressed proteins in the cell

56. The computational methodology that tries to find the best matching between two molecules, a receptor and ligand are called:
    A) Molecular fitting B) Molecular matching
    C) Molecular docking D) Molecule affinity checking

57. Margaret Dayhoff developed the first protein sequence database called:
    A) SWISS PROT
    B) PDB
    C) Atlas of protein sequence and structure
    D) Protein sequence databank

58. An example of Homology & similarity tool?
    A) PROSPECT B) EMBOSS C) RASMOL D) BLAST

59. Wish bone of birds is from:
A) Pelvic girdle B) Skull
C) Hind limbs D) Pectoral girdle

60. Typhlops is:
A) Sea snake B) Glass snake C) Blind snake D) Grass snake

61. Bird vertebrae are:
A) Acoelous B) Heterocoelous
C) Amphicoelous D) Procoelous

62. The simplest type of canal system in Porifera is:
A) Ascon type B) Leucon type C) Sycon type D) Radial type

63. Aristotle's lantern occurs in class:
A) Echinoidea B) Asteroidea
C) Holothuroidea D) Ophiuroidea

64. Cleavage in mammals is:
A) Holoblastic equal B) Holoblastic unequal
C) Superficial D) Discoidal.

65. What is the mode of action of organophosphate insecticides?
A) Chitin-synthesis inhibition
B) Changing the ion permeability of membrane
C) Physical suffocation
D) Acetylcholinesterase inhibition

66. Corpora cardiaca produce:
A) Juvenile Hormone
B) Ecdysone
C) Prothoracicotropic Hormone
D) All the above

67. Lichens are the best indicator of:
A) Noise pollution B) Soil pollution
C) Water pollution D) Air pollution

68. With reference to detritus food chain (DFC), which of the following statement/s is/are correct?
1. Decomposers are also known as saprotrophs.
2. Dead plant remains such as leaves, bark, flowers and dead remains of animals, including fecal matter, constitute detritus.
3. Detritivores break down detritus into smaller particles. This process is called fragmentation.
A) 1 and 2 only B) 2 only C) 1, 2 and 3 D) 2 and 3 only

69. Insect embryo undergo:
A) Rotational cleavage forming syncytium
B) Spiral cleavage forming cells of unequal size
C) Superficial cleavage forming syncytium
D) Gastrulation without cleavage divisions

70. Embryonic stem cells are -------- whereas adult stem cells are------.
A) Unipotent; totipotent B) Pluripotent; multipotent
C) Multipotent; totipotent D) Pluripotent; unipotent

71. In frog, the sperms released from the testis take the following route to reach the ureter:
A) Vasa efferentia, Bidder's canal, uriniferous tubule and nephrotome
B) Vasa efferentia, Bidder's canal, and uriniferous tubule
C) Vasa efferentia, uriniferous tubule nd Bidder's canal.
D) Vasa deferentia, uriniferous tubule and Bidder's canal

72. Sexual reproduction in larval condition is known as:
A) Paedogamy B) Autogamy C) Isogamy D) Anisogamy

73. The notochord is one of a few prominent structural features in chick embryo of about.
A) 15 hours B) 18 hours C) 13 hours D) 10 hours

74. What is tautonym?
A) These are the repeated sequences
B) It is a specimen identified described for the first time
C) Identical name of genus and species
D) It is a name of the genus

75. Which one of the following is NOT covered under Taxonomy?
A) Alpha taxonomy B) Beta taxonomy
C) Delta taxonomy D) Gamma taxonomy

76. Holotype is a specimen:
A) Nomenclature type used by author
B) Nomenclature type when the original is missing
C) Nomenclature type when the lectotype is missing
D) Synonym of paratype

77. Match the following immunglobulins with their respective occurrences:

a. IgM	1.	In the seromucous secretions
b. IgG	2.	After the primary antigenic stimulus
c. IgA	3.	Synthesized during secondary response
d. IgE	4.	Serum

A) a-2, b-3, c-1, d-4 B) a-4, b-1, c-3, d-2
C) a-3, b-4, c-1, d-2 D) a-4, b-3, c-2, d-1

78 Phylogenetic system differs from a natural system in its stress on:
A) Anatomical details B) Physiological traits
C) Morphological details D) Origin and evolutionary trends

79. Lectotype is:
A) Duplicate of holotype
B) Specimen described along with holotype
C) Specimen cited by author without making one holotype
D) Specimen selected from original material for nomenclature type when there is no holotype

80. At which of the following locations does bile enter the digestive tract?
A) Gastroesophageal sphincter B) Duodenum
C) Ileocecum D) Jejunum

81. Which of the following best describes the location where the carotid pulse can be found?
A) In front of the ears and just above eye level
B) In the antecubital space
C) On the medial aspect of the wrist
D) On the anterior side of the neck

82. In men, which of the following structures is located at the neck of the bladder and surrounds the urethra?
A) Epididymis B) Prostate
C) Scrotum D) Seminal vesicle

83. Which of the following is the lymphoid organ that is a reservoir for red blood cells and filters organisms from the blood?
A) Appendix B) Thymus C) Pancreas D) Spleen

84 **Assertion(A):** During DNA synthesis the newly synthesizing nucleotides are assembled only in 5'-3' direction in the leading strand
Reason (R): All DNA polymerase enzymes are having 5'-3' exonuclease activity

A) Both A and R are true and R is correct explanation of A
B) Both A and R are true but R is not the correct explanation of A
C) A is true but R is false
D) A is false but R is true

85. **Assertion(A):** Intrinsic termination method of protein synthesis is a built in mechanism in which the transcribed RNA itself is responsible for the transcription
Reason (R): In this method of chain termination, the transcript assumes a stem loop formation with the help of Rho factor

A) Both A and R are true and R is correct explanation of A
B) Both A and R are true but R is not the correct explanation of A
C) A is true but R is false
D) A is false but R is true

86. Match the following micro organisms with their respective characteristic

a. Bacteria	1.	Much similar, contains one type of nucleic acid, do not reproduce by binary fission
b. Rickettsia	2.	Parasites on bacteria, highly specific to one type of host
c. Viruses	3.	Living organism, unicellular, motile, microscopic and show reproduction
d Bacteriophages	4.	Tiny microorganism, enable to grow outside living cells, retained by bacteria filters

A) a-2, b-1, c-3, d-4 B) a-3, b-4, c-1, d-2
C) a-4, b-3, c-2, d-1 D) a-4, b-2, c-1, d-3

87. Match the following organisms with their respective structures

a. Pinaeus	1. Trachea
b. Musca	2. Bookgill
c. Taratulus	3. Dendrobranch
d. Limulus	4. Booklung

A) a-4 , b-3, c-2, d-1 B) a-3, b-2, c-1, d-4
C) a-1, b-2, c-3, d-4 D) a-3, b-1, c-4, d-2

88. Certain proteins or mRNAs that are regionally localized within the unfertilized egg and regulate development are called
A) Gene Regulators B) Morphometric Determinants
C) Cytoplasmic Determinants D) Mosaic Forming Factors

89. Natural killer cells:
A) Belongs to B-cell lineage
B) Belongs to T-cell lineage
C) Display cytotoxic effect on tumour cell
D) Require previous antigen exposure for activation

90. A site of active mRNA synthesis is:
A) Gene loci B) Extra arm
C) Balbiani ring D) Ribosomal RNA gene.

91. Phenomenon involves gradual fading of an unrelated response to a stimulus that proves to be safe or irrelevant.
A) Conditioning B) Habituation
C) Learning D) Motivation.

92. Match the following

Column I	Column II
a. Radial cleavage	1. Echinodermata
b. Spiral cleavage	2. Mollusca
c. Bilateral cleavage	3. Ascidia
d. Irregular cleavage	4. Coelenterata

A) a-1, b-2, c-3, d-4 B) a-1, b-3, c-2, d-4
C) a-4, b-3, c-2, d-1 D) a-3, b-2, c-4, d-1

93. Patau syndrome is due to trisomy of chromosome number:
A) 13 B) 18 C) 20 D) 21

94. Which of the following statements about rhodopsin is true?
A) Rhodopsin is the primary photoreceptor of both rods and cones
B) The prosthetic group of rhodopsin is all trans retinol derived from beta carotene
C) Rhodopsin is located in the cytosol of the cell
D) Absorption of a photon by rhodopsin causes an isomerization of 11 cis-retinol to all trans- retinol

95. Which of the following is incorrectly paired with the excretory organs?
A) Insect - Malpighian tubules
B) Flame cells - Flame bulb system
C) Earthworm - Protonephridia
D) Amphibian - Kidneys

96. Nociceptors sense:
A) Pressure B) Pain C) Heat D) Touch

97. Zinc is a component of active:
A) Insulin B) Progesterone C) Prolcatin D) Prostaglandins

98. The functions of calmodulin is to:
A) begin an enzyme cascade by phosphorylating multiple protein
B) lower blood calcium level
C) bind with Ca^{2+} and regulate the activity of cellular proteins
D) serve as a second messenger in a signal transduction pathway.

99. A tumour suppressor gene p^{53} functions as:
A) Cell cycle checkpoints B) Transcription factor
C) Cyclin D Kinase D) DNA mismatch repair

100. Match list I (distinguishing features based on chromosomal appearance) with list II (stage of meiosis)

List I	List II
a. Terminal chiasma	1. Pachytene
b. Exchange of segments of chromatids	2. Zygotene
c. Synapsis of homologous chromosome	3. Diakinesis
d. Appearance of chiasma	4. Diplotene

A) a-4, b-2, c-3, d-1 B) a-3, b-1, c-2, d-4
C) a-2, b-4, c-1, d-3 D) a-2, b-4, c-3, d-1

101. What is keystone species?

A) A species which makes up only a small proportion of the total biomass of a community , yet has a huge impact on the community's organization and survival
B) A common species that has plenty of biomass , yet has fairly low impact on the community's organization
C) A rare species that has minimal impact on the biomass and on other species in the community
D) A dominant species that constitutes a large proportion of biomass which affect many other species

102. Hox genes:
A) encodes transcription factors which specify a position along the anterior- posterior axis in vertebrates
B) make signaling molecules used during somite formation
C) control the function of vertebrates in mice, but not found in other vertebrates
D) are expressed only in mesoderm

103. Homeobox polypeptide segments:
A) serves as histones, facilitating DNA packing
B) bind to DNA and activate or repress gene transcription
C) vastly different in different organisms
D) acts as enzymes, carrying out important chemical reactions

104. Shine- Dalgaro sequence is also known as:
A) Ribosome binding site
B) RNA binding site
C) Silent gene
D) sn RNA

105. Bouguer's law relates:
A) Light reflection B) Light refraction
C) Light transmission D) Light absorption

106. pBR322 which is frequently used as a vector for cloning gene in E. coli is:
A) an original bacterial plasmid
B) a modified bacterial plasmid
C) a viral genome
D) a transposon

107. DNA fingerprinting process involves:
A) Chain terminators B) Degenerate oligonucleotides
C) VNTR loci D) RFLPs

108. Match the List-I with List-II

	List-I		List-II
a.	X- ray crystallography.	1	Cell surface and larger objects
b.	Phase contrast microscope.	2	Examine unstained and dividing cells.
c.	SEM.	3	Separation of subcellular components.
d.	Centrifugation.	4	Spatial arrangement of atoms in molecules.

A) a-3, b-4, c-2, d-1 B) a-2, b-1, c-3, d-4
C) a-1, b-3, c-4, d-2 D) a-4, b-2, c-1, d-3

109. Comprehensive database which gives information about on going genome projects worldwide is :

A) DDBJ B) ORF C) GOLD D) KEGG

110. In counter current exchange:
A) the flow of fluids in opposite directions maintain a favourable diffusion gradient along the length of an exchange surface
B) oxygen is exchanged for carbon dioxide
C) double circulation keeps oxygenated and deoxygenated blood separately D)
D) oxygen moves from a region of high partial pressure to one of low partial pressure, but CO_2 moves in opposite direction

111. Match the following

List I (Mitochodrial enzyme)		List II (Location of enzymes)
a. Cytochrome oxidase.	1.	Outer chamber of mitochondria
b. Fatty acid CoA ligase.	2.	Inner membrane of mitochondria
c. Adenylate kinase.	3.	Mitochondrial matrix.
d. Malate dehydrogenase.	4.	Outer membrane of mitochondria

A) a-1, b-3, c-2, d-4 B) a-2, b-4, c-1, d-3
C) a-1, b-4, c-2, d-3 D) a-2, b-3, c-1, d-4

112. For class I MHC, which of the following statements are correct?
1. They are expressed on all nucleated cells
2. They are made up of heavy chain and light chain
3. They are essential for viral antigen recognition by cytotoxic cells
4. The gene s for HLA class I molecules are located on chromosome 6 and 15

A) 1 & 3 only B) 1& 2 only
C) 2 & 3 only D) 1, 3 & 4 only

113. The kingdom Protista contains:
A) Prokaryotic unicellular autotrophic organism
B) Eukaryotic unicellular photosynthetic / non- photosynthetic organisms
C) Prokaryotic multicellular heterotrophic organisms
D) Eukaryotic multicellular heterotrophic organisms

114. The mid- blastula transition is the point in development when:
A) Translation of maternal mRNA is initiated
B) Cell differentiation becomes fixed
C) Cell division in the embryo ends
D) Transcription of zygotic genes begins

115. The function of the TCA cycle is catalyzes by all of the following statements except:
A) It generates reduced NAD+ and reduced FAD
B) It generates guanosine triphosphate
C) It catalyzes the complete oxidation of acetate to CO_2 and H_2O
D) It causes the net synthesis of oxaloacetate from acetyl CoA

116. Peyers patches found in the small intestine are:
A) Epithelial tissue B) Glandular tissue
C) Lymphatic tissue D) Haemopoietic tissue

117. Vitamin H is also known as:
A) Tocopherol B) Phylloquinone
C) Biotin D) Nicotinic acid

118. Which of the following makes it possible to calculate the pKa of any acid from molar ratio of protein donor?
A) Henderson-Hasselbalch equation
B) Jennings Kaback equation
C) Arnon- Jegendorf equation
D) All the above

119. Which of the following combination is most likely to be present before ovulation occurs?
A) FSH, Follicle, estrogen, uterine lining becomes thick
B) LH, Corpus luteum, progesterone, secretory uterine lining
C) FSH, Corpusluteum, estrogen, secretory uterine lining
D) LH, Follicle, progesterone, thick uterine lining.

120. Match the following

	List I	List II
a.	Allen's rule	1. Pigmentation
b.	Gloger's rule	2. No. of vertebrae
c.	Bergman's rule	3. Size of animals
d.	Jordan's rule	4. Length of extremities

A) a-1, b-2, c-3, d-4 B) a-2, b-3, c-1, d-4
C) a-3, b-4, c-2, d-1 D) a-1, b-2, c-4, d-3