91. In the five kingdom classification, *Chlamydomonas* and *Chlorella* have been included in

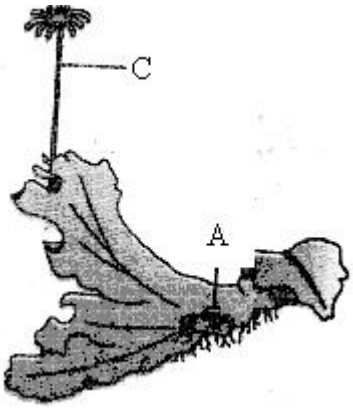
1) Protista 2) Algae 3) Plantae 4) Monera

92. Maximum nutritional diversity is found in which of the following groups

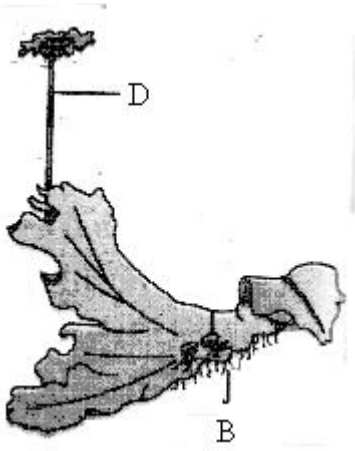
1) Fungi 2) Animalia 3) Monera 4) Plantae

93. The given figures show thalli of a liverwort. Identify the parts labelled as A, B, C, D in that

a)



b)



1) A - gemma cup ; B - rhizoids ; C- Roots ; D - Archegoniophore
2) A - sporophyte ; B: rhizoids ; C - archegoniophore ; D - antheridiophore
3) A - gemma cup ; B - rhizoids ; C - archegoniophore ; D - antheridiophore
4) A - gemma cup ; B - roots ; C - archegoniophore ; D - antheridiophore

94. Consider the following statements regarding gymnosperms and choose the correct option.

A) In gymnosperms, the male and female gametophytes have an independent existence

2) The multicellular female gametophyte is called endosperm

3) The gymnosperms are heterosporous

1) A and B are true but C is false 2) A and C are true but B is false
3) B and C are false but A is true 4) B and C are true but A is false

95. How many plants in the list given below have tap root modifications - Banyan, *Vanda*, Turnip, Sweet potato, Groundnut, Sugarcane, *Monstera*

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

ROUGH

96. Aerial roots are modified for both absorption and assimilation in this genus

1) *Vanda* 2) *Monstera* 3) Banyan 4) *Taeniophyllum*

97. The structure which contains vascular bundle and is the modification of stem is

1) Spine 2) Trichome 3) Thorn 4) Prickle

98. Green leaf like modified branches with a single internode are called

1) Phyllode 2) Phylloclade 3) Bulbils 4) Cladode

99. Find the correct match:

1) Mustard plant : leaves are opposite

2) Guava plant : leaves are alternate

3) Nerium plant : leaves are whorled

4) Calotropis plant : leaves are alternate

100. Which of the following is not a tendril climber

1) *Smilax* 2) *Pisum* 3) Grape vine 4) Bean

101. Cup shaped structure in the flower of guava is

1) Thalamus 2) Peduncle 3) Bracts 4) Ovary

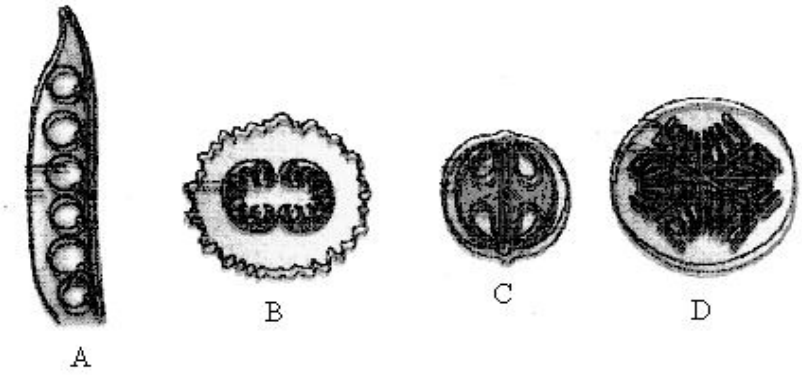
102. A character not applicable to chinarose is

1) Alternate phyllotaxy

2) Twisted aestivation in the second whorl of flower

3) Cohesion in the third whorl of flower 4) Solitary, terminal inflorescence

103. Identify the types of placentations in the diagrams A, B, C, D given below respectively



1) Marginal, axile, parietal, basal 2) Marginal, axile, parietal, parietal

3) Marginal, parietal, parietal, axile 4) Parietal, axile, parietal, marginal

ROUGH

104. Fleshy fruits that develop from inferior ovaries are found in

1) Sunflower, apple, cucumber
2) Apple, cucumber, citrus
3) Tomato, grapes, guava
4) Guava, apple, cucumber

105. Apomictic embryos in *Citrus* arise from

1) Synergids
2) Maternal sporophytic tissue in ovule
3) Antipodal cells
4) Diploid egg

106. Incorrect statement among the following

1) In mustard flower stamens have no adhesion or cohesion
2) In thorn apple stamens have adhesion, but not cohesion
3) In sunhemp stamens have cohesion, but not adhesion
4) In lily stamens have both cohesion and adhesion

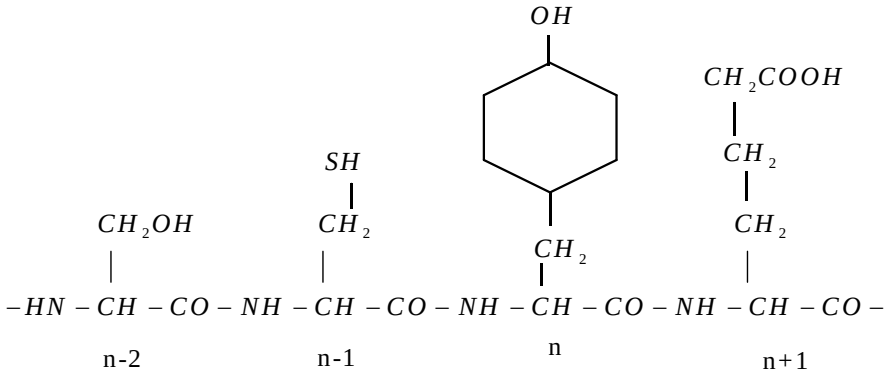
107. Which of the following is wrongly matched:

1) *Aloe* - medicine
2) *Sesbania* - green manure
3) Thorn apple - fumigatory
4) *Asparagus* - vegetable

108. Which of the following biomolecules is correctly characterised ?

1) Lecithin - a phosphorylated glyceride found in cell membrane
2) Palmitic acid - an unsaturated fatty acid with 18 carbon atoms
3) Adenylic acid - adenosine with glucose phosphate molecule
4) Alanine amino acid - contains an amino group and acidic group anywhere in the molecule.

109. Identify the amino acids n-2, n-1, n, n+1 in the following representation of primary structure a hypothetical protein



1) Glutamic acid, Tyrosine, Cysteine, Serine
2) Serine, cystine, Tyrosine, Glutamic acid
3) Serine, Tyrosine, Glutamic acid, Cystine
4) Serine, Cystein, Tyrosine, Glutamic acid

ROUGH

110. What is true about ribosomes

1) The prokaryotic ribosomes are 80 S, where "S" stands for sedimentation co-efficient

2) These are composed of ribonucleic acid and protein

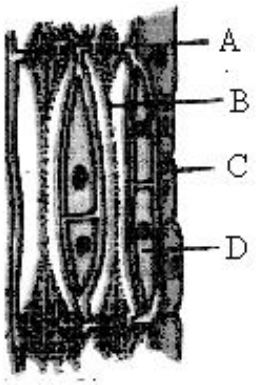
3) These are found only in eukaryotic cells

4) These are self - splicing introns of some ribozymes

111. If mitotic division is restricted in the G_1-Phase of a cell cycle then the condition is known as

1) S-Phase 2) G_2-Phase 3) M-Phase 4) G_0-Phase

112. In the following diagram of phloem identify the parts labelled as A, B, C, D



1) A - Sieve pore, B - Sieve tube element, C-companion cell, D-Phloem parenchyma

2) A - Sieve pore, B-sieve tube element, C-Phloem parenchyma, D-Companion cell

3) A-perforation plate, B-Sieve element, C-Phloem parenchyma, D-companion cell

4) A-Sieve pore, B-companion cell, C-sieve tube element, D- Phloem parenchyma

113. Which of the following statements is correct for secondary succession

1) It begins on a bare rock 2) It occurs on a deforested site

3) It follows primary succession

4) It takes place slowly than that of primary succession

114. A cell is equally permeable to sucrose solution and NaCl solution. First the cell is put in 0.6 M sucrose solution, there is no change in size but when put in 0.6 M NaCl solution the size will

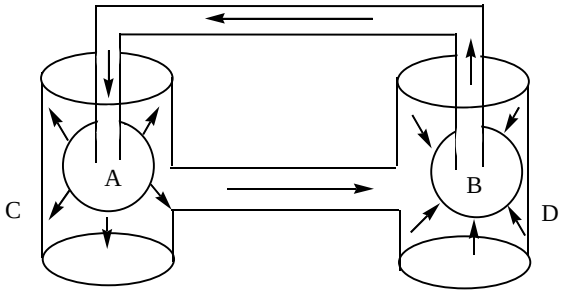
1) Increase 2) Decrease 3) Remain same 4) Can't be said

115. Stomata open at night in

1) hydrophytes 2) Succulents 3) mesophytes 4) halophytes

ROUGH

116. In the illustration of mass flow by Munch, identify A, B, C, D respectively



1) A- dilute solution, B- concentrated solution, C-sink, D- source

2) A- dilute solution, B- concentrated solution, C-source, D-sink

3) A-concentrated solution, B-dilute solution, C- sink, D-pure water

4) A- dilute solution, B-concentrated solution, C- sink, D-purewater

117. Which inhibitors are often used in the control of bacterial pathogens

1) Feed back inhibitors 2) Non competitive inhibitors

3) Competitive inhibitors 4) Allosteric inhibitors

118. Photosynthesis in C_4 plants is relatively less effected by atmospheric CO_2 levels because

1) Effective pumping of CO_2 into bundle sheath cells

2) Rubisco in C_4 plants has higher affinity for CO_2

3) Four carbon acids are primary initial CO_2 fixation products

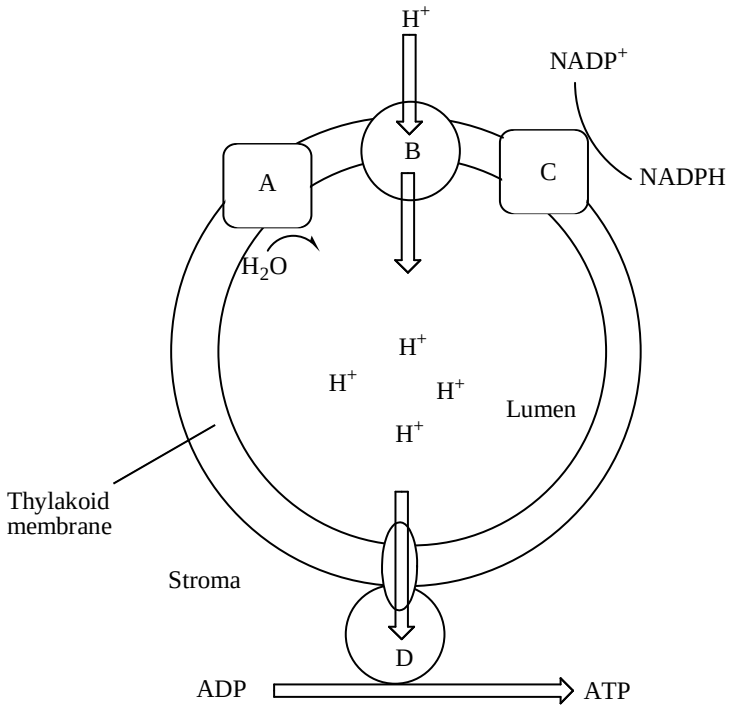
4) The primary fixation of CO_2 is mediated via PEP carboxylase

119. During the operation of non-cyclic photophosphorylation, the immediate source of electrons to P700 is

1) Cyt f 2) PC 3) PQ 4) Fd

ROUGH

120. The following diagram represents ATP synthesis through chemiosmosis. Identify A, B, C, D parts labelled in it



	A	B	C	D
1)	Photosystem –I	Cytochrome b and f	Photosystem –II	ATP synthase
2)	Photosystem–II	cytochrome b and f	Photosystem –I	CF_0
3)	Photosystem –II	Cytochrome b and f	Photosystem –I	ATP synthase
4)	Photosystem –II	ATP synthase	Photosystem–I	CFI

121. Assimilatory power used in bundlesheath cells of maize for the net production of one glucose molecule is

1) 30ATP, 12NADPH+H^+ 2) 12ATP, 6NADPH+H^+

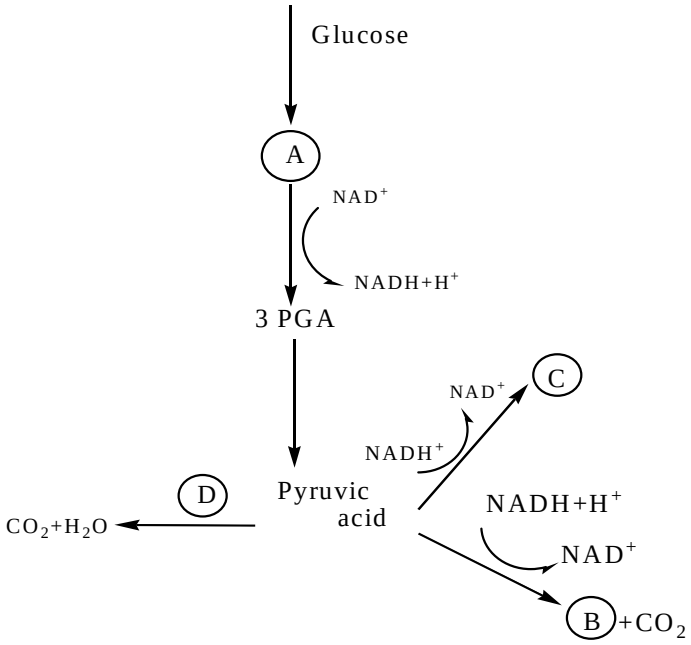
3) 18ATP, 12NADPH+H^+ 4) 30ATP, 18NADPH+H^+

122. ATP produced in the mitochondria per one glucose molecule is (both substrate phosphorylation and oxidation of all reduced coenzymes produced in cytoplasm and matrix)

1) 34 2) 32 3) 30 4) 24

ROUGH

123.



A, B, C, D in the above representation of respiration are

	A	**B**	**C**	**D**
1)	PGAL	Lactic acid	Ethanol	Aerobic respiration
2)	1,3 bis PGA	Ethanol	Lactic acid	Krebs cycle
3)	G-3-P	Ethanol	Lactic acid	Aerobic respiration
4)	F, 1,6 bis P	Ethanol	Lactic acid	Aerobic respiration

124. Bacteria with a tuft of flagella at one pole is known as

1) Lophotrichous 2) Monotrichous 3) Amphitrichous 4) Peritrichous

125. Mendel found that the reciprocal crosses yielded identical results, from this he concluded that

1) These is no independent assortment of traits

2) These is no dominance of any trait

3) Gametes are always pure for a particular trait

4) Sex has no influence on the dominance of traits

ROUGH

126. Mendel's principle of seggregation means germ cells always receive

1) One pair of alleles
2) One quarter of the genes
3) One of the paired alleles
4) Any pair of alleles

127. Select the correct statement from the ones given below with respect to dihybrid cross

1) Tightly linked genes on the same chromosomes show higher recombinations
2) Genes far apart on the same chromosome show very few recombinations
3) Genes loosely linked on the same chromosome show similar recombinations
4) Tightly linked genes on the same chromosome show very few recombinations

128. In the history of biology human genome project led to the development of

1) Biotechnology 2) Biomonitoring 3) Bioinformatics 4) Biosystematics

129. The purpose of polymerase chain reaction is

1) DNA modification
2) DNA amplification
3) DNA replication
4) DNA visualisation

130. Match the codons with their respective aminoacids and choose correct answer

Colum –I	**Colum –II**
A. UUU	**1. Serine**
B. GGG	**2. Methionine**
C. UCU	**3. Phenylalanine**
D. CCC	**4. Glycine**
E. AUG	**5. Proline**

1) A-3, B-4, C-1, D-5, E-2
2) A-3, B-1, D-4, D-5, E-2
3) A-3, B-4, C-5, D-1, E-2
4) A-2, B-4, C-1, D-5, E-3

131. Mutations which alter nucleotide sequence with in a gene are

1) Frame shift mutation
2) Base pair substitution
3) Both a and b
4) None of these

132. Restriction endonucleases are enzymes which

1) Make cut at specific positions within the DNA molecule
2) Recognise a specific nucleotide sequence for binding of DNA ligase
3) Restrict the action of the enzyme DNA polymerase
4) Remove nucleotides from the ends of the DNA molecule

ROUGH

133. Which of the following is a wrong match for a microbe and its industrial product

1) Yeast - statins
2) *Acetobacter aceti* - acetic acid
3) *Clostridium butylicum* - lactic acid
4) *Aspergillus niger* - citric acid

134. *Bacillus thuringiensis* forms protein crystals which contain insecticidal protein. This protein

1) Is coded by several genes including the gene cry
2) Does not kill the carrier bacterium which is itself resistant to the toxin
3) Is activated by acidic pH in the foregut of insect pest
4) Binds with epithelial cells of midgut in the insect pest ultimately killing it

135. Which of the following is a eukaryotic biofertilizer

1) *Nostoc*
2) NPV
3) *Rhizobium*
4) *Glomus*

ROUGH