2016 E.C EDIGET HIGHER SECONDARY SCHOOL BIOLOGY WORK-SHEET FOR GRADE 10th BOARDING STUDENTS

Choose the Correct Answer from the Given Alternatives

1. During which stage of meiosis do members of homologous pairs of chromosomes separate?

A. Prophase I B. Anaphase I C. Metaphase II D. Anaphase II

2. A cell having **2n=40** chromosomes divides mitotically, how many chromosomes are expected each daughter cell? A. 10 B. 20 C. 40 D. 80

3. The DNA of a certain organism has guanine as **30 percent** of its bases. What percentage of its bases would be counted for by **adenine**? A. 10% B. 20% C. 30% D. 60%

4. In humans' what are the chances that the body at birth would be a boy or a girl? A. 1:1 B. 1:2 C. 1:3 D. 3:1

5. The strand that is complementary to the DNA sequence give as **TAACCG**:
A. AUUGGC B. ATTGGC C. TAAGCG D. GCCAAT

6. In a DNA strand of 3000 bases, 40% of the molecules are known to belong to guanine base. How many adenine base molecules are present in the same DNA strand? A. 120 B. 300 C. 600 D. 1200

7. How many sperm cells are formed from 10 primary spermatocytes? A. 10 B. 20 C. 40 D.80

8. Choose the cells of the human body that are results of meiosis?
A. Bone cells B. Brain cells C. Egg cells D. Muscle cells

9. In the cell cycle, which of the following phases is divided into G2 stages?
A. Interphase B. Prophase C. Metaphase D. Telophase

10. Suppose a lady has given birth to four boys in a row. What is the chance that her next child will be a girl?
A. 100% B. 75% C. 50% D. 25%

11. How do the two strands of DNA combine to form a molecule?
A. A best of one strand pairs with a complementary base of the other strand
B. The phosphate of one strand combines with the phosphate of the other strand
C. The sugar of one strand combines with the complementary sugar of the other strand
D. A ribose sugar combines with a deoxyribose sugar on the same DNA strand

12. What are the three components of a DNA molecule?
A. Glucose, nitrogen and phosphorus C. Sugar, phosphate group, nitrogenous base
B. Protein, carbohydrate and fat with base D. Monosaccharide, disaccharide, polysaccharide

13. Maize plant has 2n = 20 chromosomes. What is the number of chromosomes in the endosperm tissue of maize?
A. 10 B. 20 C. 30 D. 40

14. How many daughter cells are produced from a single mitosis division?
A. Two B. Four C. Six D. Eight

15. In the life cycle of sexually reproduction organisms, which of the following processes restores the chromosome number from haploid to diploid state?
A. Fertilization B. Meiosis C. Chromosomes replication D. mitosis

16. Which of the following structures divides the cytoplasm of a plant cell into two halves?
A. Nuclear membrane B. Cell plate C. spindle D. Cleavage furrow

17. Which of the following contains phosphate group in its molecule?
A. Nucleotide B. Protein C. Cellulose D. Simple sugar

18. If it is known that the total amount of DNA in a cell contains 300 nucleotides and adenine contributes to 80 of these, how many nucleotides go to guanine? A. 35 B. 70 C. 80 D. 140

19. What proportion of the number of chromosomes found in a normal cell of an angiosperm plant is expected in its endosperm tissue? A. Half B. Same C. Two times D. Three times

20. Which of the following phases of mitosis if blocked would produce a cell with twice as many chromosomes as the mother cell? A. Interphase B. Prophase C. Anaphase D. Telophase

21. Why is it that the typical diploid chromosome number of many organisms including human beings is an even number? A. It is only a coincidence B. Chromosomes duplicate equal number of chromosomes
C. Both parents contribute equal number of chromosomes D. Meiosis reduces chromosomes number

22. If it is known that the total number of the purine bases account for 50% of a DNA molecule and if each of the remaining bases are known to have the same proportion, what proportion is accounted for by thymine along in the same molecule? A. 25% B.50% C. 75% D. 100%

23. How many different kinds of amino acids are there for protein synthesis?
A. Twenty B. Twenty-four C. Twenty-six D. Thirty-two

24. What would most likely results if mitosis fails to be accompanied by cytoplasmic division?
A. Two cells without nuclei C. One cell without nucleus
B. Two cells each with one nucleus D. One cell with two identical nuclei

25. How many chromosomes do humans inherit from each of their parents?
A. 23 chromosomes B. 46 chromosomes C. 23 pairs of chromosomes D. 46 pairs of chromosomes

26. Which of the following choices shows the end products of a mitotic cell division?
A. Gametes and ordinary cells C. Four genetically different cells
B. Two genetically different cells D. Two genetically identical cells

27. If a DNA contains 10% thymine, what is the percentage of cytosine in the DNA?
A. 10 % B. 30 % C. 40% D. 90 %

28. Which of the following is the correct constitution of the sex chromosome of a **normal woman**? A. XY B. XX C. XO D. XXY

29. In cell division, what is the phase that comes following the metaphase called?
A. Interphase B. Prophase C. Anaphase D. Telophase

30. If it is known that the total amount of DNA in a cell is 300 units and that adenine alone contributes **70** of these units, how many units go to cytosine? A. 40 units
B. 70 units C. 80 units D. 35 units

31. If a plant is known to have a diploid chromosome number of 12, how many chromosomes would each of its male gametes have? A. 3 B. 6
C. 12 D. 24

32. Which one of the following nucleotide pair bonds can be normally found in a DNA molecule?
A. Adenine-Guanine B. Guanine- Cytosine C. Cytosine- Uracil D. Adenine Cytosine

33. Which of the following nitrogenous bases of nucleic acid is a purine base?
A. Adenine B. Uracil C. Cytosine D. Thymine

34. If in a DNA molecule consisting of 1000 base pairs, there are 300 adenine bases, how many guanine bases will be present? A. 200 B. 400 C. 600
D. 700

35. If a cell has **2n = 24** chromosomes, how many chromosomes will each of its daughter cells have after **mitosis**? A.12 B.6 C.20 D.24

36. If a cell has 48 chromosomes, how many chromosomes will exist in each of its gametes? A.8 B.24 C.48 D.50

37. Mitosis has _____ phase(s). A. one B. two C. three D. four

38. The process where the cytoplasm divides is called_____.
A. anaphase B. telophase C. cytokinesis D. prophase

39. What is the role of the spindle fibers during mitosis?
A. They help separate the chromosomes. B. They break down the nuclear membrane.
C. They duplicate the DNA. D. They make the chromosomes visible.

40. Gametes are produced by the process of
A. mitosis. B. meiosis. C. crossing-over. D. replication.

41. Organisms that reproduce sexually are different from organisms that reproduce asexually in that sexually reproducing organisms have A. a larger number of offspring
B. more genetic variation among their offspring
C. offspring that are nearly identical to their parents D. offspring that are perfectly adapted to their parents' habitat

42. What is the process called when cells are copied with half the number of chromosomes? A. photosynthesis B. meiosis C. cellular respiration D. mitosis

43. A DNA molecule contains **200 nucleotides**; **20%** of them are **thymine**. What is the number of cytosine in this DNA molecule? A. 40 B. 80 C. 120 D. 60

44. How many chromosomes & daughter cells are produced from a cell having chromosome number **2n = 8**; undergoing meiosis? A. 4 chromosomes & 4 daughter cells. B. 8 chromosomes & 4 daughter cells.
C. 8 chromosomes & 2 daughter cells. D. 4 chromosomes & 2 daughter cells.

45. Synapsis and crossing over of chromosomes occurs in which phases of meiosis?
A. Interphase I B. Prophase I C. Meterphase I D. Teleophase I
46. The step of mitosis in which chromosomes line up along the equatorial plane of the cell is called: (A) Prophase (B) Metaphase (C) Anaphase (D) Telophase
47. Normal human eggs have:
(A) 22 autosomes and an X chromosome (C) 23 autosomes
(B) 22 autosomes and a Y chromosome (D) 46 chromosomes
48. Mitotic cell division results in two cells that have:
(A) n chromosomes and are genetically identical (B) n chromosomes and are genetically different
(C) 2n chromosomes and are genetically identical (D) 2n chromosomes and are genetically different
49. In tobacco, if the diploid number of chromosomes is 48, how many chromosomes will be found in a pollen grain? (A) 96 (B) 48 (C) 24 (D) 12
50. One of these is a tissue in the human body. Which one? A heart B stomach C muscle D uterus
51. Meiosis cell division takes place in the: A. nerve cells B. muscle cells C. germ cells D. somatic cells
52. The chamber of the heart which pumps blood to all parts of the body is:
A. Right auricle B. Right ventricle C. Left auricle D. Left ventricle
53. Suppose a person lost a lot of blood due to car accident. If his blood group is 'O'; for a successful blood transfusion the donor should be: A. B B. A C.O D. AB
54. Blood pressure is the pressure exerted by the blood on the walls of :
A. Arteries B. Veins C. Auricle D. Ventricle
55. Which of the following types of blood do not have antigens in its red blood cells?
A. B B. A C.O D. AB
56. In which part of the alimentary canal pepsin begins protein digestion?
A. Mouth B. Esophagus C. Stomach D. Small intestine
57. Which of the following is the main function of the large intestine?
A. Absorption of sugars B. Absorption of fatty acids C. Absorption of amino acids D. Absorption of water
58. If one injects a blue dye into the left ventricle; which of the following parts of the body will the dye appear next? A. left auricle B. Right ventricle C. Right auricle D. Pulmonary capillaries
59. From which blood group be transferred regardless of the recipient blood group?
A. B B. A C.O D. AB
60. Which of the following marriages is **Not** good because it is dangerous for the offspring? A. Rh+ woman & Rh+ man B. Rh+ woman & Rh- man C. Rh- woman & Rh- man D. Rh- woman & Rh+ man
61. A sudden change in the DNA of a Chromosome can usually be passed on the future generations; if the change occurs in a: A. Skin cell B. Liver cell C. Sex cell D. Brain cell

62. Growth of body tissue is a result of: A. Mitosis B. Meiosis C. Metamorphosis D. Mutation
63. What is the number of chromosomes in a human fertilized egg? A.23 B. 23 pairs C. 23-46 D. 46 pairs
64. Which of the following blood cells are involved in the blood clotting? A. Red blood cells B. Platelets C. White blood cells D. Lymph
65. The biotic components of an ecosystem is
A. Water & Soil B. Plants & animals C. Sun light & air D. Microorganisms & Water
66. Which of the following are producers? A. Cows B. Human beings C. Sheep D. Plants
67. The following one is not cyclic in nature. A. water B. Nitrogen C. Carbon D. Energy
68. Which of the following is a not nonrenewable resource?
A. Fossil fuels B. Petroleum C. Charcoal D. Vegetation
69. All nonliving things also called __. A. Physical component B. Biotic C. Abiotic D. Microorganisms
70. The wise use of natural resource is called __ A. conservation B. management C. protection D. preservation
71. If a cell has 24 chromosomes, how many chromosomes will each of its daughter cells have after mitosis? A.12 B.6 C.20 D.24
72. If a cell has 48 chromosomes, how many chromosomes will exist in each of its gametes? A.8 B.24 C.48 D.50
73. Mitosis has _____ phase(s). A. one B. two C. three D. four
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D. They make the chromosomes visible.
76. Gametes are produced by the process of : A. mitosis. B. meiosis. C. crossing-over. D. replication.
77. What is the process called when cells are copied with half the number of chromosomes? A. photosynthesis B. meiosis C. cellular respiration D. mitosis
78. The term which includes both biotic and a biotic items of the environment is
A biome B) An ecosystem C) A community D) A population
79. At which level of structural organization do proteins have globular shape?
A) Primary structure B) Tertiary structure C)Secondary structure D) Quaternary structure
80. Which of the following classes of molecules cannot pass easily across the cell membrane by simple diffusion across the cell membrane by simple diffusion?
A) Small non-polar molecules B) Non-polar molecule C)Lipid soluble molecules D) Polar molecules

81. If a certain food stuff gave a positive result with Benedict's test only after it was hydrolyzed with hydrochloric acid, which of the following substances could it be?
A) Non-reducing sugar B) Lipid C)Nucleic acid D) Protein

82. Which of the following biological knowledge is used to increase productivity of plants and crops?
A) Agriculture B) medicine C) Environment D) Energy

83. Which part of the structure gives acidic properties to the molecule of amino acids?
A) Amino group B) Carboxyl group C) Central carbon D) R-group

84. Which one of the following carbohydrates has structural function?
A) Cellulose B) Glycogen C) Starch D) Maltose

85. Which one of the following bases is NOT common for DNA and RNA?
A) Adenine B) Uracil C) Cytosine D) Guanine

86. Which of the following contains phosphate group in its molecule?
A) Protein B) Nucleotide C) Amino acid D) Cellulose

87. Which of the following combination between the carbohydrate and the type of test is correctly matched?
A) Cellulose – Iodine test B) Starch – Iodine test C) Glycogen – Biuret test D) Starch – Benedict's test

88. Which one of the following is **NOT** accepted in modern theory?
A) Living things are made up of cells B)The cell is a structural and functional unit of all living things
B) All cells come from Pre-existing cells D)Cells from by free-cell formation

89. What will happen if you put red blood cells in hypertonic solution?
A) The cells become turgid C)The cell will not change their size
B) The cells lose water D)The cells swell and burst

90. What will happen when a cell gets bigger in size?
A) Its volume decreases C)Its surface area to volume ration increases
B) Its surface area to volume ratio decrease D)Its surface area decreases

91. Which of the following processes involves the movement of particles from a low concentration to a higher concentration through the plasma membrane of a cell?
A) Osmosis B) Facilitated diffusion C) Passive transport D) Active transport

92. Which of the organelles is NOT correctly matched with its function?
A)Lysosomes → lipid synthesis C) Ribosomes protein synthesis
B) Golgi body protein synthesis D)Mitochondrion → Aerobic respiration

93. Which of the following is found only in plant cells?
A) Chloroplasts B) Mitochondria C) Centrioles D) Ribosomes

94. The cell wall of prokaryotic cells is often made from
A)Cellulose B) Chitin C) Phospholipids D) Peptidoglycan

95. The rate of simple diffusion is affected by all of the following **except**
A) The size of particles C) Concentration gradient
B) Diffusion distance D) The number of integral proteins in the plasma membrane

96. The typical energy storage form of carbohydrate in animal cells is
A) Starch B) Cellulose C) Glycogen D) Sucrose

97. The light dependent splitting of a water molecule during photosynthesis is called
A) Photolysis B) Carboxylation C) Photophosphorylation D) Photorespiration
98. Which of the following is an inorganic molecule? A. CaCo3 B. CH4 C. C6H2O6 D. C18H36O2
99. Which one distinguishes bacterial cells from eukaryotic cells
A. they have larger cell size C. the have no true nuclei
B. the have no organelles D. they have no genetic material
100. Which of the following is incorrect about viruses?
A. they cannot carryout any metabolic processes
B. they are incapable of independent reproduction
C. they have some organelles found as in other cells D. some are used as vectors
101. Which process among the following is required for testing reducing sugar?
A) Neutralization B) Heating C) Emulsification D) Spinning
102. Part of the alimentary canal where mechanical digestion and the chemical digestion of polysaccharides begin. A. Mouth B. Stomach C. Liver D. Small Intestine
103. The 1st location in the digestive system where peristalsis occurs:
A. Mouth B. Esophagus C. Stomach D. Small Intestine
104. Where in the alimentary canal does pepsinogens are activated into pepsin to aid in the digestion of proteins. A. Mouth B. Esophagus C. Stomach D. Small Intestine
105. The organ that releases many enzymes that aid in the breakdown of all types of organic molecules: A. Mouth B. Pancreas C. Stomach D. Liver
106. The tube though which food and air (that you breathe) passes:
A. Esophagus B. Larynx C. Trachea D. Pharynx
107. Bile is produced in __. A. Salivary Glands B. Pancreas C. Gall Bladder D. Liver
108. Which of the following organs produce insulin, required for glucose uptake into body cells? A. Liver B. Gall Bladder C. Pancreas D. Stomach
109. Which of the following is **not** a major task of the digestive system?
A. Secretion B. Digestion C. Absorption D. Circulation
110. Which of the following is **not** considered an accessory gland to the digestive system? A. Wall of the gastrointestinal tract (GI)
B. Liver C. Salivary Glands D. Pancreas
111. Rank the following blood vessels in order of their average pressure, from **highest to lowest**: artery, vein, arteriole, venule, aorta, capillary.
A. Capillary > vein >venule> arteriole > artery > aorta C. Aorta > arteriole >venule> artery > vein > capillary B. Aorta > artery > arteriole > capillary >venule> vein D. Capillary > arteriole >venule> artery > vein > aorta
112. Which of the following statement about circulatory systems is **false**?
A. In closed circulatory systems, blood flows through vessels that are separate from the

interstitial fluid of the body. B. The earthworm has a closed circulatory system.
C. In an open circulatory system, the hemolymph empties into the body cavity.
D. Lobsters are organisms that have closed circulatory systems.

113. Red blood cells are also known as: A. Lymphocytes B. monocytes C. erythrocytes D. basophils

114. How does the structure of red blood cells allow them to deliver oxygen to the cells of the body? A. Their size and shape allow them to carry and transfer oxygen. B. Their disc shape contains many small vesicles that allow them to carry & transfer oxygen. C. They have nuclei & do not contain hemoglobin. D. They contain coagulation factors & antibodies.

115. Which of the following best describes plasma?
A. It is a protein synthesized in the liver. B. It is a liquid that contains only lipids and antibodies. C. It is a blood component that is separated by spinning blood.
D. It is an antibody produced in the mucosal lining.

116. Which of the following is a function of the breathing system?
A. gas exchange B. transport of oxygen C. absorption of nutrients D. structural support E.A & D

117. The trachea leads to the__. A. bronchioles B. Bronchii C. esophagus D. Nasal cavity

118. The space at the back of the mouth, which leads either to the airway or the esophagus is the: A. larynx B. nasal cavity C. Pharynx D. None of the above

119. Oxygen from the air enters the blood stream through:
A. cardiac notch B. pulmonary vein C. alveoli D. paranasal sinuses E. larynx

120. When the diaphragm contracts (is pulled downward), _____ occurs.
A. inhalation B. exhalation C. Lung collapse D. Both exhalation and inhalation

121. Which one of the following is the correct path urine takes as it moves through the urinary system?
A. kidneys - ureters - bladder – urethra B. bladder - kidneys -urethra – ureters
C. ureters - kidneys - bladder - urethra D. Uretra – kidneys – Ureters – badder

122. The _____ is the functional unit of the kidney.
A. Villus C. Lymph node B. Alveoli D. Nephron

123. Which of the following substances are **not** filtered out of the blood in the nephrons?
A. Blood cells & proteins B. Urea & water C. Glucose & amino acids D. Salts & hormones E. A & C

124. All of the substances that are removed from the blood via the Bowman's capsule are called __. A. Plasma B. Filtrate C. Urine D. Lymph E. C and D

125. What substances must be reabsorbed back into the blood from the convoluted tubule and loop of Henle? A. Water B. Salts C. Glucose D. All of the above E. None of the above

126. Urine is primarily composed of:
A. Lymph B. Red blood cells C. Carbon dioxide D. Water E. Oxygen
127. Which one of the following is not the structural component of digestive system?
A. Small intestine B. Mouth & Large intestines C. Lung & Kidney D. Stomach
128. The breakdown of food molecules in to smaller & usable forms is called _____.
A. Circulation B. Digestion C. Excretion D. Breathing
129. The outer layers, white & hardest substance in the body is the:
A. Dentine B. Pulp cavity C. Root canal D. Enamel
130. In human the first set of 20 teeth are called _____.
A. permanent teeth B. wisdom teeth C. milk teeth D. All of the above
131. One of the following is not part of respiratory system.
A. Trachea B. Liver C/ Bronchi D. Nose
132. ____ are tiny air sacs in the lungs where the exchange of oxygen & carbon dioxide takes place. A. Alveoli B. Trachea C. Bronchioles D. Bronchi
133. Muscular blood pumping organ of the circulation system is the:
A/ lung B/ blood vessels C/ liver D. heart
134. The chamber of the heart that pumps deoxygenated blood in to the lung is called ____. A. right atrium B. left atrium C. Right ventricle D. left ventricle
135. The blood vessels that carry blood away from the heart in to different body parts.
A. Veins B. Arteries C. Capillaries D. All of the above
136. The liquid parts of the blood which is composed of 90% water is
A. blood cells B. plasma C. white blood cells D. Red blood cells
137. Which one of the following is not a disease of the Circulatory system?
A. Hypertension B. Stroke C. heart failure D. Asthma
138. One of the following is not male reproductive organ?
A. Testes B. Penis C. Uterus D. Scrotum
139. Which one of the following is a female secondary sexual characteristic?
A. Testis begins to produce sperm cell B. Shoulder and chest broaden
C. Egg matured and start of menstruations. D. Developed more muscles
140. One of the following is **not** sexual transmitted diseases.
A. Chancroids & Syphilis B. Gonorrhea C. Heart attack D. AIDS
141. Which one of the following is **not** advantage of a compound microscope?
(A) It is cheap to purchase (B) It is small and portable
(C) It Has High resolution power (D) Natural color of the specimen can be observed.
142. The term cell was first coined by: (A) Anton van Leeuwenhoek (B) Robert Hooke (C) Shledin (D) Schwann
143. Which of the following statements would be part of the cell theory?
(A) All life is made of cells. (B) Cells are the smallest units of life.
(C) Cells come from preexisting cells. (D) All of the above
144. The movement of water molecules from high concentration to low concentration through a selectively permeable membrane is called: (A) Diffusion (B) Active transport (C) Osmosis (D) Passive transport

145. The largest cell in the world is: (A) Animal nerve cell (B) Ostrich egg cell (C) Giraffe egg cell (D) Human egg cell
146. Majority of cells cannot be seen directly with our naked eyes because:
(A) organisms are generally unicellular (B) cells are microscopic
(C) cells are present only inside the body (D) cells are grouped into tissues
147. The correct combination of terms with reference to an animal cell is:
(A) cell wall, cell membrane, nucleus, Chloroplast (B) cell wall, nucleus, ribosome, chromosome (C) cell membrane, mitochondria, ribosome, chromosome (D) cell membrane, ribosome, mitochondria, chloroplast.
148. Which one of the following term is **not** a part of the nucleus?
(A) Ribosome (B) Chromosome (C) Nucleolus (D) Gene
149. The jelly-like fluid substance present in cells is called
(A) protoplasm (B) chloroplast (C) chromosome (D) cytoplasm
150. The pair that belongs to the group prokaryotes are:
(A) Moss and Sponge (B) Bacteria (C) Yeast and Amoeba (D) Penicillium and Spirogyra
151. Green color of leaves is due to presence of the pigment:
(A) Chlorophyll (B) Mitochondria (C) Ribosomes (D) Chloroplast
152. The unit of measurement used for expressing sizes of cells is:
(A) Centimeter (B) Micrometer (C) Millimeter (D) Nanometer
153. The most important function of cell membrane is that it:
(A) controls the entry & exit of materials from cells. (B) Controls only the entry of materials into cells.
(C) Controls only the exit of materials from cells. (D) Allows entry & exit of materials without any control
154. The parts of a cell that is common to plant, animal and a bacterial cell is:
(A) Chloroplast (B) Cell membrane (C) Cell wall (D) Nucleus
155. Identify the statement which is true about cells.
(A) Cells can be easily seen with naked eyes. (B) Insect's egg is not a cell.
(C) A single cell can perform all the functions in a unicellular organism.
(D) The size and shape of cells is the same in multicellular organisms
156. Which of the following feature will help you in distinguishing a plant cell from an animal cell? (A) Cell wall (B) mitochondria (C) cell membrane (D) nucleus
157. Which molecule in animal plasma membranes reduces the permeability of the membrane to most biological molecules? (A) Proteins (B) Phospholipids (C) Glycolipids (D) Cholesterol
158. Oxygen enters the blood from the alveoli in the lungs by the process of:
(A) Active Transport (B) Osmosis (C) Simple Diffusion (D) Facilitated Diffusion
159. Which term describes the condition of red blood cells when placed in a hypertonic solution? (A) Hemolysis (B) Plasmolysis (C) Crenation (D) Turgor Pressure

160. The process by which a vesicle is formed at the plasma membrane to bring substances into the cell is called (A) Endocytosis (B) Exocytosis (C) Active Transport (D) Facilitated diffusion

161. Which of the following comparisons is **NOT** correct?
(A) Exocytosis--Leaving by sac (C) Active Transport--Against the gradient
(B) Facilitated Diffusion--With the gradient (D) Hypotonic Solution--Cells shrivel

162. The combined observations of Mattias Schleiden, Theodor Schwann and Rudolph Virchow resulted in the formation of the cell theory. Which of the following is N**ot** part of the cell theory?
(A) All cells contain a nucleus (C) All cells come from other living cells
(B) All living organisms are made of one or more cells
(D) Cells are the basic unit of structure and function of all living things

163. Which type(s) of cells have genetic material that is contained in a nucleus?
(A) Bacteria (B) Plants only (C) Animals only (D) Both plant and animal cells

164. Which cell structure is **correctly paired** with its primary function?
(A) Ribosome - Protein synthesis (C) Mitochondrion - Movement
(B) Vacuole - Cell division (D) Nucleus - Storage of nutrients

165. A person with swollen gums rinses his mouth with warm salt water, and the swelling decreases. Which of the following has occurred? (A) The swollen gums have absorbed the saltwater solution.
(B) The saltwater solution lowers the temperature of the water in the gums.
(C) The salt in the solution has moved against the concentration gradient.
(D) The water in the gums has moved out due to the high concentration of salt in the solution.

166. In pure water, a red blood cell from an animal will swell and burst, but a leaf cell from a plant will not. Which structure in the leaf cell is responsible for this difference? (A) Cell membrane (B) Cell wall (C) Mitochondrion (D) Nucleus

167. The diameter of most animal and plant cells ranges from:
(A) 1.0 to 10 microns (B) 0.01 to 0.1 microns (C) 100 to 1000 microns (D) 10 to 100 microns

168. A bacterial cell's DNA is found in its: (A) Capsule (B) Nucleoid region (C) Nucleus (D) Ribosomes

169. From the follow lists chose the correct order in which light passes through it.
A. mirror--objective-- lens--eyepiece--- lens B. mirror-----slide--------objective lens-----eye piece C. Lens----slide----eyepiece lens---objective lens D. Eye piece-----objective lens----slide------mirror

170. Which parts of microscope combined to give magnified view of specimen?
A. Light source and objective lens B. eye piece and objective lens
C. Stages and eyepiece D. eye piece and focus knob

171. To focus on specimen is the best to start with which objective lens?
A. lower magnification C. intermediate magnification B. High magnification D. Oil emersion
172. To which parts of microscope do you look through to see an object magnified?
A. Eyepiece B. Stage C. Focus knob D. objective lens
173. One of the following is not the function of a microscope.
A. Magnifying the image of the sample B. Showing the details of the sample.
C. Enabling one to observe something seen with naked eye. D. Enlarging the size of the sample
174. Magnification power of a microscope is related to its ability to:
A. Increase the size of the image. B. Showing the fine details of the sample.
C. Resolving the image. D. All of the above
175. One of the following is true about cells.
A. Cells are generally too small to be seen with the naked eye.
B. Cells are the structural and functional units of all life forms.
C. Cells are the smallest units that carry out all process of life. D. All of the above
176. One of the following is part of a cell and only found in animal cell?
A. Cell membrane B. Chloroplast C. Cell wall D. Lysosome
177. One of the followings is not a unicellular organism. A. amoeba B. Mushroom C. bacteria D. Paramecium
178. Which one the following is not an organ A. heart B. lung C. nerve D. stomach
179. One is formed from groups of similar cells carrying out the same function.
B. organ B. tissue C. organ system D. organism
180. The _____ is the basic unit of life. A. Organism B. cell C. tissue D. organ
181. Which of these structures do all cell share? A. nuclear envelope B. cell walls C. organelles D. plasma membrane
182. which of the following scientists discover the cell
A. Robert Hooke C. Zaccharias Janssen B. Anton van Leeuwenhoek D. Hans Lipperhey
183. Which of the following feature will help you in distinguishing a plant cell from an animal cell? A. cell wall C. mitochondria B. Cell membrane D. nucleus
184. Which part of the cell contains organelles? A. cytoplasm B. Cytosol C. Cell wall D. nucleus
185. The shape and size of the cell are directly related to:
A. the size of organism C. environment B. their functions D. all
186. Which of the following levels of biological organization shows the correct order from simplest to complex level?
A. Organism----organ system---organ---tissue----cell B. Tissue----cell----organ---organ system---organism C. Cell----tissue-----organ---organism----organ system D. Cell---tissue---organ---organ system---organism
187. Which organelles are responsible for digesting cell waste and foreign bacteria?
A. Golgi apparatus B. Cytoskeleton C. nucleus D. lysosome

188. Which of these organelles modifies cell products and then packages them for distribution? A. The nucleus C. The mitochondrion B. The cell membrane D. The Golgi apparatus
189. The 'powerhouse' of the cell that generates the cell's energy-rich ATP molecules is the: A. Mitochondrion C. Chloroplast B. Smooth ER D. Nucleus
190. One of the following cell structure is not seen through a light microscope.
A Nucleus. B Cell membrane. C Ribosome. D Cell wall.
191. The magnification power of low power objective is: A 10X B 4X C 40X D 100X
192. One of the following is the function of condenser. A Magnifying the image B Scatering the image
C Collecting light and passing it through the stage openings D Holding a specimen at the stage.
193. One of the following is true about coarse adjustment. It is used to:
A focus under high power objective. B adjust the amount of light.
C focus under low power objective. D move back and forth the stage of the microscope.
194. One of the following makes a plant cell different from an animal cell?
A Cytoplasm B Cell wall C Nucleus D A and B only
195. One of the following is found in both animal and plant cells.
A Chloroplast B Large vacuole C Cell wall D Cell membrane
196. The regular shape of plant cells which is observed under the microscope is due to having: A vacuoles B cell membrane C cytoplasm D cell wall
197. Plant cells manufacture their own food due to the presence of a cell part known as:
A vacuole B cell membrane C chloroplast D cell wall
198. The shape of a human red blood cell is: A disk-like B flat C short & branched D pointed at both ends
199. Which of the following is not a parasitic worm which can infect your gut?
A. beef tapeworm B. ringworm C. threadworm D. pork tapeworm
200. Which of these statements is true about a tapeworm?
I . It is adapted to survive in the human gut. II. It can have around a thousand segments to its body.
III. It is a roundworm. IV. Each segment contains reproductive organs. A I, II and III B II, III and IV C I, III and IV D I, II and IV
201. Which of the following animals is the vector for malaria?
A. Aedesaegypti mosquito B. housefly C. Anopheles mosquito D. flea
202. Which of the following processes will help to **avoid** the spread of **food-borne** diseases? I. Use disposable cloths to wipe down surfaces. II. Wash hands after visiting the toilet.
III. Wash hands three times a day. IV. Use disinfectant on kitchen

surfaces. A I, II and III B. II, III and IV C. I, II and IV D. I, III and IV

203. Which of the following diseases is only caused by bacteria?
A. influenza B. common cold C. AWD D. cholera

204. Which of the following diseases is **not** sexually transmitted?
A. HIV/AIDS B. gonorrhoea C. diarrhoea D. syphilis
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205. Which of these STDs are caused by **viruses**? I. HIV/AIDS II. gonorrhoea III. chancroid IV. syphilis A. I, II and III B. I, II and IV C. II, III and IV D. I only

206. Infectious diseases are caused by: A. poor diet B. genetic mutations C. micro-organisms D. curses

207. One major difference between viruses and bacteria is:
A. viruses have no nucleus whereas bacteria do D. viruses are living organisms and bacteria are not
B. viruses have membranes whereas bacteria do not
C. viruses can only reproduce in living cells whereas bacteria split in two

208. All of the following are examples of fungi **except**: A. mushrooms B. moulds C. Yeast D. dandruff

209. Which scientists finally proved the germ theory of disease?
A. Robert Koch B. Louis Pasteur C. Edward Jenner D. Anton van Leeuwenhoek

210. Which of the following would you use to clean up if your puppy was sick on the floor? A. antiseptic B. antibiotic C. disinfectant D. antidiuretic

211. Immunity passed from mother to fetus by way of the placenta is described as:
A. natural active B. artificial active C. natural passive D. artificial passive

212. Immunity acquired by administering a tetanus shot is:
A. natural active B. artificial active C. natural passive D. artificial passive

213. Which of the following is **NOT** a way to help prevent the spread of HIV/AIDS?
A. washing your hands after using the toilet B. using a condom when you have sex
C. having only one sexual partner D. not sharing needles for intravenous drug use

214. Which of the following best describes the cells which are attacked by the virus which causes HIV/AIDS? A. white blood cells B. lymphocytes C. T-cells D. B-cells

215. Which of these bodily fluids is not a source of HIV/AIDS infection?
A. semen B. breast milk C. blood D. tears

216. The approximate total number of people infected with HIV in Ethiopia is:
A. a few hundred B. a million C. a thousand D. a hundred thousand

217. A process by which an organism produces offspring is called
A. reproduction B. homeostasis C. development D. inheritance

218. Bacteria that serve as decomposers are
A. photoautotrophs B. chemoautotrophs. C. photo heterotrophs D. chemo heterotrophs

219. All fungi..... A. are multicellular B. are heterotrophs C. form flagellated spores D. all of the above

220. Most fungi obtain nutrients from ...
A. nonliving organic matter B. living animals C. living plants D. photosynthesis

221. Fungal infections are most common in..... A. plants B. mammals C. insects D. birds

222. Bacteria, Archaea, and Eukarya are three..... A. families B. kingdoms C. classes D. domains

223. Which of the following is NOT one of the five kingdoms used to classify the living world? A Protista B Animalia C eukaryota D Fungi

224. Which of the following is a characteristic of all members of the kingdom **Monera**?
A does not have an enclosed nucleus B carries out photosynthesis
C has a bony skeleton D breathes through gills

225. In which of the following plant divisions would you find plants that have no transport tissues and no true roots? A Pteridophyta B Gymnospermae C Angiospermae D Bryophyta

226. The following statements describe which phylum of animals? They have narrow, thread-like bodies that are not segmented, pointed at both ends, bilaterally symmetrical and round in cross-section. They have no circulatory system but they do have a complete digestive system with both mouth and anus.
A. Mollusca B. Annelida C. Echinodermata D. Nematoda

227. Which class of the vertebrata has scaly skin on the legs, lays eggs and can regulate its own body temperature? A. birds B. fish C. mammals D. reptiles

228. The Swedish scientists who create the binomial naming system
A. Robert Hook. C. Robert H. Whittaker B. Carlous Linnaeus D. Charles Darwin

229. Which of the following in the classification system is the smallest?
A. Kingdom B. species C. Genus D. class

230. Excretion, irritability and reproduction are characteristics of:
A. all animals and plants B. animals only C. plants only D. some animals and some plants only

231. The scientific name of human being is Homo sapiens, the second parts of the scientific name represent------- A. genera name B. kingdom name C. species named D. family name

232. The smallest natural group of organisms is the____. A. Kingdom B. Species C. phylum D. class

233. If two organisms belong to the same order, then they must also belong to the same
A. Genes B. class C. family D. species

234. An organism's scientific name is based on how it is classified. Which of the following levels of classification determine the name? A. Genus and species C. Order and family B. Phylum and class D. kingdom & spies

235. The science of identifying, classifying, and naming living things is called?
A. System B. nomenclature C. Taxonomy D. hierarchy

236. The level below kingdom A. Genus B. order C. phylum D. class

237. The sequence of scientific category from general to specific:
A. Species----- genera----family----order --- class-----phylum kingdom
B. Genera--- family-----order ----class-----phylum kingdom------genus
C. order ---class----phylum-----kingdom-----family---species----genus
D. kingdom----phylum-----class------order----family---genus----species

238. Protists are: A. All autotrophs cannot make their own food B. All autotrophs can make their own food C. Can be either autotrophs and heterotrophs D. Are not eukaryotic (do not have nucleus

239. A mushroom would best fit into which kingdom? A. Animal B. Fungi C. plant D. protest

240. The main function of the vascular bundles found in many plants is to ...
A. taps energy or food making B. carry out photosynthesis
C. assist plant in reproduction D. transport substances around the plant

241. The scientific and common names of three animals are: Canis familiaris (dog), Canis lupis (wolf) and Vulpes vulpes (fox). These three animals all belong to the same ... A. Class but different genera B. Genus but different species
C. Species different genera D. Class different species

242. In a five-kingdom system of classification, bacteria are members of kingdom
A. fungi B. plants C. monera D.protests

243. Which of the following is not an abiotic component of an ecosystem?
A. sunlight B. rainfall C. food D. wind

244. Which of the following is not a biotic component of an ecosystem?
A. predators B. rocks C. parasites D. diseases

245. In the food chain: Grass – rat – snake – Eagle, the position of Snake is at ..... feeding level & ... trophic level A) 3, 2 B) 3, 4 C) 4, 3 D) 2, 3

246. The biomass of an ecosystem is
A) The total energy of living and non – living organisms in an ecosystem
B) The total mass of living organisms in an ecosystem
C) The total energy of living organisms in an ecosystem
D) The total mass of living and non – living matter in an ecosystem

247. In nitrogen fixation, nitrogen combines with A) Carbon B) Hydrogen C) Oxygen D) Water

248. What is the correct term for rising water vapor meeting colder air and turning back in to water droplets? A) Condensation B) Dehydration C) Evaporation D) Precipitation

249. Autotrophs can be _____ A/ primary consumer B/ secondary consume C/ producers D/ all

250. The organisms that feed on dead body parts are _____
A/ producer B/ consumer C/ decomposer D/ B &C

251. Which of the following is not an external feature of a leaf?
A. petiole B. midrib C. chloroplast D. cuticle

252. Which of the following is the tissue where most photosynthesis takes place?
A spongy mesophyll B palisade mesophyll C epidermis D stomata

253. Gases move in and out of a plant through: A the cuticle B the stomata C the epidermis D the roots

254. Iodine is used to test for which substance to show that photosynthesis has taken place in the leaf of a plant? A. glucose B. cellulose C. protein D. starch

255. Which of the following is not needed for photosynthesis to take place?
A. carbon dioxide B. oxygen C. chlorophyll D. light

256. Which of the following conditions will not increase the rate of transpiration in a plant? A. high humidity in the air B. windy conditions C. high temperatures D. high light levels

257. Water moves out of plant leaves through the: A. epidermis B. mesophyll C. stomata D. chlorophyll

258. Which of the following is **NOT** a tropic response in plants?
A. phototropism B. geotropism C. nitrotropism D. hydrotropism

259. The young shoots which are often used in experiments on tropisms are known as:
A. coleoptiles B. adventitious roots C. cotyledons D. cornucopia

260. The vascular bundles contain:
A. xylem and epidermis B. epidermis and phloem C. xylem and phloem D. stomata and phloem

261. Which tissue contains the most chloroplasts?
A. epidermis B. palisade mesophyll C. spongy mesophyll D. phloem

262. The stomata open and close to allow:
A. carbon dioxide to diffuse into the leaf and oxygen and water vapor to diffuse out of it
B. oxygen to diffuse into the leaf and carbon dioxide and water vapor to diffuse out of it
C. water vapor to diffuse into the leaf and carbon dioxide and oxygen to diffuse out of it
D. carbon dioxide, oxygen and water vapor to diffuse into the leaf End of unit questions

263. Which of the following is the correct equation for photosynthesis:
A. carbon dioxide + oxygen [+ chlorophyll + light energy] → glucose + water
B. oxygen + water [+ chlorophyll + light energy] → glucose + carbon dioxide
C. carbon dioxide [+ chlorophyll + light energy] → glucose + oxygen + water
D. carbon dioxide + water [+ chlorophyll + light energy] → glucose + oxygen

264. The glucose made during photosynthesis is converted into which compound to be stored? A. fat B. starch C. cellulose D .protein

265. Water is split to provide hydrogen to make glucose and oxygen as a waste product during: A the light-dependent reaction of photosynthesis
B. the light-independent reaction of photosynthesis
C the trapping of light by chlorophyll D. none of the above

266. Water is taken up through the roots of plants by a process known as:
A diffusion B osmosis C active transport D evaporation

267. Farmers need to irrigate their fields to replace water because plants constantly lose water through: A osmosis B photosynthesis C transpiration D diffusion

268. Which of the following is not an adaptation used by some plants to reduce water loss? A. thick waxy cuticle B stomata on

the underside of the leaf sunk into pits C leaves reduced to thin spines D stomata on the upper surface of the leaf

269. Which of the following statements are correct?

I. shoots are positively phototropic but negatively geotropic.

II. Roots are positively hydrotropic but negatively geotropic.

III. Roots are positively hydrotropic and geotropic.

IV. shoots are negatively hydrotropic but roots are negatively phototropic

A I, II and III B I, III and IV C I, II and IV D II, III and IV

270. Which structure transports water to the leaf of a plant? A) Guard cell B) Phloem C) Stomata D) Xylem

271. **Clinostat** is used in the study of A) Osmosis B) Growth movements C) Leaf transpiration D) Photosynthesis

272. Which leaf part or layer contains the largest number of chloroplasts?

A) Epidermis B) Palisade C) Cortex D) Spongy

273. One of the following is **not** major characteristics of plants

A) Plants are composed of many eukaryotic cells B) Plants are sessile or do not show mobility C) Plants are heterotrophic in their feeding habit D) Plants show both sexual and asexual reproduction

274. The two products of photosynthesis include

A) Carbon dioxide & Oxygen B) Carbon dioxide & water

C) Water & carbohydrate D) Oxygen & Carbohydrate

275. Which of the following is **false** about photosynthesis?

A. It takes place in green plants B. It requires water, carbon dioxide and sunlight C. It releases oxygen in to the atmosphere D. It reduces the level of atmospheric oxygen

276. Why do we put a leaf in a boiling ethanol when we carry out starch test?

A. To soften the leaf that has been brittle. B. To dissolve the starch in the leaf.

C. To remove the green pigment of the leaf. D. To stop all the chemical processes by killing the leaf cells

277. Which of the following is **correct** about a seedling horizontally fixed on a rotating clinostat?

A. Both the shoot & root continue to grow strait.

B. The root grows upwards while the shoot grows downwards.

C. The root grows downwards while the shoot grows upwards. D. Both the shoot & the root stop growing

278. Which of the following sections of the leaf is the most efficient in photosynthesis?

A. Vascular bundles B. Palisade mesophyll C. Spongy mesophyll D. Waxy cuticle

279. In one of the starch test experiment, variegated leaf is used to show the importance of

A. water B. chlorophyll C. carbon dioxide D. light

280. Which of the following is the nutritive tissue of the seed?

A. Micropyl B. Plumule C. Testa D. Endosperm

281. How does photosynthesis balance concentration of O_2 & CO_2? It
A. releases carbon dioxide & absorbs oxygen from the atmosphere.
B. releases oxygen & absorbs carbon dioxide from the atmosphere.
C. oxidizes & removes the carbon dioxide from the atmosphere.
D. converts oxygen to ozone & carbon dioxide to carbonic acid.

282. Water uptake by roots is facilitated by
A. high surface area of the root hairs. B. active transport of water molecules.
C. high concentration of water in the root. D. the large vacuoles in the roots & leaves.

283. What is the effect of removing apical dominance? It
A. prevents fruit formation. B. increases water loss. C. increases stem length. D. causes side shoot growth

284. What is the role of chlorophyll in photosynthesis? To absorb
A. oxygen gas B. water molecules C. carbon dioxide D. light energy

285. The tendency of plants to grow towards water is
A. hydrotropism B. phototropism C. chemotropism D. geotropism

286. Types of teeth with the widest upper surface are:
A. Molars B. Premolars C. Canines D. Incisors

287. The shapes of teeth in humans is related to their: A size B location C function D A and B

288. Compared with the dental formula of human, a mammal having a dental formula 0123/3123 is having A. less number of incisors B. less number of canines C. more number of molars D. less number of molars

289. The organ of your body where gas exchange takes place is the:
A. liver B. lungs C. trachea D. heart

290. The role of the cilia on the epithelium of the trachea is to:
A. move dirt and mucus away from the lungs B. Move dirt and mucus down the trachea into the lungs C. to produce mucus
D. to prevent food getting into the lungs

291. Which of the following is not part of the respiratory response to exercise?
A breathing faster producing more oxygen C breathing deeper D producing more carbon dioxide

292. Which of the following is **NOT** a constituent of cigarette smoke?
A. oxygen B. nicotine C. carbon monoxide D. tar

293. Which of the following nutrient provide more energy? a. Protein b. Carbohydrate c. Lipids d. Vitamins

294. Which of the following is not belong to deficiency diseases?
A. Kwashiorkor B. Diabetes C. Marasmus D. Scurvy

295. Which of the following diet is composed of carbon, hydrogen, oxygen and nitrogen? A. Carbohydrate B. Lipids C Protein D. all

296. Which of the following minerals are used to synthesize the hemoglobin of red blood cells? A. Iodine B. Calcium C. Iron D. Phosphorus

297. Which of the following group of people needs high amount of balanced diet?
A. Athletes B. Pregnant women C. Children D. All

298. Which of the following is **not** the result of **obesity**?
A. heart disease B. high blood pressure C. diabetes D. Marasmus

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