

Biology Semester Review

Set 2

1. Approximately which date are we the closest to the sun during the year?
 - a. March 21st
 - b. June 21st
 - c. October 21st
 - d. December 21st

2. Plants need Oxygen for photosynthesis to occur.
 - a. True
 - b. False

3. Known as a method of transport across a cell membrane by the release of contents from a vacuole to the exterior of the cell.
 - a. Exocytosis
 - b. Phagocytosis
 - c. Pinocytosis
 - d. Endocytosis
 - e. Facilitated Diffusion

4. Known as the process by which molecules of a solvent (water) tend to pass through a semipermeable membrane from a high concentrated solution into a less concentrated one.
 - a. Osmosis
 - b. Diffusion
 - c. Phagocytosis
 - d. Pinocytosis
 - e. Facilitated diffusion

5. What is the ultimate energy source for most organisms on Earth?
 - a. Oxygen
 - b. Water
 - c. Intense core temperature of the earth
 - d. Carbon dioxide
 - e. Sunlight

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6. The rate of photosynthesis decreases as the ...
 - a. Oxygen concentration decreases
 - b. Carbon dioxide concentration decreases
 - c. Light intensity increases
 - d. Temperature becomes moderately warm

7. What is the main way that organisms contribute to the Carbon cycle?
 - a. Through metabolic process
 - b. Through the diffusion of Hydrogen ions
 - c. By reflecting light
 - d. By splitting water molecules

8. A General term known as a method of transport across a membrane by the invagination of the membrane to form a vacuole inside the cell.
 - a. Exocytosis
 - b. Phagocytosis
 - c. Pinocytosis
 - d. Endocytosis
 - e. Facilitated Diffusion

9. What adjective is used when describing a solution with a lower solute concentration when compared to another solution?
 - a. Hypotonic
 - b. Hypertonic
 - c. Isotonic

10. What term is used to describe a set of metabolic reactions and processes that take place in the cells of organisms to convert biochemical energy from nutrients into adenosine triphosphate (ATP).
 - a. Homeostasis
 - b. Cellular respiration
 - c. Metabolism
 - d. Anaerobic respiration

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11. What term is used to describe a series of chemical reactions where sunlight is used to synthesize foods from carbon dioxide and water?
- Homeostasis
 - Cellular respiration
 - Metabolism
 - Anaerobic respiration
 - Photosynthesis
12. An organized collection of protein channels in cell membranes that allows ions and small molecules to pass between adjacent cells.
- Gap junction
 - Desmosome
 - Tight junction
13. A structure, by which two adjacent cells are attached, formed from protein plaques in the cell membranes linked by filaments. (The strongest cell junction)
- Gap junction
 - Desmosome
 - Tight junction
14. Which of the following wavelengths of the electromagnetic spectrum is not used in the process of photosynthesis?
- Red
 - Orange
 - Yellow
 - Green
 - Blue
15. What adjective is used when describing a solution with an equal solute concentration when compared to another solution?
- Hypotonic
 - Hypertonic
 - Isotonic

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16. Which of the following is the best term used to describe the structure of the Eukaryotic cell membrane?
- Phospholipid
 - Biphospholipid protein
 - Biphospholipid
 - Phospholipid bilayer
17. A term used to describe the movement of substances across a cell membrane without the use of energy by the cell. This usually occurs by moving down concentration gradients.
- Diffusion
 - Active transport
 - Osmosis
 - Passive transport
 - Facilitated diffusion
18. A term use to identify the movement of chemical substances across a cell membrane against concentration gradients by the use of cellular energy.
- Diffusion
 - Active transport
 - Osmosis
 - Passive transport
 - Facilitated diffusion
19. The movement of materials into and out of a cell by using concentration gradients is by the aid of ...
- Lipid bilayers
 - Channel proteins
 - Protein pumps
 - Carrier proteins
 - Cholesterol groups
20. The movement of materials into and out of the cell by use of cellular energy is accomplished by ...
- Lipid bilayers
 - Channel proteins
 - Protein pumps
 - Cholesterol groups

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21. What term is used to identify the shrinking of a cell by the loss of water? Many books refer to plant cells only, but red blood cells will do the same thing in a hypertonic solution.
- Hydrate
 - Turgor
 - Plasmolysis
22. What is the name of the solution found within the chloroplast?
- Thylakoid
 - Stroma
 - Granum
 - Guard cell
23. What is the eukaryote organelle whose main function is to organize the photosynthetic process?
- Mitochondria
 - Chlorophyll a
 - Chloroplast
 - Thylakoid
24. Which of the following conditions is the “main” reason why our deciduous plants lose their leaves in the fall?
- Colder temperatures
 - Increased rainfall
 - Addition of fertilizers to the landscape
 - Decreased daylight hours
25. What is the structure found within the cell that contains the components to carry out the process of photosynthesis?
- Thylakoid
 - Stroma
 - Granum
 - Guard cell

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26. These junctions are the closely associated areas of two cells whose membranes join together to form a virtually impermeable barrier to a fluid.
- Gap junction
 - Desmosome
 - Tight junction
27. Molecules that are too large to be moved through the cell membrane can be transported into the cell by ...
- Osmosis
 - Endocytosis
 - Exocytosis
28. Diffusion is the movement of a substance
- Only in liquids
 - Only through a lipid bilayer
 - Down a concentration gradient
 - Against a concentration gradient
29. Which of the following inside the thylakoid is essential for the Light Dependent reaction of photosynthesis?
- Carbon dioxide
 - Carbohydrates
 - Chlorophyll
 - Oxygen
30. Known as a method of active transport across a cell membrane in which the cell takes in extracellular fluid.
- Osmosis
 - Diffusion
 - Phagocytosis
 - Pinocytosis
 - Facilitated diffusion
31. The Calvin cycle is a common method of which of the following?
- Electron transport
 - Carbon fixation
 - Anaerobic respiration
 - Aerobic respiration

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32. What term identifies a pair of cells specialized to regulate gas exchange in a leaf?
- Thylakoid
 - Stroma
 - Granum
 - Guard cell
33. Known as the physical process of the net movement of molecules from a region of high concentration to one of lower concentration.
- Osmosis
 - Diffusion
 - Phagocytosis
 - Pinocytosis
 - Facilitated diffusion
34. What adjective is used when describing a solution with a higher solute concentration when compared to another solution?
- Hypotonic
 - Hypertonic
 - Isotonic
35. Known as the process by which a cell engulfs large particles or whole cells, either as defense mechanism or a means to find food.
- Osmosis
 - Diffusion
 - Phagocytosis
 - Pinocytosis
 - Facilitated diffusion
36. Known as a method of transport across a cell membrane along a concentration gradient with the aid of carrier proteins.
- Osmosis
 - Diffusion
 - Phagocytosis
 - Pinocytosis
 - Facilitated diffusion

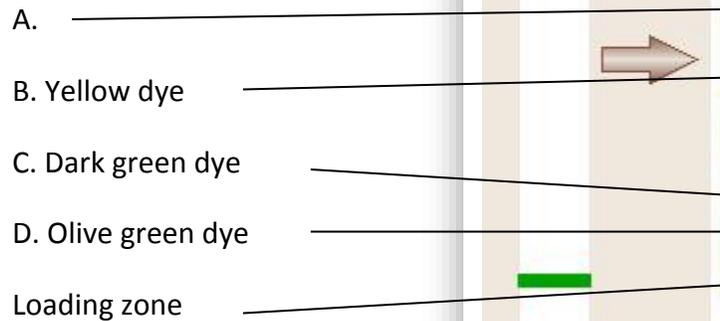
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37. What term is used to identify the increased pressure on the inside of a cell that is caused by the increase of water moving into the cell?
- Dehydrate
 - Turgor
 - Plasmolysis

The following is the result of

A spinach leaf after a chromatography test.



38. Which of the dyes represents Chlorophyll a?

C

39. Which of the dyes represents Xanthophylls?

B

40. Which letter represents the solvent front?

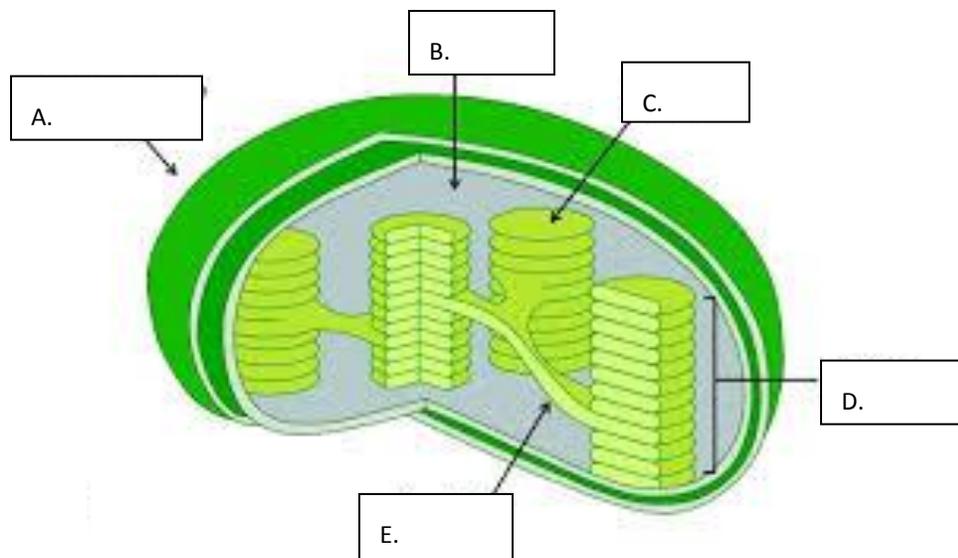
A

41. Which of the dyes represents Chlorophyll b?

D

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Using the diagram above, please identify ...

42. Thylakoid C

43. Lamella E

44. Granum D

45. Stroma B

46. The material that is necessary to begin Glycolysis is

- a. Glucose
- b. *Sucrose*
- c. *Fructose*
- d. Maltose

47. How many ATP molecules is necessary to begin Glycolysis?

- a. 36
- b. 32
- c. 4
- d. 2

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48. During Glycolysis II, how many ATP molecules will be assembled?
- 36
 - 32
 - 4
 - 2
49. What is the final product of Glycolysis II?
- 2 three carbon compounds
 - Pyruvate
 - 3 NADH
 - FADH
50. What stage of cellular respiration is also known as TCA or Citric Acid cycle?
- Oxidative phosphorylation
 - Krebs
 - Glycolysis
 - Calvin
51. The majority of ATP is produced in which stage of Cellular Respiration?
- ETC
 - Glycolysis I
 - Krebs
 - Fermentation
52. When Cellular Respiration occurs in the presence of Oxygen, what type of reaction is it called?
- Glycolysis
 - Alcoholic Fermentation
 - Lactic Acid Fermentation
 - Aerobic Respiration
53. What stage of Cellular Respiration is All of the Carbon Dioxide assembled?
- Glycolysis
 - ETC
 - Krebs
 - Alcoholic Fermentation

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54. At what point during Cellular respiration is Oxygen necessary?
- Glycolysis I
 - Glycolysis II
 - Krebs
 - ETC
55. What molecule is produced with CO₂ during Anaerobic Respiration in the presence of yeast?
- Ethyl Alcohol
 - Lactic Acid Acid
 - NADH
 - FADH₂
56. How efficient is cellular respiration?
- 10%
 - 30%
 - 60%
 - 70%
57. How efficient is anaerobic respiration?
- 10%
 - 30%
 - 60%
 - 70%
58. What is the only reason you need Oxygen?
- Escort NAD from Glycolysis to ETC
 - To react with Glucose to generate ATP
 - Empty the excess Hydrogen from ETC
 - To live!

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59. The offspring of a cross between parents that have different traits; a cross between individuals of different species, subspecies, or varieties is known as
- Cross
 - Genetic anomaly
 - Hybrid
 - Histology
60. A diagram that shows the occurrence of a genetic trait in several generations of a family is called ...
- Pedigree
 - Family tree
 - Ancestry
 - 23 and Me
61. A term used to describe individuals that has identical alleles for a trait on both homologous chromosomes is known as ...
- Homozygous
 - Heterozygous
 - Test cross
 - Back cross
62. A term used to identify one of the alternative forms of a gene that governs a characteristic is known as a/an ...
- Trait
 - Allele
 - Dominance
 - Recessive
63. What term is used to identify the entire genetic makeup of an organism? It is also known as the combination of genes for one or more specific traits ...
- Genotype
 - Phenotype
 - Pedigree
 - Histogram

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64. A haploid gamete (male) for a plant is known as ... ?
- Spores
 - Pollen
 - Sperm
65. What term would be used to identify a cross that includes three different traits?
- Monohybrid cross
 - Dihybrid cross
 - Trihybrid cross
66. A type of dominance that results in a blend in phenotypic expressions when the alleles are heterozygous?
- Complete dominance
 - Incomplete dominance
 - Co-dominance
67. A haploid gamete for a fungal organism is known as?
- Spore
 - Pollen
 - Sperm
68. The passing of traits from parents to offspring is called...
- Heredity
 - Probability
 - Assortment
 - Reproduction
69. Which of the following would be an example of a heterozygous pairing for incomplete dominance?
- p
 - rw
 - Rr
 - Rw
 - PP

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70. In a breeding experiment, what are the offspring of true-breeding parents called?
- P₁ generation
 - P₁ cross
 - P₂ cross
 - F₁ generation
 - F₂ generation
71. Which of the following is not seen in sex-linked traits?
- It is located on the X chromosome
 - Located on autosomes
 - Usually recessive
 - Usually seen in males
72. What characteristic is described in the statement "the dog's coat is brown?"
- Pedigree
 - Genotype
 - Dominance
 - Phenotype
73. What term describes a gene with two dominant alleles that are expressed at the same time?
- Polygenic
 - Complete
 - Incomplete
 - Codominant
74. The owner of a pet store wants to breed more animals that have a certain color of fur. What tool might the pet store owner use to predict which animals have inherited the fur color gene?
- Pedigree
 - Mutation
 - Karyotype
 - Microscope

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75. What does the law of independent assortment state?
- Two alleles form during gametes are formed
 - A species can have a variety of different alleles that code for a single characteristic
 - The alleles for different genes separate independently from one another during gamete formation
 - Populations of a single species divided geographically will change over time to form two separate species.
76. The individual whose studies formed the basis of modern genetics is
- T.A. Knight
 - Gregor Mendel
 - Louis Pasteur
 - Robert Hooke
77. Some people are born with an extra finger known as polydactylism . These individuals who have this trait have inherited either one or two of the same allele. So the trait is considered ...
- Recessive
 - Complete dominance
 - Incomplete dominance
 - Co-dominance
78. The phenotype of an organism
- Cannot be seen
 - Exactly matches its genotype
 - Is the physical expression (appearance) of its genes
 - Occurs only in true-breeding organisms
79. Mendel obtained his P₁ generation by forcing pea plants to
- Self- pollinate
 - Segregate
 - Cross-pollinate
 - Assort independently

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80. Which of the following can assist in determining if an inherited trait is sex-linked?
- Punnett square
 - Law of probabilities
 - Pedigree
 - Test cross
 - Backcross
81. When dealing with complete dominance, the expected ratio of an F₁ generation of a mono-hybrid cross would be
- 100% homozygous
 - 100% heterozygous
 - 25% homozygous dominant: 50% heterozygous: 25% homozygous recessive
 - 75% heterozygous: 25% homozygous recessive
82. A test cross is always done with a ...
- Homozygous recessive set
 - Co-dominance set
 - Heterozygous set
 - Homozygous dominant
 - Incomplete dominance
83. The garden pea is a good subject for genetic study because it
- Is easy to grow
 - Has characters in two clearly different forms
 - Produces many offspring
 - All the above are excellent observational characteristics
84. Which ratio of plants expressing contrasting traits did Mendel find in the F₂ generation?
- 3:1
 - 3:1:3
 - 3:3
 - 1:1

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85. The trait that disappeared in the F_1 generation
- Reappeared in some plants in the F_2 generation
 - Reappeared in all plants in the F_2 generation
 - Reappeared in the P_1 generation
 - Disappeared never to be found again
86. Mendel's law of segregation states that each pair of alleles
- Is limited to sex chromosomes during gamete formation
 - Separate independently of one another after gamete formation
 - Remain together when gametes are formed
 - Is separated when gametes are formed
87. In a pedigree, two normal parents produce a child with a genetic disorder. Based on this information, you know that the genetic disorder is caused by
- Sex-linked allele
 - Dominant allele
 - Co-dominant allele
 - Recessive allele
88. The appearance of a specific trait is expressed differently between male and females (baldness). This is attributed to the trait being
- Complete dominance
 - Incomplete dominance
 - Sex-influenced
 - Sex-linked
89. When several genes influence a character, the character is said to be
- Polygenetic
 - Incompletely dominant
 - Co-dominant
 - Completely dominant

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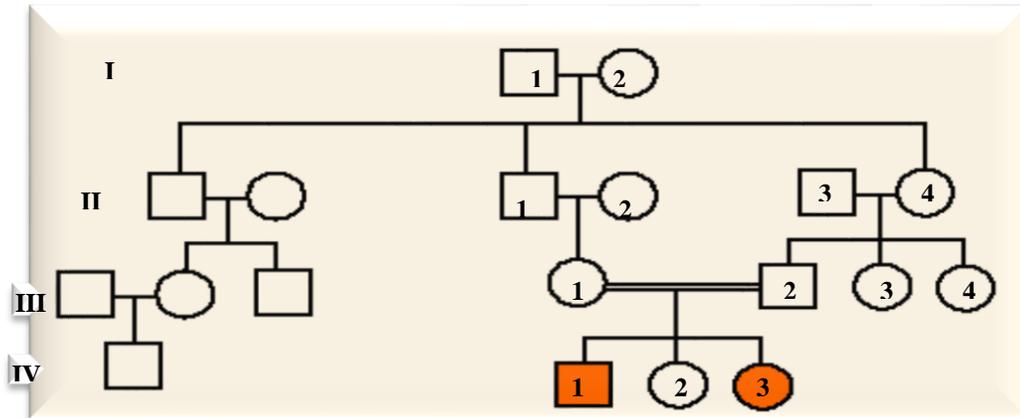
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90. Which of the following patterns of heredity can result in an intermediate trait, such as pink snapdragon flowers?
- Multiple alleles
 - Incomplete dominance
 - Co-dominates
 - Sex-linked alleles
91. Which of the following is responsible for fur color in arctic foxes and snow hare's which depends on temperature?
- Multiple alleles
 - Incomplete dominance
 - Co-dominance
 - Environmental conditions
92. Which of the following is influenced by polygenic inheritance?
- Sickle-cell anemia
 - Blood type
 - Hair color
 - Tay-Sachs disease
93. What is probability?
- A genetic disorder
 - The law of segregation
 - The likelihood that a specific event will occur
 - The Punnett square

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The pedigree below shows the passing on of brown fur (recessive) and black fur color in Labrador retrievers (dominant) in a family of puppies. Shaded shapes mean the puppy is a brown fur color known as a chocolate Lab ... awe, how cute!



94.

What is the genotype of IV-1?

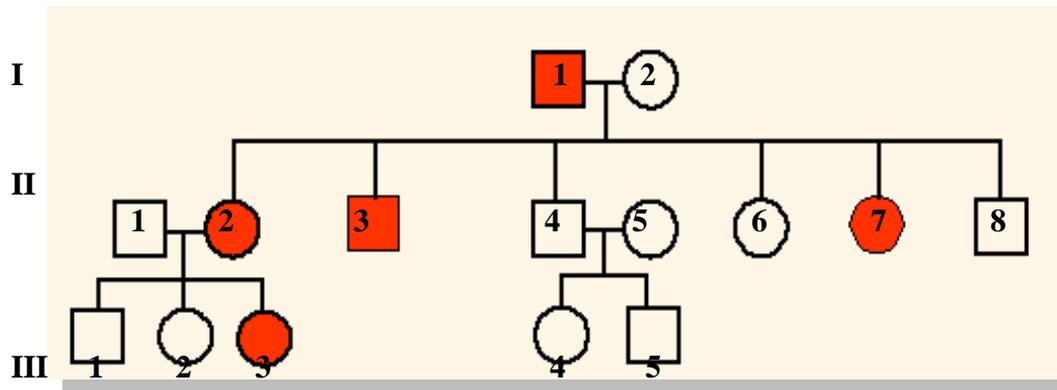
- DD male
- Dd female
- dd male
- Dd male
- dd female

95. What is the genotype of III-1?

- DD male
- Dd female
- dd male
- Dd male
- dd female

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NOTE- carriers are not shown on this pedigree although Sickle Cell Anemia IS A RECESSIVE DISORDER.

96. Which members of the family above are afflicted with sickle cell anemia?

- I-2
- II-6
- III-1
- II-4
- II-7

97. How many girls have the diagnosis of Sickle Cell?

- 5
- 8
- 3
- 2

98. How many males are represented in the above chart?

- 2
- 5
- 7
- 3