END OF YEAR REVIEW 2

 1 Enzymes catalyze reactions by

 A supplying energy to speed up a reaction

 B lowering the energy of activation of a reaction

 C lowering the delta G of a reaction

 D changing the equilibrium of a spontaneous reaction

 E increasing the amount of free energy of a reaction

 2 Motor proteins provide for molecular motion in cells by interacting with what types of cellular
 structures?

 A membrane proteins

 B ribosomes

 C cellulose fibers in the cell wall

 E cytoskeleton

 3 In plants gametes are produced by

 A meiosis

 B mitosis

 C fertilization

 D sporulation

 4 Cystic fibrosis affects the lungs, pancreas, digestive system, and other organs resulting in symptoms
 ranging from breathing difficulties to digestive problems. This is an example of

 A epistasis

 B multiple alleles

 C incomplete dominance

 D pleiotropy

5 A man who has an X-linked recessive disorder (like hemophilia) will pass it on to

 A all his daughters

 B all his sons

 C 1/2 of his daughters

 D 1/2 of sons

 E all of his children

 6 All of the following are TRUE about meiosis EXCEPT

 A crossing over occurs during prophase I

 B there is no replication of chromosomes between meiosis I and meiosis II

 C spindle fibers are attached to centrioles in plants

 D synapsis occurs during prophase I

 7 Which of the following is stored by plants for energy?

 A cellulose

 B glycogen

 C chitin

 D starch

 E glycoproteins

 8 What happens to the carbon atoms in glucose during cellular respiration?

 A They are passed down the electron transport chain

 B They are released to the atmosphere as carbon dioxide during the Krebs cycle

 C They are stored in bundle sheath cells

 D They combine with rubisco to make starch

 E They replace electrons lost from chlorophyll during the light reaction

9 All of the following occur during the light reactions EXCEPT

 A electron transport

 B splitting of water molecules

 C chemiosmosis

 D sunlight excites electrons in photosystem I and II

 E glucose is produced

 10 After telophase I of meiosis, the chromosomal makeup of each daughter cell is \_\_\_\_\_\_\_\_.

 A diploid and chromosomes are composed of a single chromatid

 B diploid and the chromosomes are composed of two chromatids

 C haploid and the chromosomes are composed of a single chromatid

 D haploid and the chromosomes are composed of two chromatids

 E tetraploid and the chromosomes are composed of tetrads

 11 Which of the following groups is involved in the formation of disulfide bridges in proteins?

 A carboxyl

 B hydroxyl

 C amino

 D sulfhydryl

 E phosphate

 12 Which of the following is an example of a possible step in the post-transcriptional control of

 gene expression?

 A the addition of methyl groups to cytosine bases in DNA

 B the folding of DNA to form heterochromatin

 C the removal of introns and splicing together of exons

 D the binding of repressors to regulatory sequences

 13 Arrange the following in order used in replication.

 1-PRIMASE 2-HELICASE 3- singlestranded binding proteins 4-DNA POLYMERASE

 A 1,2,3,4

 B 1,3,2,4

 C 2,3,1,4

 D 2,3,4,1

 E 2,4,3,1

 14 The trp operon

 A can be turned on by the presence of tryptophan

 B is normally turned off

 C is an example of an inducible operon

 D is an example of a repressible operon

 15 Which of the following is TRUE of DNA polymerase?

 A It can only add nucleotides to the 3' end of an existing strand

 B It replicates the lagging strand continuously

 C It replicates the leading strand in fragments

 D It makes pre-mRNA's that need to be edited

 E It is only found in prokaryotes but not eukaryotes

 16 Meselson and Stahl's experiment with labeled nucleotides provided evidence that DNA replicates using
 which method?

 A conservative

 B semi-conservative

 C dispersive

17 Which of the following is involved in contraction of muscle fibers?

 A iron

 B magnesium

 C calcium

 D iodine

 18 All of the following are true about sister chromatids EXCEPT

 A They are created when DNA is replicated

 B They are attached at the centromere prior to division

 C They are separated during mitosis

 D They have matching copies of the chromosome's DNA

 E They are identical after prophase I

 19 Smooth endoplasmic reticulum exhibits all of the following activities EXCEPT

 A assembling amino acids to make proteins

 B manufacturing lipids

 C manufacturing hormones

 D breaking down toxins

 E regulating calcium in muscle cells

 20 Cyanide is a poison that disables an enzyme involved in ATP production. Which organelle does cyanide
 most directly cripple?

 A smooth ER

 B ribosomes

 C mitochondria

 D lysosomes

 E cytoskeleton

 21 The cytoplasmic channels between plants cells are called

 A gap junctions

 B tight junctions

 C demosomes

 D plasmodesmata

 22 All of the following are evidence for the Endosymbiotic theory EXCEPT

 A mitochondrial/chloroplast DNA is circular and naked

 B mitochondrial/chloroplast DNA reproduces using binary fission

 C mitochodrial/chloroplast inner membranes have bacteria-like lipids/proteins

 D glycolysis happens in the mitocondrial matrix

 E mitochondrial/chloroplast ribosomes are smaller than cytoplasmic ribosomes

 23 Proton pumps are responsible for creating the gradient that does all of the following EXCEPT

 A making ATP in the light dependent reaction

 B moving water and potassium ions into guard cells

 C moving water from roots to shoots in xylem

 D moving ions into roots

 24 Species breeding during different times of the day, different seasons, or different years is

 an example of what type of prezygotic barrier?

 A habitat isolation

 B behavioral isolation

 C temporal isolation

 D mechanical isolation

 E gametic isolation

25 In the Hardy-Weinberg Equation, what does p2 equal?

 A dominant allele frequency

 B recessive allele frequency

 C homozygous dominant genotype frequency

 D heterozygous genotype frequency

 E homozygous recessive genotype frequency

 26 All of the following show how water will move from one kind of solution to another EXCEPT

 A High water potential to low water potential

 B High solution concentration to low solution concentration

 C low molarity to high molarity

 D High free energy to low free energy

 E hypotonic to hypertonic

 27 Having a negative net productivity at the bottom of a lake means

 A Biomass is increasing

 B Biomass is decreasing

 C The rate of photosynthesis is greater than that of respiration

 D More light is getting to the bottom of the lake

 E you measured wrong. Net productivity can't be negative.

28 Which of the following amino acids could participate in hydrophobic interactions with

 another amino acid to stabilize the tertiary structure of a protein?



 A cysteine

 B glutamic acid

 C lysine

 D phenylalanine

 29 All of the following are effects of epinephrine EXCEPT

 A stimulates glycogenolysis

 B increases respiration

 C increases heart rate

 D decreases blood glucose and lipid levels

 30 When lactose is present the lac operon is

 A turned on

 B turned off

 Answer Key : END OF YEAR REVIEW 2

 **Question:** **Answer**

 1 B

 2 E

 3 B

 4 D

 5 A

 6 C

 7 D

 8 B

 9 E

 10 D

 11 D

 12 C

 13 C

 14 D

 15 A

 16 B

 17 C

 18 E

 19 A

 20 C

 21 D

 22 D

 23 C

 24 C

 25 C

 26 B

 27 B

 28 D

 29 D

 30 A

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