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

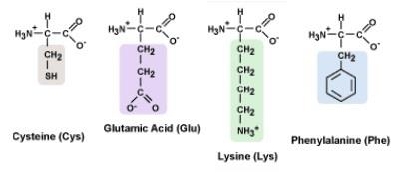
C The rate of photosynthesis is greater than that of respiration

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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