CHAPTER 5

1. **Which of the following statements is FALSE?**

a. Krebs cycle is also called citric acid cycle
b. Krebs cycle occurs in the cytoplasm..
c. Krebs cycle produces 2 ATP
d. Krebs cycle supplies the third stage of cellular respiration with electrons

2. **The energy currency of the cell is _____.**

a. Glucose
b. ATP
c. Protein
d. Lipid

3. **Glycolysis begins respiration by breaking _____.**

a. ATP
b. Pyruvate
c. Glucose
d. Protein

4. **Cellular respiration can produce up to _____ATP molecules for each glucose molecule.**

a. 23
b. 13
c. 32
d. 20

5. **Cramps during exercise are caused by:**

a. Alcohol fermentation
b. Lactic acid fermentation
c. Glucose
d. Glycolysis

6. **The average adult human needs _____of energy per day.**

a. 2200 kj
b. 2200 km
c. 2200 kcal
d. 2200 kg

7. Which of the following is necessary for oxidative phosphorylation to occur?

a. ATP
b. Oxygen.
c. Carbon dioxide
d. Water

8. During cellular respiration, glycolysis occurs in:

a. Cytoplasm.
b. Thylakoids
c. Chloroplast
d. Mitochondria

9. Fats are excellent sources of energy because they

a. Contain many hydrogen atoms
b. yield more than twice as much ATP per gram than a gram of carbohydrate
c. Yield more than twice as much ATP per gram than a gram of protein
d. All of the above.

10. Which one of the following are the products of the Krebs cycle?

a. ATP
b. NADH
c. $FADH_2$
d. All of the above.

11. In eukaryotic cells, the ATP is produced in the _____.

a. Mitochondria.
b. Nucleus
c. Cytoplasm
d. Ribosome

12. Single-celled eukaryotic microorganisms that are able to ferment under anaerobic conditions are called :

a. Yeasts.
b. Molds
c. Bacteria
d. Protists

13. The final electron acceptor in aerobic respiration is:

a. CO_2
b. O_2.
c. NAD^+
d. ATP

14. Which one of the following processes produces the most ATP?

a. Glycolysis
b. Oxidative phosphorylation.
c. Fermentation
d. Krebs cycle

15. ATP can be generated from _____.

a. Lipids
b. Carbohydrates
c. Proteins
d. All of them .

16. The role of cellular respiration is

a. Breaking down glucose to make ATP.
b. Forming glucose from carbon dioxide and water
c. Forming water from glucose
d. consuming ATP to form oxygen

17. In aerobic respiration carbohydrates are ultimately broken down into:

a. CO_2
b. H_2O
c. O_2
d. Heat

18. Cellular respiration occurs in which cell type?

a. Plant cells only
b. Animal cell only
c. Both plants and animal cell
d. All but plant cells

19. In glycolysis the most reduced compound formed is:

a. NADH
b. O_2
c. H_2O
d. Pyruvate

20. Many cells also can metabolize pyruvate if oxygen is not present, via the process of:

a. Aerobic respiration
b. Glycolysis
c. Oxidative phosphorylation
d. Fermentation

21. The net result of the breakdown of glucose in glycolysis and fermentation is the production of:

a. 1 ATP
b. 2 ATP
c. 32 ATP
d. 38 ATP

22. As protons flow through the _____ , energy is released and exploited to combine ADP and inorganic phosphate to form ATP.

a. Electron transport chain
b. $FADH_2$
c. ATP synthase
d. NADH

23. Which stage of aerobic respiration requires ATP?

a. Glycolysis
b. Oxidative phosphorylation.
c. Fermentation
d. Krebs cycle

24. This process uses NADH and $FADH_2$ to produce ATP

a. Glycolysis
b. Oxidative phosphorylation.
c. Fermentation
d. Krebs cycle

25. Oxidative phosphorylation is also known as:

a. Glycolysis
b. Calvin cycle
c. The Krebs cycle
d. Electron transport chain

26. Once enough H^+ ions have been pumped outside the membrane, they tend to move back inside the membrane. What is this random movement of particles from areas of high concentration to low concentration called?

a. Active transport
b. Endocytosis
c. Diffusion
d. Exocytosis

27. Which stage of aerobic respiration produces ATP and NADH and releases CO_2?

a. Glycolysis
b. Oxidative phosphorylation.
c. Fermentation
d. Krebs cycle

28. Which of the following is not a coenzyme?

a. FAD
b. NAD
c. NADP
d. ATP

29. What type of metabolic reaction involves a loss of electrons from the molecule involved?

a. Oxidation
b. Reduction
c. Phosphorylation
d. Fermentation

30. What molecule is produced when oxygen is reduced by the electrons in the electron transport chain?

a. Hydrogen
b. Water
c. NADH
d. $FADH_2$

31. What type of metabolic reaction involves a gain of electrons by the molecule involved?

a. Oxidation
b. Reduction
c. Phosphorylation
d. Fermentation

32. What type of metabolic reaction involves the transfer of a phosphate group?

a. Oxidation
b. Reduction
c. Phosphorylation
d. Fermentation

33. How many carbon atoms are found in one molecule of glucose?

a. (1)
b. (2)
c. (4)
d. (6)

34. Organisms that acquire energy through ingestion of food are called which of the following?

a. Autotrophs
b. Phototrophs
c. Chemotrophs
d. Prototrophs

35. Respiration that occurs without oxygen is classified as which of the following:

a. Anabolic
b. Anaerobic
c. Aerobic
d. Catabolic

1	B	6	C	11	A	16	A	21	B	26	C	31	B
2	B	7	B	12	A	17	A	22	C	27	D	32	C
3	C	8	A	13	B	18	C	23	A	28	D	33	D
4	C	9	D	14	B	19	D	24	B	29	A	34	C
5	B	10	D	15	D	20	D	25	D	30	B	35	B