Name: _____ ID No: _____ Tutorial Section: _____

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BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE, PILANI-HYDERABAD CAMPUS
BIO F111 (GENERAL BIOLOGY)
FIRST SEMESTER (2022-23)
ANNOUNCED QUIZ-1 (CLOSED BOOK)

DATE: 13/12/2022 MARKS: 30 DURATION: 30 MINUTES

Instructions:
(1). Clearly encircle the most appropriate answer using a PEN.
(2). There are a total of 30 questions each carrying 1 marks (30X1=30marks).
(3). Please write your NAME, ID No. and TUTORIAL SECTION in bold letters.

1. Which of the following statement about living organisms is false?
(A). Organisms take in energy to perform life activities
(B). Organisms reproduce their own kind
(C). Information carried by DNA controls the pattern of growth and development
(D). Reproduction underlies the capacity of populations to evolve is a myth

2. A carnivorous Venus flytrap closing its leaves rapidly to insect touch is an example of
(A). Growth (B). Ability to respond (C). Reproduction (D). Development

3. Which of these is the accurate order to carry out formal process of inquiry, i.e. scientific method for carrying out hypothesis driven science?
(A). Prediction – Experiment – Hypothesis – Question – Observation
(B). Observation – Question – Hypothesis – Prediction – Experiment
(C). Observation – Hypothesis – Question – Prediction
(D). Experiment – Prediction – Question – Hypothesis – Observation

4. The combination of _____ and _____ molecules result in the formation of fats.
(A). Glycerol and Glucose (B). Ethanol and Fatty acid
(C). Glycerol and Fatty acid (D). Glycerol and Amino Acid

5. In DNA the base pairing involves
(A). Sugar-phosphate bonds (B). Peptide bonds
(C). Hydrogen bonds (D). Both A and B

6. Building polymers of carbohydrate and protein from their respective monomers, and breakdown of these polymers to their respective monomers occurs by _____ and _____ reactions respectively.
(A). dehydration and hydrolysis (B). hydrolysis and dehydration
(C). oxidation and reduction (D). hydrolysis and oxidation

7. Amino acids of different types in a protein are distinguished by their:
(A). hydrogen atom (B). carbonyl group (C). side chain (D). amino group

8. The three-dimensional structure of a protein and its molecular function can be affected by
(A). pH
(B). Temperature
(C). Change in amino acid sequence
(D). All the above

9. Which of the following is true about enzymes?
(A). Enzymes increase activation energy of the products
(B). Activation energy required by the substrate is reduced upon binding of substrate with the enzyme
(C). Entry of substrate into active site of enzyme causes the enzyme to change shape slightly
(D). Both B and C are true

10. The following is a short stretch of the sequence on one of the strands of DNA: ATTGGCCCGA The sequence on the other strand will be:
(A). ATTGGCCCGA (B). TAATTAAACT (C). CGGAATTTAC (D). TAACCGGGCT

11. In an animal cell, attachment sites for bacteria, protozoa and viruses are found on:
(A). Nuclear membrane (B). Golgi body (C). Lysosome (D). Plasma membrane

12. Identify the organelle that executes all the following functions - modification of molecules, manufacturing of polysaccharides and lipids, packaging molecules in sacs.
(A). Golgi apparatus (B). Mitochondria (C). Peroxisomes (D). Inclusion bodies

13. Components of ribosomes in a eukaryotic cell are made in _____.
(A). Golgi Apparatus (B). Smooth endoplasmic Reticulum
(C). Lysosome (D). Nucleolus

14. _____ in the cells of flower petals may contain pigments that attract pollinating insects.
(A). Chloroplast (B). Central vacuole (C). Golgi Apparatus (D). Nucleolus

15. Which of the following is true about cell's cytoskeleton?
(A). It can be quickly dismantled in one part of the cell by removing protein subunits.
(B). It may cause the whole cell or some of its parts to move.
(C). It may re-form in a new location by reattaching the protein subunits.
(D). All of the above

16. Which of the following statement is incorrect for mitochondria?
(A). They are found in almost all eukaryotic cells
(B). Aerobic and anaerobic respiration takes place exclusively inside them
(C). They produce ATP from the energy of food molecules
(D). They have their own DNA

17. Most plant cells do not contain _____.
(A). Cell Wall (B). Mitochondria (C). Lysosome (D). Vacuole

18. Organelles that act as cellular power stations are _____ and _____.
(A). Ribosome and Golgi apparatus (B). Mitochondria and Chloroplast
(C). Mitochondria and Ribosome (D). Mitochondria and Cytoskeleton

19. Which of the following cellular transport process does not require energy?
(A). Facilitated diffusion (B). Active transport (C). Osmosis (D). Both A and C

20. A shortage of phosphorus in the soil would make it especially difficult for a plant to manufacture
(A). DNA (B). Proteins (C). Cellulose (D). Fatty acids

21. Which step of cellular respiration can occur without oxygen?
(A). ETC (B). Citric acid cycle (C). Glycolysis (D). All the options are incorrect

22. Fermentation in yeast cells relies on only _____ stage of cellular respiration.
(A). ETC (B). Citric acid cycle (C). Glycolysis (D). All the options are correct

23. The net gain of ATP per glucose molecule in muscle cells in the absence of oxygen is
(A). 4 ATP (B). 32 ATP (C). 2 ATP (D). 36 ATP

24. Coenzyme A (CoA) is an enzyme derived from _____.
(A). pyruvic acid (B). ascorbic acid (C). Vitamin B (D). Vitamin A

25. Which molecule acts as an electron acceptor during glycolysis?
(A). NAD+ (B). NADH (C). FAD (D). O_2

26. Cyanide, when bound to the protein complex in the electron transport chain blocks
(A). the passage of O_2 (B). the passage of NADH
(C). the passage of electrons to oxygen (D). the passage of $FADH_2$

27. Across which of the following membranes protons are pumped as part of electron transport chain and ATP generation, during photosynthesis?
(A). Outer membrane of chloroplast (B). Inner membrane of chloroplast
(C). Thylakoid membranes (D). All the three membranes

28. During photosynthesis, which of the following are produced by reactions that take place in the thylakoids and are consumed by the reactions in the stroma?
(A). CO_2 and ATP (B). $NADP^+$ and ADP
(C). ATP and NADPH (D). glucose and O_2

29. Choose the correct statement from the given below
(A). Chlorophyll absorbs green light
(B). Photosynthesis takes place only in prokaryotes
(C). Light-dependent reactions take place in stroma of chloroplasts
(D). None of the above is correct

30. Electrons lost from chlorophyll molecules in first photosystem are replenished by the splitting of:
(A). Oxygen (B). Nitrogen (C). H_2O_2 (D). H_2O