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|------------------|--|-------------------------|--|------------------|-----------------|----------------|
| Name: _____      |  |                         |  |                  |                 |                |
| Subject: Biology |  | Class: 11 <sup>th</sup> |  | Time: 80 minutes |                 |                |
| Chapter No.3     |  | MJDexpert.com           |  |                  | Total Marks: 40 | Obtained marks |

**Note:** Please attempt any 11 short questions from Question 2. Also, attempt both parts (a and b) of Question 3. Cutting and removal of any content is strictly prohibited.

### Objective-Section

**Q. 1 Encircle the correct answer. (10x1=10)**

- Enzymes are primarily composed of:  
(A) Carbohydrates (B) Nucleic acids (C) Amino acids (D) Lipids
- The part of the enzyme that interacts with the substrate is called the:  
(A) Active site (B) Binding site (C) Catalytic site (D) Coenzyme
- Enzymes that require an inorganic ion for their activity are called:  
(A) Coenzymes (B) Prosthetic groups (C) Activators (D) Apoenzymes
- An enzyme without its coenzyme is known as:  
(A) Holoenzyme (B) Apoenzyme (C) Coenzyme (D) Proenzyme
- Which of the following is NOT a factor affecting enzyme action?  
(A) Enzyme concentration (B) Substrate concentration (C) Light intensity (D) pH value
- The Lock and Key Model of enzyme action was proposed by:  
(A) Koshland (B) Fischer (C) Emil (D) Fischer and Koshland
- Which of the following is an example of a reversible inhibitor?  
(A) Cyanide (B) Antibiotics (C) Penicillin (D) Non-competitive inhibitors
- In which organelle are the enzymes important for cellular respiration found?  
(A) Nucleus (B) Chloroplast (C) Mitochondria (D) Ribosome
- The rate of enzyme action typically increases with temperature until:  
(A) It reaches the enzyme's optimum temperature (B) It reaches the boiling point (C) The enzyme is denatured (D) The enzyme concentration is halved
- The optimum pH for pepsin is:  
(A) 2.00 (B) 4.50 (C) 6.80 (D) 9.00

### Subjective-Section

**Q.2 Write short answers of any ten of the following questions: (11x2=22)**

- List two conditions that destroy enzymatic activity by disrupting bonds between the atoms in an enzyme.
- How do low and high temperatures affect enzyme activity?
- What is a prosthetic group?
- Define inhibitors of enzymes.
- How does an enzyme accelerate a metabolic reaction?
- Describe the role of co-factors in enzyme activity.
- What is the difference between a competitive and a non-competitive inhibitor?
- Explain the concept of enzyme specificity.
- Describe the role of coenzymes and how they relate to vitamins.
- What happens to an enzyme's activity when the substrate concentration is very high?
- Why is the Lock and Key model important in understanding enzyme action?
- Describe the Induced Fit Model of enzyme action.

**Q.No.3 Long Question: (5+5=10)**

- Explain how enzymes interact with their substrates and the role of the active site.
- Discuss the impact of temperature and pH on enzyme activity.