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**THE ANSWERS MUST BE ATTEMPTED ON THE ANSWER SHEET PROVIDED**

**Q.1. Answer the following short questions:**

**(6x5=30)**

- i. Describe various features of Bacteriophages and their virulence.
- ii. Describe Plasmid characteristics copy number with examples.
- iii. Describe the steps to isolate plasmid DNA.
- iv. Discuss the features of restriction enzymes in gene Cloning?
- v. Explain DNA ligation and enzymes responsible for it.
- vi. Define the following terms:

- 1) Chimeric DNA
- 3) Ideal vector
- 5) Introns

- 2) Gene of Interest
- 4) Phages

**Q.2. Answer the following questions.**

**(3x10=30)**

- i. Describe the procedure for recombinant selection.
- ii. Differentiate between the PCR and Gene Cloning via Bacterium.
- iii. Explain stepwise procedure to produce proteins from the cloned genes.