**Temperate phage/Lysogeny**

1. Which of the following is essential for recombination between phage and bacterial genomic DNA?
   1. **Integrase**
   2. Portal protein
   3. Endolysin
   4. Holin
2. The life cycle in which a bacteriophage integrates its own DNA with the bacterial DNA and passes it to future generations is called:
   1. Virulent
   2. **Lysogenic**
   3. Lytic
   4. Lambda
3. Which type of bacteriophage is not able to form a prophage?
   1. **Virulent**
   2. Temperate
   3. Lysogenic
   4. Lambda
4. Which infection cycle is characterized by retention of the phage DNA molecule in the host bacterium for multiple cell divisions?
   1. **Lysogenic cycle**
   2. Lytic cycle
   3. Integrative phase
   4. Protein synthesis

**Functions related to phage structure**

1. Which of the following describes the function of the portal protein?
   1. It helps in the attachment of phage to the bacterial cell
   2. **It is the point of attachment of capsid vertex to the tail**
   3. The portal helps in the lysis of cells
   4. The portal helps in transporting the DNA from the virus to the bacterial cell
2. Members of siphoviridae have flexible, non-contractile tailed phages, and myoviridae are contractile tailed phages. Which of the following is used to inject DNA into host cells through the membrane?
   1. **Tail tube protein**
   2. Tail sheath protein
   3. Tail fiber
   4. Holin
3. What is the number of major tail proteins in phages that have contractile tails?
4. **One**
5. Two
6. Three
7. Depends on the length of the tail
8. While studying the phamerator map of a phage genome, a student notices a protein that is much smaller in size than members of the same cluster; the electron micrographs show that the tail is shorter. Which of the following could be the protein in question?
   1. **Tape measure protein**
   2. Major tail protein
   3. Minor tail protein
   4. Tail assembly chaperone
9. What is the function of a tail of a phage?
   1. Stabilization of phage DNA
   2. **Attachment to host**
   3. Release of replicative enzymes
   4. Help in motility
10. The nucleic acid core of phages is covered by a protein coat known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
    1. Capsomere
    2. **Capsid**
    3. Outer envelope
    4. Nuclear membrane
11. The most complex type of bacteriophages have which of the following morphological features?
    1. **hexagonal head and tail fibers**
    2. no contractile sheath
    3. hexagonal head but no tail
    4. hexagonal head, rigid tail with contractile sheath

**Genome arrangement**

1. How are genes arranged in a phage genome?
   1. Alternating genes
   2. **In related groups**
   3. On opposite ends of the genome
   4. Similar genes at distant positions

**Phage life cycle**

1. Which of the following is the correct sequence of events in myoviridae phage replication?
   1. adsorption, DNA injection, tail sheath contraction
   2. **adsorption, tail sheath contraction, DNA injection**
   3. adsorption, absorption, tail sheath contraction, attachment
   4. absorption, adsorption, DNA injection, loss of tail fibers
2. Which of the following events is likely to happen if the terminase gene is missing?
   1. **The phage genome will not be packaged in the capsid.**
   2. The bacterial cell will not lyse.
   3. The capsid will not assemble.
   4. The tail will be shorter.

**Non-structural phage functions**

1. A bacterial cell has assembled mycobacteriophage within its cytoplasm; which of the following will release the phage particles from the host cell?
   1. Portal protein
   2. **Endolysin**
   3. Terminase
   4. Protease
2. A phage is found to encode an HNH endonuclease gene. What does this gene do for the phage?
   1. Allows for lysis of the host cell
   2. **Assists with DNA packaging**
   3. Caps off the tail after assembly
   4. Main enzyme that synthesizes copies of the genome
3. Which function below is NOT related to DNA replication?
   1. Helicase
   2. Primase
   3. Polymerase
   4. **Terminase**