1. DNA fingerprinting is mainly used to compare:
   A. Protein sequences
   B. DNA sequences of individuals
   C. RNA molecules
   D. Enzyme activity (B)

Explanation : DNA fingerprinting is a technique used to compare DNA sequences and identify genetic differences between individuals.

2. The major basis of DNA fingerprinting is:
   A. Protein synthesis
   B. DNA polymorphism
   C. DNA replication
   D. Mutation repair (B)

Explanation : DNA fingerprinting depends on variations (polymorphism) present at specific locations in DNA sequences.

3. Who developed DNA fingerprinting using repetitive DNA sequences?
   A. Frederick Sanger
   B. Alec Jeffreys
   C. Watson and Crick
   D. Jacob and Monod (B)

Explanation : Alec Jeffreys developed DNA fingerprinting by using repetitive DNA sequences.

4. Short DNA sequences repeated multiple times are called:
   A. Exons B. Introns
   C. Repetitive DNA D. Coding DNA (C)

Explanation : Repetitive DNA consists of short DNA sections repeated multiple times within a sequence.

5. VNTR stands for:
   A. Variable Number Tandem Repeat
   B. Variable Nucleotide Transfer Region
   C. Viral Number Tandem Region
   D. Variable Nuclear Transcription Repeat (A)

Explanation : VNTR represents Variable Number Tandem Repeats, which show high polymorphism and are used in DNA fingerprinting.

6. VNTR belongs to which class of satellite DNA?
   A. Micro-satellite
   B. Mini-satellite
   C. Macro-satellite
   D. Coding satellite (B)

Explanation : VNTR sequences are a type of satellite DNA called mini-satellite DNA.

7. The technique used in DNA fingerprinting is:
   A. Northern blotting
   B. Western blotting
   C. Southern blot hybridization
   D. Eastern blotting (C)

Explanation : DNA fingerprinting uses Southern blot hybridization with labelled VNTR probes.

8. In Southern blotting, DNA fragments are separated by:
   A. Centrifugation B. Electrophoresis
   C. Translation D. PCR only (B)

Explanation : DNA fragments are separated according to size using electrophoresis before transfer to a membrane.

9. DNA fingerprinting patterns are generally different among individuals except:
   A. Siblings
   B. Parents
   C. Monozygotic twins
   D. Unrelated individuals (C)

Explanation : Identical twins have the same DNA fingerprint pattern because they have identical genetic material.

10. The sensitivity of DNA fingerprinting can be increased by using:
    A. RNA polymerase
    B. Polymerase Chain Reaction (PCR)
    C. Ribosomes
    D. Restriction enzymes only (B)

Explanation : PCR increases the sensitivity of DNA fingerprinting by amplifying DNA segments.