

Name _____

Microscopic Sleuths: Identifying Microorganisms in Clinical Settings

Open-Ended Response Answer Key

1. Culture and sensitivity testing involves culturing microorganisms from clinical samples and subjecting them to various biochemical tests to identify them and determine their susceptibility to antibiotics. This information helps healthcare professionals select the most effective treatment for infectious diseases, improving patient outcomes.
2. PCR detects microorganisms by amplifying specific genetic sequences present in clinical samples. This technique offers advantages such as high sensitivity, rapid results, and the ability to detect pathogens even at low concentrations, making it invaluable in diagnosing infectious diseases.
3. Serological testing plays a crucial role in diagnosing infectious diseases by detecting antibodies produced by the immune system in response to specific pathogens. It helps confirm the presence of infection and monitor the body's immune response, aiding in disease management and treatment.
4. Mass spectrometry has transformed the identification of microorganisms by analyzing their unique protein profiles. This method provides rapid and accurate results, enabling healthcare professionals to identify pathogens more efficiently than traditional techniques. Additionally, mass spectrometry offers advantages such as high sensitivity and specificity, making it an invaluable tool in clinical microbiology.

