PAPER-III

SUBJECT CODE & NAME- 801510-MEDICAL ELECTRONICS, BIOPHYSICS AND COMPUTER USAGE RELEVANT TO CARDIAC TECHNOLOGY AND BASIC ELECTROCARDIOGRAPHY

UNIT – 1-Puzzle 4:

Case-Based Puzzle Adaptation - Electrode Swapping

This is a direct application of the source's Case-Based Puzzle - Patient Diagnosis format to electrode systems.

Case: A 40-year-old patient is having an ECG performed. The machine displays strange readings in the Electrocardiographic lead systems. Reviewing the chart shows:

- Lead I (normally) is inverted (negative QRS).
- Lead II (normally) appears to look exactly like a normal Lead III.
- Lead III (normally) appears to look exactly like a normal Lead II.

Questions:

1. Based on the rules governing the Standard Limb Leads, which two electrodes are most likely swapped?
2. If the patient had only their Left Leg (LL) electrode removed (but the machine still registered some noise), which fundamental principle of the standard ECG system would be violated?
3. Why are Leads II and III swapped, but Lead I is merely inverted?