CLASS TEST CHAPTER 4 F.M.

1. If the number of magnetic field lines around an electromagnet increases, it indicates:

A. Decrease in magnetic strength
B. Increase in magnetic strength
C. Reversal of poles
D. Loss of magnetism

2. A student wants to lift the maximum number of iron pins using an electromagnet. Which combination is best?

A. Soft iron core + more turns + stronger current
B. Plastic core + fewer turns + weak current
C. Wooden core + fewer turns + weak current
D. No core + weak current

3. Assertion (A): **Soft iron is preferred for making electromagnets.**
Reason (R): **Soft iron is easily magnetised and demagnetised.**

A. Both A and R are true and R explains A.
B. Both A and R are true but R does not explain A.
C. A is true but R is false.
D. A is false but R is true.

4. Why are permanent magnets not preferred in electric cranes?

A. They are expensive
B. They cannot be switched off when releasing scrap metal
C. They are weak
D. They require batteries

5. Which statement is TRUE?

A. Clockwise current at an end gives North Pole.
B. Anticlockwise current at an end gives South Pole.
C. Clockwise current at an end gives South Pole.
D. Pole determination is not related to current direction.

CASE STUDY: A student observes one end of a current-carrying coil. Looking directly at that end, he finds that the current appears to move in an anticlockwise direction. Another student says that this end must be a South Pole because electric current always flows from positive to negative terminal.

6. According to the clock-face rule, the observed end is a:
A. South Pole
B. North Pole
C. Neutral Pole
D. Temporary Pole

7. Why is the second student's conclusion incorrect?
A. Pole determination depends on the direction of current around the coil, not on the battery terminal alone.
B. Current does not flow in a coil.
C. A coil has only one pole.
D. Batteries do not affect electromagnets.

8. If the battery connections are reversed, the observed end will become:
A. North Pole again

B. South Pole
C. Neutral Pole
D. Stronger North Pole

9. Which observation would confirm the polarity of the coil?
A. Colour of the wire
B. Temperature of the battery
C. Deflection of a compass needle nearby
D. Length of the wire

10. Which scientific skill is mainly being used here?
A. Classification
B. Observation and interpretation
C. Measurement only
D. Calculation only