ASM TUITION ACADEMY

PHYSICS

YEAR 8

TOPIC: Types of Magnets

TEST QUESTIONS

TOTAL MARKS: 55

TIME: 45 MINUTES

SECTION A: MULTIPLE-CHOICE QUESTIONS

Q1–Q10: Choose the correct answer. [10 marks]

Q1. What is a permanent magnet?

A. A magnet that loses magnetism immediately
B. A magnet that keeps its magnetic properties
C. A magnet that works only with a battery
D. A magnet made only of copper

Q2. Which three materials are strongly magnetic?

A. Copper, plastic and wood
B. Iron, nickel and cobalt
C. Aluminium, copper and glass
D. Carbon, plastic and rubber

Q3. What happens when a steel nail is repeatedly stroked in one direction with a magnet?

A. It becomes non-magnetic
B. It becomes magnetised
C. It melts
D. It loses its iron atoms

Q4. What are the tiny regions inside a magnetic material called?

A. Circuits
B. Coils
C. Domains
D. Batteries

Q5. What happens to the domains when a steel nail is magnetised?

A. They disappear
B. They become randomly arranged

C. They align in the same direction
D. They turn into electric currents

Q6. What is an electromagnet?

A. A magnet produced by an electric current
B. A magnet that never uses electricity
C. A piece of plastic
D. A permanent magnet made of wood

Q7. What happens to the magnetic field of an electromagnet when the switch is opened?

A. It becomes stronger
B. It disappears when the current stops
C. It stays equally strong forever
D. It changes into a permanent magnet

Q8. Which type of magnet produces a weak magnetic field according to the notes?

A. Bar magnet
B. Solenoid with an iron core
C. Electromagnet with an air core
D. Permanent steel magnet

Q9. Which arrangement produces a very strong magnetic field?

A. A solenoid with an iron core carrying current
B. A copper wire with no current
C. An open circuit with no current
D. A plastic rod

Q10. Which type of magnet can be switched on and off?

A. Permanent magnet
B. Electromagnet
C. Unmagnetised nail
D. Steel bar with no current

SECTION B: FILL IN THE BLANKS

Q11–Q20: Complete each sentence. [10 marks]

Q11. A permanent magnet keeps its magnetic _____.

Q12. Iron, nickel and _____ are strongly magnetic materials.

Q13. A steel nail is made from iron mixed with _____.

Q14. The tiny magnetic regions inside a material are called _____.

Q15. Stroking a steel nail with a magnet can _____ the nail.

Q16. An electric current flowing through a coil creates a magnetic _____.

Q17. When the switch is open, no electric _____ flows.

Q18. An electromagnet with an air core produces a _____ magnetic field.

Q19. A solenoid containing a soft iron core produces a _____ magnetic field when current flows.

Q20. An electromagnet can be switched on and _____.

SECTION C: SHORT-ANSWER QUESTIONS

Q21–Q29: Answer all questions. [35 marks]

Q21. Define a permanent magnet and name two strongly magnetic materials. **[3 marks]**

Q22. Explain how a steel nail can be magnetised by stroking it with a magnet. **[4 marks]**

Q23. What are magnetic domains, and what happens to them when a nail is magnetised? **[4 marks]**

Q24. Explain what happens to the magnetic field around a coil when its switch is opened and closed. **[4 marks]**

Q25. What is an electromagnet, and how is its magnetic field produced? **[4 marks]**

Q26. Describe how a solenoid with a soft iron core produces a strong magnetic field. **[4 marks]**

Q27. Compare a permanent magnet with an electromagnet. **[4 marks]**

Q28. Compare the strength of the magnetic fields produced by a bar magnet, an electromagnet with an air core, and a solenoid with an iron core. **[4 marks]**

Q29. Explain why an electromagnet is useful when a magnetic field needs to be switched on and off. **[4 marks]**