ENGLAND GCSE PHYSICS OCR GATEWAY HIGHER · UNIT 4 · 25 QUESTIONS

# Magnetism and Magnetic Fields — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

**1** **A basketball bounces. What type of energy is stored when the ball squashes?**

- A thermal
- B elastic potential
- C kinetic
- D gravitational potential

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2 **Hardcover books have mass. What is mass measured in?**

- A joules
- B newtons, the unit of force
- C kilograms
- D watts

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3 **A wristwatch ticks every second. How many ticks in a minute?**

- A 60
- B 30
- C 12
- D 100

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4 **A guitar is plugged into an amplifier. What flows through the cable?**

- A sound waves travelling along it
- B electric current
- C light
- D water

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5 **A calculator runs on a small current. What is current measured in?**

- A watts, the unit of power
- B ohms, the unit of resistance
- C amperes
- D volts, the unit of voltage

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6 **A tennis ball bounces. What happens to its kinetic energy?**

- A it all stays kinetic energy
- B it becomes light energy
- C it disappears completely
- D some becomes heat

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7 **A generator coil turns 5 times per second. How many turns is that in one minute?**

- A 360
- B 600
- C 300
- D 240

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8 **A solenoid has a bigger current through it. What happens to its magnetic field?**

A it gets stronger

B it stays the same

C it disappears

D it gets weaker

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9 **What is a transformer used for?**

A changing the current only

B making electricity

C storing electricity

D changing the voltage

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10 **How can an electromagnet be made stronger?**

- A a wooden core
- B a smaller current
- C more turns on the coil
- D fewer turns on the coil

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11 **What happens when two north poles are brought together?**

- A they repel
- B they attract
- C nothing happens
- D they neutralise

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12 **What does the right-hand grip rule tell you?**

- A the current size
- B the wire length
- C field direction
- D the wire material

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13 **How can the force on a wire be increased?**

- A a weaker field
- B a larger current
- C a shorter wire
- D a smaller current

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14 **How does a generator make electricity?**

A a magnet is heated

B a current flows through a coil

C a coil turns in a field

D a battery is charged

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15 **A transformer has 100 turns on the primary coil and 50 turns on the secondary coil. What is the turns ratio?**

A 1

B 2

C 3

D 4

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16 **What does the behaviour of a compass tell us about the core of the Earth?**

A it must be very hot

B it must be hollow

C it must be made of iron

D it must be magnetic

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17 **A transformer has a primary voltage of 230 V. The secondary coil has 10 times fewer turns than the primary coil. What is the secondary voltage?**

A 240 V

B 46 V

C 23 V

D 2300 V

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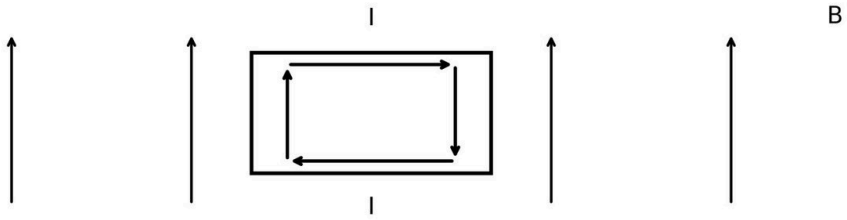
**18** **The diagram shows a coil in a magnetic field with a current through it. What happens to the coil?**




- **A** it heats up
- **B** it turns
- **C** it moves sideways
- **D** it stays still

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**19** **How can more potential be induced in a coil?**

- **A** move the magnet slower, gently
- **B** hold the magnet still
- **C** move it faster, more turns
- **D** use fewer turns

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**20** **A transformer has a primary voltage of 230 V. The number of turns on the secondary coil is 2 times smaller than on the primary coil. What is the secondary voltage?**

- A 115 V
- B 460 V
- C 230 V
- D 240 V

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**21** **In Fleming's left-hand rule, what does the thumb show?**

- A the wire direction
- B the current direction
- C the field direction
- D the force direction

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22 **How can the force on a wire in a magnetic field be increased?**

- A use a smaller current, half as big
- B use a shorter wire
- C use a weaker magnet
- D bigger current, stronger magnet

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23 **A microphone and a loudspeaker both use a coil in a magnetic field. How do they differ?**

- A one uses light and the other uses heat
- B sound to current, current to sound
- C they work in exactly the same way
- D one needs no magnet at all

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**24** **How can the direction of a magnetic field be found?**

- **A** with a stopwatch
- **B** with a compass
- **C** with a ruler
- **D** with a thermometer

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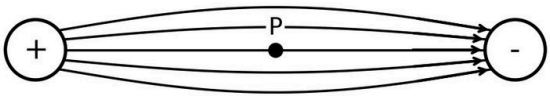
**25** **The diagram shows the electric field around two charges. In which direction do the field lines go?**




- **A** in circles
- **B** from positive to negative
- **C** from negative to positive
- **D** they do not have a direction

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# ANSWER KEY

| | | | | | |
|---|---|---|---|---|---|
| **1.** | B | **10.** | C | **19.** | C |
| **2.** | C | **11.** | A | **20.** | A |
| **3.** | A | **12.** | C | **21.** | D |
| **4.** | B | **13.** | B | **22.** | D |
| **5.** | C | **14.** | C | **23.** | B |
| **6.** | D | **15.** | B | **24.** | B |
| **7.** | C | **16.** | D | **25.** | B |
| **8.** | A | **17.** | C | | |
| **9.** | D | **18.** | B | | |

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