Magnetism and electromagnetism

Physics Paper 2 | 30 quick questions

GCSE science knowledge recall

Answer online, marked instantly

Name: _____ **Date:** _____ **Score:** _____ **/ 30**

1 What happens when the north pole of one magnet is brought near the north pole of another? Answer in one word.

2 Where is the magnetic field of a bar magnet strongest?

3 What is the name for a magnet that produces its own magnetic field all the time? Answer in two words.

4 Is the force between a permanent magnet and an induced magnet always attraction or always repulsion?

5 Iron, nickel and cobalt are magnetic. Which common alloy, made mostly of iron, is magnetic too?

6 Magnetic field lines go from which pole of a magnet to which? Give the pole they start from.

7 What small piece of equipment can be used to plot the shape of a magnetic field?

8 A compass points north even with no magnet nearby. What does this show the Earth has? Answer in two words.

9 What shape is the magnetic field around a long straight current-carrying wire? Answer in two words.

10 If the current in a wire is increased, does the strength of its magnetic field increase or decrease?

11 What is the name for a wire wound into a long coil? Answer in one word.

12 What is the name for a solenoid with an iron core? Answer in one word.

13 Give one way to increase the strength of the magnetic field of a solenoid, other than adding an iron core.

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14 Describe in one sentence how an electromagnet is used in a scrapyard crane.

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15 What is the name for the force on a current-carrying wire placed in a magnetic field? Answer in two words.

Higher

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16 Which rule is used to work out the direction of the force in the motor effect?

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17 Complete the word equation: force = magnetic flux density × current × ...?

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18 What is the unit of magnetic flux density? Give the name.

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19 A 0.5 m wire carries 2 A at right angles to a 0.1 T field. What is the force on it, in newtons?

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20 What happens to the direction of the force on the wire if the current is reversed?

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21 A coil carrying a current in a magnetic field turns. What turning effect does the motor effect produce on the coil?

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22 Give one change that makes a simple electric motor spin faster.

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23 What is the name for a potential difference produced across a wire when it moves relative to a magnetic field? Answer in four words or fewer.

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24 A magnet is pushed into a coil, then held still inside it. What is the induced potential difference while it is held still?

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25 Moving a magnet faster into a coil makes the induced potential difference bigger or smaller?

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26 What is the name for a generator that produces alternating current? Answer in one word.

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27 Which device uses the generator effect to change the pressure variations of sound waves into a changing current?

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28 A transformer has more turns on its secondary coil than its primary coil. Is it a step-up or step-down transformer?

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29 A transformer has 100 turns on its primary coil and 500 on its secondary. The input is 12 V. What is the output potential difference, in volts?

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30 Explain in one sentence why a transformer needs an alternating current, not a direct current, in its primary coil.

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