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 **Brain waves quiz**

Biomedical signal processing is all about capturing and analysing signals form the body, anything from analysing electrical activity in the brain to creating images such as X-rays and MRI scans.

Have a go at the quiz and see how much you know about biomedical signal processing. Hint: You may find it useful to watch our Brain waves video first!

Good luck.

1. **How much does an average, adult human brain weigh?**
2. Between 5 and 6 kg
3. Between 3 and 4.5 kg
4. Between 1 and 1.5 kg
5. Between 0.25 and 0.75 kg
6. **How are messages passed along neurones?**
7. Electrical signals
8. Low pitched whistles
9. Optical signals
10. Sound waves
11. **What does fMRI stand for?**
12. Further Motion Resistant Imaging
13. Functional Magnetic Resonance Imaging
14. Functional Magnetic Resonance Indicating
15. Further Magnetic Resonance Imaging
16. **How does magnetoencephalography (MEG) work?**
17. By measuring the weak magnetic fields generated by neural activity in the brain
18. By injecting a magnetic liquid into the brain and following the route it takes with a special scanner
19. By measuring variations in the Earth’s magnetic field caused by brain activity
20. By measuring the amount of sweat produced in different areas of the scalp while the patient performs certain tasks
21. **Gamma rays, X-rays and radio waves are all part of the electromagnetic spectrum and are all used in various types of medical scanners, but which type travels fastest in a vacuum?**
22. Gamma rays
23. X-rays
24. Radio waves
25. They all travel at the same speed
26. **The nerve fibres in our bodies are covered in a myelin sheath. What is the purpose of this sheath?**
27. To protect organs in the body from electric shock
28. To stop body fluids from short circuiting the nerve fibres
29. To insulate the nerve fibre from other nerve fibres around it so that messages get to the right place
30. To keep the nerve fibres cool so that there is less electrical resistance
31. **What are electroencephalographs used for?**
32. Measuring brain activity by measuring and recording electrical activity in the brain
33. Measuring heart activity by measuring and recording electrical activity in the heart
34. Creating real-time images of patient’s internal organs
35. Scanning your bones for hairline fractures
36. **What is assistive technology?**
37. Technology which requires human assistance to operate
38. Computers and other technologies used to improve the performance of individuals with disabilities
39. Technology which is so complex you need expert assistance in order to use it
40. Technology which works in conjunction with other technology
41. **What is a BCI?**
42. A Body Computer Index
43. A Beta Complex Image
44. A Brain Computer Interface
45. A Baryonic Charged Image
46. **What is the grey matter of the spinal cord made from?**
47. Mainly muscle cells
48. Mainly bone
49. Mainly fat cells
50. Mainly nerve cell bodies

**Answers**

1. c
2. a
3. b
4. a
5. d
6. c
7. a
8. b
9. c
10. d