BRITISH COLUMBIA SCIENCE 10 · UNIT C · 25 QUESTIONS

Energy Conservation and Transformation — 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 **The law of conservation of energy states that energy**

- A is used up when work is done
- B can be created by machines
- C cannot be created or destroyed, only transformed
- D always becomes heat and is lost

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2 **A 2 kg rock sits 5 m above the ground. Using g = 10 m per s squared, its gravitational potential energy, in joules, is ____**

ANSWER _____

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3 **A 4 kg ball moves at 5 m per s. Its kinetic energy, in joules, is ____**

ANSWER _____

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4 **A 3 kg cart moves at 4 m per s. Its kinetic energy, in joules, is ____**

ANSWER _____

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5 **Water with mass 2 kg is heated by 5 degrees. Using c = 4200 J per kg per degree, the heat absorbed, in joules, is ____**

ANSWER _____

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6 **An aluminium block with mass 1 kg is heated by 20 degrees. Using c = 900 J per kg per degree, the heat absorbed, in joules, is ____**

ANSWER _____

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7 **The graph shows potential energy against height for a 2 kg object with g = 10. The potential energy at a height of 3 m, in joules, is**

- A 20
- B 40
- C 60
- D 80

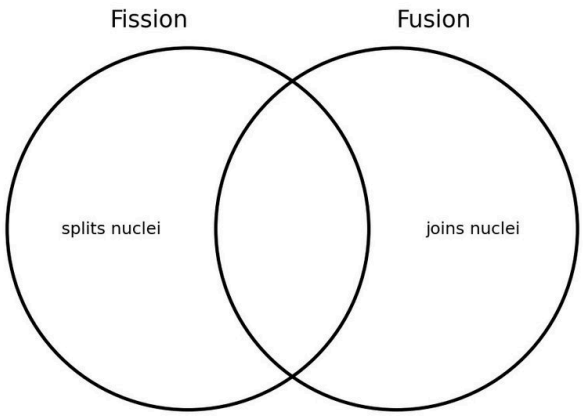
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8 **The graph shows kinetic energy against speed for a 2 kg object. The kinetic energy at a speed of 4 m per s, in joules, is**

- A 4
- B 8
- C 16
- D 32

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9 **The diagram compares fission and fusion. The statement in the overlapping region is**



A splits nuclei

B releases energy

C joins nuclei

D uses coal

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10 **Nuclear fission is the process in which**

A a heavy nucleus splits into smaller nuclei

B two light nuclei join into a heavier nucleus

C an atom loses an electron

D coal is burned to release heat

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11 **The Sun produces energy mainly by**

A fission of uranium

B burning coal

C chemical reactions

D fusion of hydrogen

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12 **An alpha particle can be stopped by**

A a thick lead wall

B a sheet of paper

C several metres of concrete

D a magnetic field only

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13 **A beta particle is**

A a helium nucleus

B a proton

C an electron

D an electromagnetic wave

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14 **Gamma radiation is**

A high energy electromagnetic radiation

B a stream of helium nuclei

C a stream of electrons

D sound waves in air

Understand It with Pulse | Flag a mistake

15 **Ionizing radiation is a health concern because it can**

A warm the skin slightly

B pass through the body harmlessly

C only affect the eyes

D remove electrons from atoms and damage cells

Understand It with Pulse | Flag a mistake

16 **A metal spoon left in a hot pot becomes hot at the handle. This heat transfer is mainly**

A radiation

B conduction

C evaporation

D condensation

Understand It with Pulse | Flag a mistake

17 **When a toaster is switched on, electrical energy is mainly transformed into**

A heat energy

B sound energy

C chemical energy

D nuclear energy

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18 **A flashlight changes energy in the order**

A light to electrical to chemical

B electrical to light to chemical

C chemical to electrical to light

D heat to chemical to light

Understand It with Pulse | Flag a mistake

19 **A long term challenge of nuclear power is**

A storing radioactive waste safely for many years

B finding enough sunlight

C keeping turbines cool with wind

D the fuel running out in days

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20 **Burning fossil fuels for electricity increases carbon dioxide in the air. A likely result is**

- A cleaner air in cities
- B a stronger greenhouse effect
- C less acid rain
- D cooler global temperatures

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21 **Building a large hydroelectric dam can harm wildlife habitat because the reservoir**

- A floods land where animals lived
- B removes oxygen from the air
- C blocks all sunlight
- D makes rivers saltier

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22 **The graph shows the power output of a solar panel during a day. The output is highest at hour**

A 6

B 9

C 12

D 18

Understand It with Pulse | Flag a mistake

23 **Radioisotopes are used in medicine for**

A imaging organs and treating some cancers

B making drinking water safe by taste

C replacing surgery in every case

D cooling hospital rooms

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24 **Which of the following is non-ionizing radiation**

A gamma rays

B visible light

C X-rays

D alpha particles

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25 **Burning coal in a power station can cause air pollution because it releases**

A carbon dioxide and fine particles

B pure oxygen only

C clean water vapour only

D nitrogen gas only

Understand It with Pulse | Flag a mistake

ANSWER KEY

1. C
2. 100
3. 50
4. 24
5. 42000
6. 18000
7. C
8. C
9. B
10. A
11. D
12. B
13. C
14. A
15. D
16. B
17. A
18. C
19. D
20. B
21. A
22. C
23. A
24. B
25. A

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