ENGLAND GCSE PHYSICS EDEXCEL HIGHER · UNIT 3 · 25 QUESTIONS

# Conservation of Energy — 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 cup of coffee is left for an hour. What happens to its temperature?**

- A it falls to room temperature
- B it falls to zero degrees
- C it rises above room temperature
- D it stays the same all day

Understand It with Pulse | Flag a mistake

**2** **A red race car brakes hard. What happens to its kinetic energy?**

- A it increases
- B it disappears
- C it becomes sound only, nothing else
- D it is transferred to heat

Understand It with Pulse | Flag a mistake

3 **A bicycle is ridden uphill. Which energy store increases?**

- A thermal energy from friction
- B elastic potential energy
- C gravitational potential
- D kinetic energy of motion

Understand It with Pulse | Flag a mistake

4 **A cheese pizza is cooked in an oven. How is energy transferred in the oven?**

- A by conduction only, through the tray
- B by evaporation from the cheese
- C by condensation on the oven walls
- D by radiation and convection

Understand It with Pulse | Flag a mistake

5 **A rocket in space has no air around it. What happens to air resistance?**

- A it stays the same
- B it becomes gravity
- C it increases
- D there is none

Understand It with Pulse | Flag a mistake

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

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

Understand It with Pulse | Flag a mistake

7 **A 4 kg block has a specific heat capacity of 500 J/kg degrees Celsius. Its temperature rises by 20 degrees Celsius. How much energy is needed?**

- A 40500 J
- B 80000 J
- C 40000 J
- D 20000 J

Understand It with Pulse | Flag a mistake

8 **A 4 kg object is lifted 2 m. Use g = 10 N/kg. What is the gain in gravitational potential energy?**

- A 80 J
- B 40 J
- C 8 J
- D 160 J

Understand It with Pulse | Flag a mistake

9 **A device transfers 100 J of energy in 20 seconds. What is its power?**

- A 10 W
- B 5 W
- C 2000 W
- D 2.5 W

Understand It with Pulse | Flag a mistake

10 **Two motors do the same work. One takes half the time of the other. How does its power compare?**

- A twice as much
- B four times as much
- C half as much
- D the same

Understand It with Pulse | Flag a mistake

11 **A machine wastes 30 J as heat for every 70 J of useful energy. What is its efficiency?**

- A 30%
- B 43%
- C 100%
- D 70%

Understand It with Pulse | Flag a mistake

12 **What is nuclear power fuelled by?**

- A uranium
- B hydrogen
- C oil
- D coal

Understand It with Pulse | Flag a mistake

13 **A 2 kg object moves at 2 m/s. What is its kinetic energy?**

- A 8 J
- B 4 J
- C 14 J
- D 2 J

Understand It with Pulse | Flag a mistake

14 **Why do some people object to wind turbines?**

- A they only work at night
- B they spoil the view
- C they use up the wind
- D they produce carbon dioxide

Understand It with Pulse | Flag a mistake

15 **A machine uses 1600 J of energy and gives out 400 J of useful energy. What is its efficiency?**

- A 25%
- B 35%
- C 50%
- D 12.5%

Understand It with Pulse | Flag a mistake

16 **What is kinetic energy?**

- A energy of heat
- B energy of movement
- C energy of position
- D energy of light

Understand It with Pulse | Flag a mistake

17 **A 5 kg block has a specific heat capacity of 200 J/kg degrees Celsius. Its temperature rises by 10 degrees Celsius. How much energy is needed?**

- A 5000 J
- B 10000 J
- C 20000 J
- D 10500 J

Understand It with Pulse | Flag a mistake

18 **How can heat loss from a house be reduced?**

- A by insulating the loft
- B by turning the heating up
- C by removing curtains
- D by opening windows

Understand It with Pulse | Flag a mistake

19 **A 5 kg object is lifted 5 m. Use g = 10 N/kg. What is the gain in gravitational potential energy?**

- A 25 J
- B 500 J
- C 250 J
- D 125 J

Understand It with Pulse | Flag a mistake

20 **A device transfers 500 J of energy in 50 seconds. What is its power?**

- A 25000 W
- B 10 W
- C 20 W
- D 5 W

Understand It with Pulse | Flag a mistake

21 **A motor lifts a load and does 500 J of work in 10 seconds. What is the power?**

- A 500 W
- B 5000 W
- C 5 W
- D 50 W

Understand It with Pulse | Flag a mistake

22 **A Sankey display for a light bulb shows 100 J in, 10 J of light out and 90 J of heat out. What is the useful energy?**

- A 90 J of heat
- B 110 J in total
- C 10 J of light
- D 100 J of electricity

Understand It with Pulse | Flag a mistake

**23** **Which of these is a non-renewable energy resource?**

- A wind
- B coal
- C solar
- D tidal

Understand It with Pulse | Flag a mistake

**24** **Why is hydroelectric power reliable?**

- A it works without any water
- B it makes its own rain
- C water can be stored
- D it needs no rain at all

Understand It with Pulse | Flag a mistake

25

**A machine uses 1000 J of energy and gives out 200 J of useful energy. What is its efficiency?**

A 40%

B 10%

C 30%

D 20%

Understand It with Pulse

Flag a mistake

# ANSWER KEY

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

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