ENGLAND GCSE PHYSICS EDEXCEL FOUNDATION · 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 bicycle freewheels downhill. What happens to its speed?**

- A it decreases
- B it stays the same
- C it becomes zero
- D it increases

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2 **A cup of coffee is hot. How is energy transferred to the air?**

- A by evaporation only, from the top
- B by conduction and convection
- C by condensation on the cold cup
- D by radiation only, from the surface

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3 **A red race car speeds up on a straight track. What is the resultant force doing?**

A doing nothing

B causing deceleration

C causing a turn

D causing acceleration

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

A by radiation and convection

B by condensation on the oven walls

C by evaporation from the cheese

D by conduction only, through the tray

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

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

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6 **A rocket launches straight up. Which force acts downwards on the rocket?**

- A thrust
- B air resistance
- C gravity
- D lift

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7 **Which of these is a renewable energy resource?**

A natural gas

B wind

C coal

D oil

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

A 400 J

B 800 J

C 200 J

D 40 J

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9 **Which energy resource will run out first?**

A tidal power

B solar power

C a fossil fuel

D geothermal power

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10 **A 10 kg block has a specific heat capacity of 400 J/kg degrees Celsius. Its temperature rises by 20 degrees Celsius. How much energy is needed?**

A 160000 J

B 80000 J

C 80500 J

D 40000 J

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11 **A 2 kg object moves at 10 m/s. What is its kinetic energy?**

- A 110 J
- B 200 J
- C 100 J
- D 50 J

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12 **A device transfers 200 J of energy in 50 seconds. What is its power?**

- A 10000 W
- B 4 W
- C 2 W
- D 8 W

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13 **A device has a power of 200 W. How much energy does it transfer in 10 seconds?**

- A 20 J
- B 200 J
- C 20000 J
- D 2000 J

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14 **A machine uses 120 J of energy and gives out 60 J of useful energy. What is its efficiency?**

- A 50%
- B 60%
- C 25%
- D 100%

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15 **Why does a Sankey display for a real machine always have an arrow for wasted energy?**

- **A** machines always make extra energy
- **B** arrows must always add to zero
- **C** wasted energy is the useful output
- **D** no machine is perfect

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

- **A** 400 J
- **B** 100 J
- **C** 20 J
- **D** 200 J

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

A they produce carbon dioxide

B they use up the wind

C they only work at night

D they spoil the view

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18 **A 2 kg block has a specific heat capacity of 400 J/kg degrees Celsius. Its temperature rises by 20 degrees Celsius. How much energy is needed?**

A 16000 J

B 8000 J

C 32000 J

D 16500 J

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19 **A 4 kg object moves at 5 m/s. What is its kinetic energy?**

- A 25 J
- B 100 J
- C 50 J
- D 60 J

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20 **A device transfers 500 J of energy in 25 seconds. What is its power?**

- A 10 W
- B 20 W
- C 40 W
- D 12500 W

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

A by opening windows

B by removing curtains

C by insulating the loft

D by turning the heating up

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22 **A kettle transfers 60000 J in 60 seconds. What is its power?**

A 3600 W

B 1000 W

C 60 W

D 100 W

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23 **A machine uses 400 J of energy and gives out 80 J of useful energy. What is its efficiency?**

- A 10%
- B 30%
- C 40%
- D 20%

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

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

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25

What does it mean if an energy resource is renewable?

A it makes no pollution at all

B it will not run out

C it is cheap to build

D it works in any weather

Understand It with Pulse

Flag a mistake

ANSWER KEY

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

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