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GCSE Physics Energy P1

Energy Changes Assignment -3

Assignment Questions

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Efficiency and dissipation of the energy

Q1: Describe what would happen in terms of energy transfer and changes to energy stores, to:

- a) electric drill bit if you use it to drill into hard wood
- b) the metal wheel discs of the brakes of a car when the brakes are applied.

Q 2 a Describe the energy transfers and changes to energy stores of a pendulum as it swings and explain why pendulum stops eventually.

Q3 : Why the percentage efficiency of a machine can never be a) more than 100 % b) equal to 100%.

Q4 : An electric motor is used to raise a weight. When you supply 160 J of energy to the motor, the weight gains 90 J of gravitational potential energy. Calculate:

- a) the energy wasted by the motor
- b) the efficiency of the motor.

Q5: A machine is 45% efficient. If the total energy supplied to the machine is 5000 J, calculate how much useful energy can be transferred.

Q6 : a) State ways in which the efficiency of the machines can be increased.
b) Give examples to illustrate part a.