Work, Energy and Power – 2019 Nov

1. 0625/11, 12,13,21,22,23/O/N/19/No.9,10,11

Brakes are used to slow down a moving car.

Into which form of energy is most of the kinetic energy converted as the car slows down?

A chemical

B elastic

C thermal

D sound

2. 0625/12/O/N/19/No.11

Which source of energy is non-renewable?

A oil

B solar

C tidal

D wind

3. 0625/11/O/N/19/No.10

Which does **not** transfer useful energy?

A emitting a sound wave

B measuring a temperature

C passing an electric current

D pushing a box along the floor

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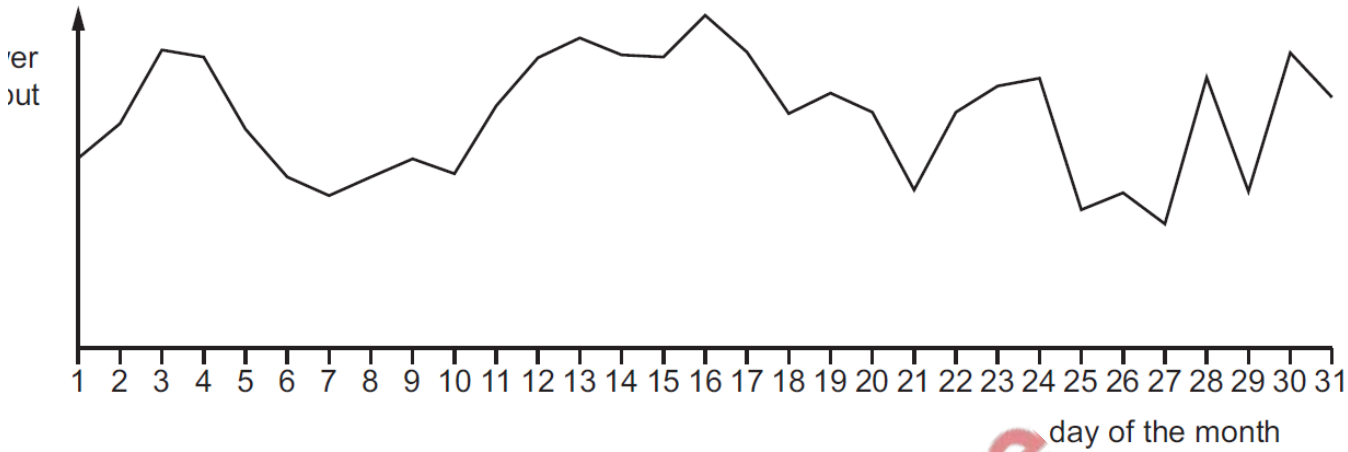
4. 0625/11/O/N/19/No.11

The power output from solar panels is recorded every day for a month.

The graph shows the output recorded.



Which conclusion can be drawn from this graph?

A The power output from the solar panels changes from day to day.

B The power output from the solar panels is cheap to produce.

C Solar panels create no pollution.

D Solar energy is renewable.

5. 0625/12/O/N/19/No.10

What is the unit of thermal energy?

A °C **B** N **C** J **D** W

6. 0625/13/O/N/19/No.10

Three situations are listed.

1 someone blowing air into a party balloon

2 a crane lifting a block of concrete

3 a pile of books at rest on a shelf

In which situations is work being done?

A 1 only **B** 1 and 2 only **C** 2 and 3 only **D** 1, 2 and 3

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7. 0625/13/O/N/19/No.11

A boy lifts a brick from the ground and places it at rest on a higher shelf. He does 30 J of work against gravity.

Which row correctly describes the final energies of the brick?

	gravitational potential energy gained by the brick / J	kinetic energy gained by the brick / J
A	0	30
B	15	15
C	30	0
D	27	3

8. 0625/21/O/N/19/No.11

A man carries 20 tiles from the ground to the roof of a house. Each tile has a mass of 1.2 kg. The roof of the house is 15 m above the ground.

How much work does the man do against gravity on the tiles in carrying them to the roof?

A 36 J **B** 180 J **C** 360 J **D** 3600 J

9. 0625/21,22,23/O/N/19/No.12,13

A car is moving along a straight horizontal road. The car has 1.6 MJ of kinetic energy. The car accelerates for 20 s until the kinetic energy of the car increases to 2.5 MJ.

What is the minimum average power developed by the car engine for this acceleration?

A 45 W **B** 205 W **C** 45 kW **D** 205 kW

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10. 0625/22/O/N/19/No.12

A box of mass 8.0 kg is lifted from the ground and placed on a shelf. The box gains 100 J of potential energy.

The box falls off the shelf. Air resistance can be ignored.

At what speed does the box hit the ground?

A 3.5 m/s **B** 5.0 m/s **C** 25 m/s **D** 28 m/s

11. 0625/23/O/N/19/No.12

A force of 25 N acts on an object. The work done by the force is 400 J.

How far does the object move in the direction of the force?

A 6.3 cm **B** 16 cm **C** 16 m **D** 10 km

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