

GCSE Physics A (Gateway)

J249/02 Physics A P5-P8 and P9 (Foundation Tier)

Question Set 30

Multiple Choice Questions

P8: Global Challenges

1 Which frequency is used for electricity supplied to homes in the UK?

- A 50 Hz a.c.
- B 50 Hz d.c.
- C 230 Hz a.c.
- D 230 Hz d.c.

Your answer

A

[1]

2 The Sun was formed from a cloud of dust and gas.

Which force brought together the particles of the cloud?

- A Electrostatic
- B Frictional
- C Gravitational
- D Magnetic

Your answer

C

[1]

3 Which statement is evidence for an expanding universe?

- A Light from galaxies is red shifted.
- B Nuclear fusion occurs in stars.
- C Many stars have orbiting planets.
- D Stars were formed from dust and gas.

Your answer

A

[1]

4 A student picks up a very hot plate.

What is the **shortest** time the student can react and drop the plate?

- A 2 milliseconds
- B 0.2 seconds
- C 2 seconds
- D 0.2 minutes

Your answer

B

[1]

5 Why are high voltages used to transfer electrical power from power stations in the National Grid?

- A They allow low resistance wires to be used.
- B They produce a higher current.
- C They reduce energy losses.
- D Voltage can be changed using transformers.

Your answer

C

[1]

6 Estimate the typical cruising speed of a jet airliner.

- A 25 m/s
- B 250 m/s
- C 2 500 m/s
- D 25 000 m/s

Your answer

B

[1]

7 A student experiments with a model parachute and collects some results.

She drops the parachute from a height of 4 m three times and takes **three** results of the time taken.

The three results are:

3.25 s

3.00 s

3.08 s

What is the mean of the three results?

A 3.00 s

B 3.08 s

C 3.11 s

D 3.25 s

$$\frac{3.25 + 3.00 + 3.08}{3} = 3.11s$$

Your answer

C

[1]

8 Which statement is **correct** about geostationary satellites?

A They are above the equator and they orbit the Earth in about 90 minutes at a high orbit.

B They are above the equator and they orbit the Earth in 24 hours at a high orbit.

C They are above the equator and they orbit the Earth in 24 hours at a low orbit.

D They are above the poles and they orbit the Earth in 24 hours at a low orbit.

Your answer

B

[1]

9 Which statement describes the domestic electricity supply in the UK?

A 50 V a.c. at 230 Hz

B 50 V d.c. at 230 Hz

C 230 V a.c. at 50 Hz

D 230 V d.c. at 50 Hz

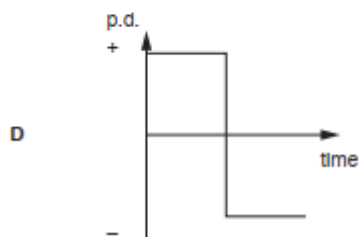
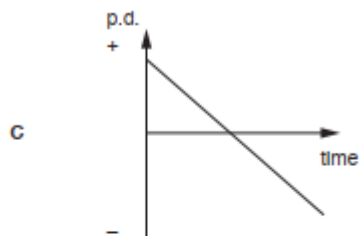
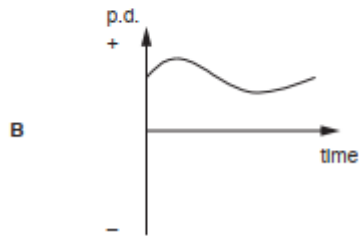
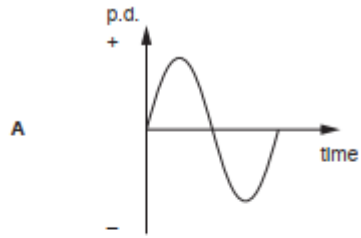
Your answer

C

[1]

10 Here are some graphs for the potential difference (p.d.) of four electrical supplies.

Which graph shows a direct voltage?



Your answer

B

[1]

- 11 Which row in the table correctly describes how the national grid transfers electrical energy efficiently?

	Voltage	Current	Reason
A	High	High	To increase heating in wires
B	High	Low	To reduce heating in wires
C	Low	High	To reduce heating in wires
D	Low	Low	To reduce heating in wires

Your answer

B

[1]

- 12 The acceleration of a car is 2 m/s^2 . The mass of the car is 1000 kg.

Calculate the resultant force on the car.

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

$$F = ma$$

$$F = 1000 \times 2 = 2000$$

Your answer

C

[1]

- 13 The table shows the current and potential difference (p.d.) for four different transformers.

Which row shows the correct data for a **step-up** transformer?

	Primary coil		Secondary coil	
	p.d. (V)	Current (A)	p.d. (V)	Current (A)
A	6	4	12	2
B	12	2	3	8
C	12	2	12	2
D	12	2	24	1.5

V↑ I↓

Your answer

A

[1]

Total Marks for Question Set 30: 13

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