

Question 8

A car of mass 1000 kg travels at 10 m s^{-1} and slows down to rest in 50 s.

The magnitude of the impulse acting on the car over the 50 s is

- A. 200 kg m s^{-1}
- B. 1000 kg m s^{-1}
- C. $10\,000 \text{ kg m s}^{-1}$
- D. $50\,000 \text{ kg m s}^{-1}$

Question 9

An astronaut is floating in the International Space Station, which orbits Earth.

She feels weightless because

- A. Earth's gravity is so small.
- B. she has no weight inside the space station.
- C. she experiences no net force.
- D. she is accelerating toward Earth.

Question 10

A string fixed at both ends on a guitar is plucked and one of the frequencies played by it is 300 Hz.

Which one of the following lists the correct range of the smallest possible frequencies played by the same string at the same time?

- A. 100 Hz, 200 Hz, 300 Hz
- B. 100 Hz, 300 Hz, 400 Hz
- C. 100 Hz, 300 Hz, 500 Hz
- D. 100 Hz, 300 Hz, 900 Hz

Question 11

Which one of the following best identifies the independent variable, its corresponding dependent variable and a possible control variable in the photoelectric effect experiment?

Variables in the photoelectric effect experiment			
	Independent variable	Dependent variable	Controlled variable
A.	photoelectron speed	light intensity	work function
B.	light intensity	light colour	number of photoelectrons
C.	light colour	number of photoelectrons	photoelectron speed
D.	light intensity	number of photoelectrons	stopping potential

Question 12

Recording the length of a string as $(12.3 \pm 0.1) \text{ cm}$ indicates that the

- A. error in the measurement is 0.1 cm.
- B. difference between the measurement and the correct value is 0.1 cm.
- C. experimenter is confident that the true measurement lies somewhere between 12.2 cm and 12.4 cm.
- D. experimenter is not confident that the experimental method will acquire the result.