Sample Assessment - Entrance to Senior Physics

(correct answers marked *)

1.   A group of bike riders took a 3.0-hour trip. During the first 2.0 hours, they traveled a total of 50 kilometres, but during the last hour they traveled only 10 kilometres. What was the group's average speed for the entire trip?

A.   15km/h

B.   20 km/h *

C.   25 km/h

D.   60 km/h

2. The velocity of a car changes from 60. metres per second north to 45 meters per second north in 5.0 seconds. The magnitude of the car's acceleration is

A. $9.8m/s^2$

B. $15m/s^2$

C. $3.0m/s^2$ *

D. $53m/s^2$

3.   An object with a mass of 0.5 kilogram starts from rest and achieves a maximum speed of20 meters per second in 0.01 seconds. What average unbalanced force accelerates *this*object?

A. 1,000 N   *

B. 10 N

C. 0.1 N

D. 0.001 N

4.   If the speed of an object is doubled, its kinetic energy will be

A. halved
B. doubled

C. quartered

D. quadrupled   *

5. A motor has an output of 1000 watts. When the motor is working at full capacity, how much time will it require to lift a 50-Newton weight 100 meters?

   A. 5s   *

   B. 10s

   C. 50s

   D. 100s

6. Which phenomenon allows a lens to focus light?
   A.   dispersion

   B.   refraction *

   C.   reflection

   D.   the Doppler effect

7. A net force of 5.0 Newtons moves a 2.0 kilogram/object a distance of 3.0 meters in 3.0 seconds. How much work is done on the object?
   A. 1.0 J

   B. 10. J

   C. 15 J   *

   D. 30 J

8. Which variable expression is paired with a corresponding unit?

   A. mass x distance/ time and watt
   B. mass x distance^2/ time and watt
   C. mass x distance^2/ time^2 and joule   *
   D. mass x distance/ time^3 and joule