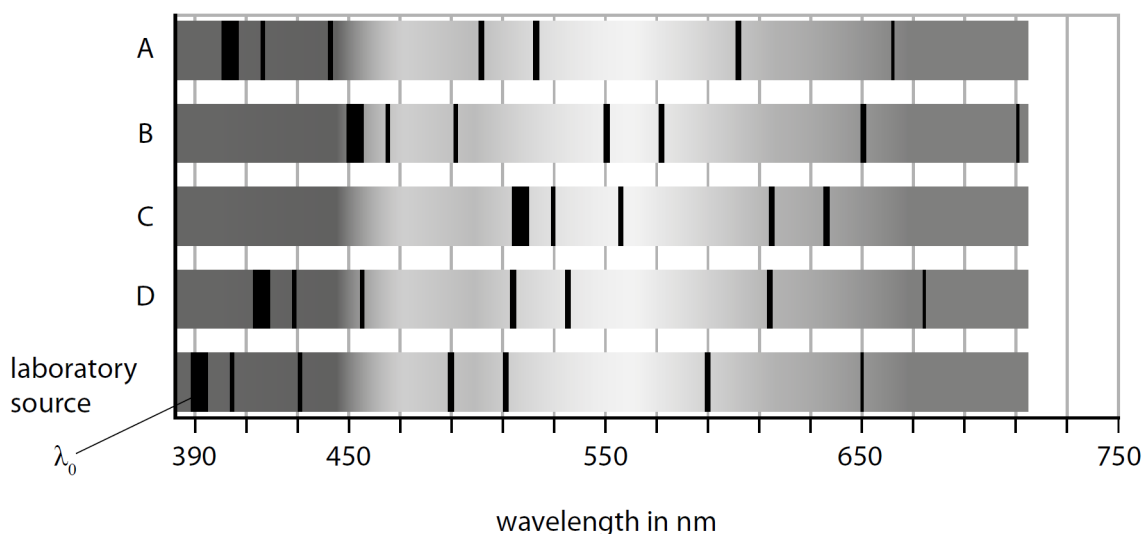


Name:

Class:



The figure below shows some lines in the absorption spectra from four different galaxies (A, B, C, and D) and from a laboratory source. All the spectra are aligned and to scale.



- i. Explain, using the figure, which galaxy is furthest away from us.

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- ii. Calculate the speed, v , of galaxy D. Use the equation:

$$v = c \frac{\Delta\lambda}{\lambda_0}$$

Speed = ...

A car accelerates at a constant rate of 1.83 m/s^2 along a flat straight road.

- i. The force acting on the car is 1.870 kN . Calculate the mass of the car.

Give your answer to **three** significant figures.

mass = ...

- ii. The car accelerates from rest for 16 s . Calculate the speed of the car after 16 s .

Speed = ...