Firrhill High School	N4 N5	Space		**6.** Spectra

Section A

1. When light from a star is observed through a spectroscope a series of coloured lines are view.
   What name is given to this pattern?

2. When light from a light bulb is observed through a spectroscope a rainbow of all visible frequencies is viewed.
   What names is given to this pattern?

Section B

1. What can astronomers find out from looking at the spectra of stars?

2. What word is used to mean ‘gives light out’?

3. What word is used to mean ‘takes light in’?

4. Create a mind map covering everything you have learned in the space topic. (5 marks)

   Your mind map should have six branches:

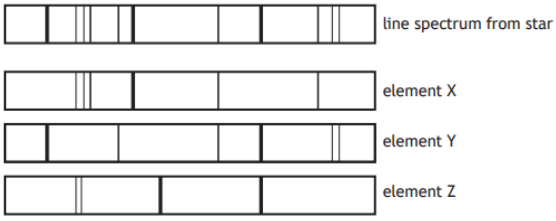
   - Exploring our universe
   - Satellites
   - Re-entry
   - Distances in space
   - Electromagnetic radiation
   - Spectra

Section C

1. What can be found by observing the line spectra from stars?
   A. The distance to the star
   B. The age of the star
   C. The name of the star
   D. The elements in the star
   E. The galaxy the star is present in

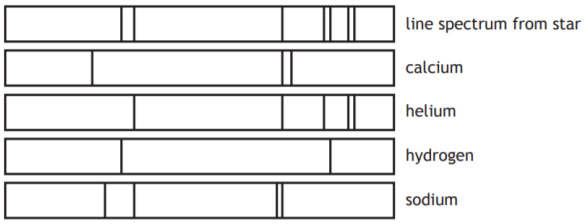
2. Light from a star is split into a line spectrum of different colours.

   The line spectrum from the star is shown, along with the line spectra of the elements X, Y and Z.



   The elements present in this star are
   A. X only
   B. Y only
   C. X and Y only
   D. X and Z only
   E. X, Y and Z

3. Light from a star is split into a line spectrum of different colours. The line spectrum from the star is shown, along with the line spectra of the elements calcium, helium, hydrogen and sodium.

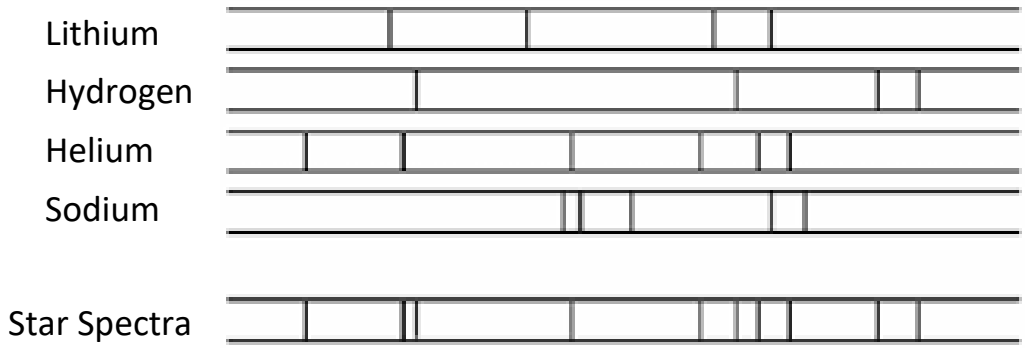


   The elements present in this star are
   A. sodium and calcium
   B. calcium and helium
   C. hydrogen and sodium
   D. helium and hydrogen
   E. calcium, sodium and hydrogen

Section D

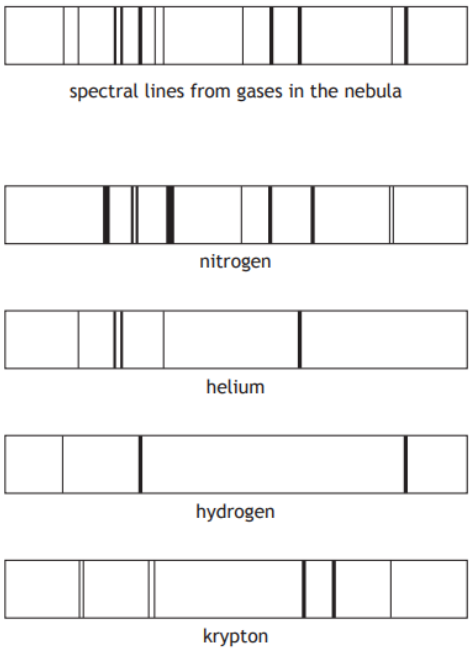
1. The light from a star is split into a line spectrum of different colours.
   a) What is the name of a glass shape that is used to split light into different colours? **1**
   b) Which colour in the visible spectrum has the greatest frequency? **1**

   c) The line spectrum from the star is shown, along with the line spectra of the elements lithium, hydrogen, helium and sodium.

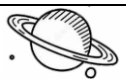


   Use this information to identify the elements present in the star. **2**

2. A spectra from a nebula is shown below.



   a) Identify the elements present in the nebula. **2**
   b) What name is given to this type of spectra? **1**

Firrhill High School	N4 N5	Space		**6.** Spectra