

13+ Science Entrance Examination

Guidance

The Science entrance examination is designed to give students an opportunity to show how confidently they can use the Science scientific skills they have practiced and if they can apply the logic behind the topics they have studied up to the end of Year 7. The main topics examined can be found in the ISEB 11+ and 13+ Science specification.

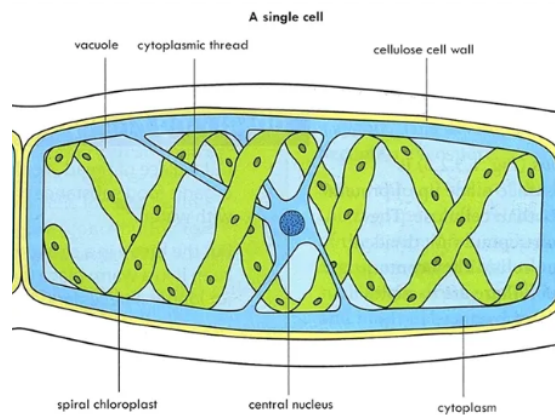
The Science paper is divided into three sections (Biology, Chemistry and Physics). Questions will often require students to apply their knowledge of the scientific principles learnt and involve multiple parts. Student's' ability to use basic maths, such as drawing graphs, may also be tested.

The examination lasts 45 minutes, students should spend no more than 15 minutes on each section and the number of marks that each question is worth will be indicated.



Biology Exemplar - Cell biology

The diagram below shows a cell of an algae called spirogyra.



Which of the structures found in spirogyra are not found in animal cells?

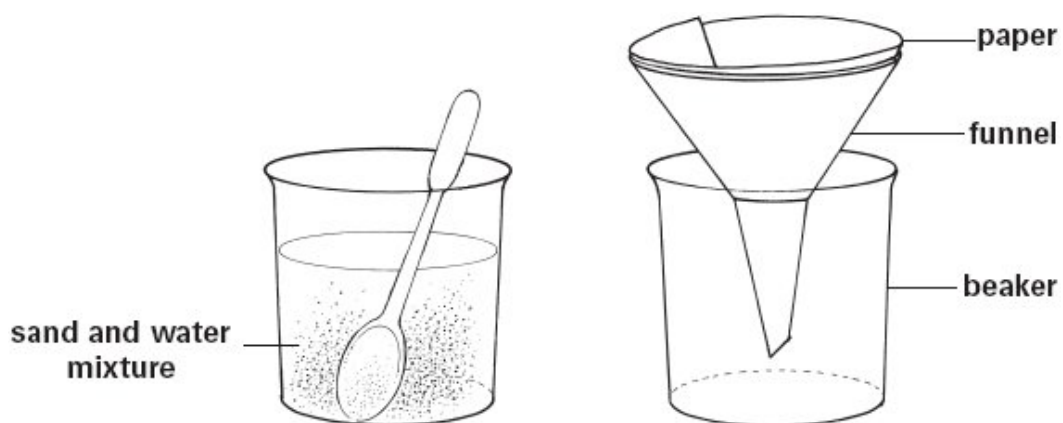
1 mark

Describe how the spirogyra cell differs from a typical plant cell

1 mark

Chemistry Exemplar -Separating materials

- (a) Hannah mixes sand and water together. The mixture can be separated using the equipment below.



What name is given to this method of separating?

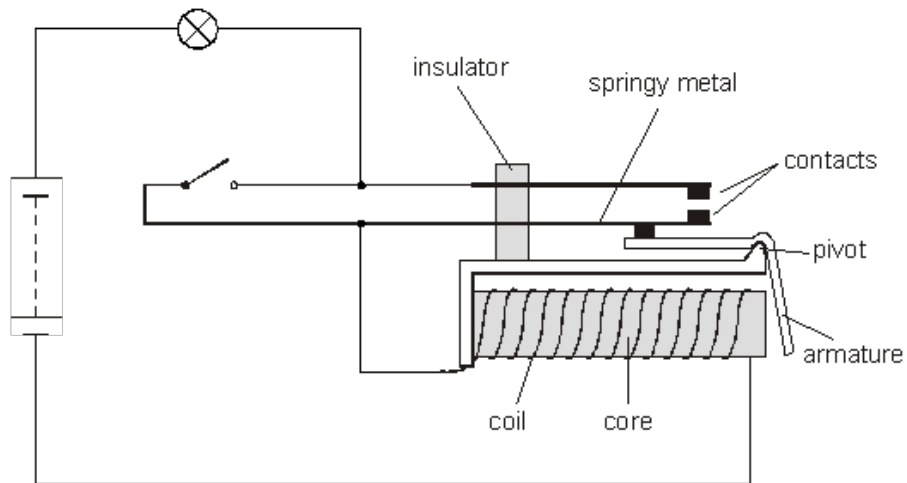
1 mark

(b) Explain why sand can be separated from water using this method.

1 mark

Physics Exemplar - Electromagnets

The diagram shows an electromagnetic relay. The relay is connected in a circuit with a battery, a lamp and a switch.



(a) (i) Explain why the contacts come together when the switch is closed.

3 marks

(ii) When the switch is now opened, the bulb stays on. Explain why.

1 mark