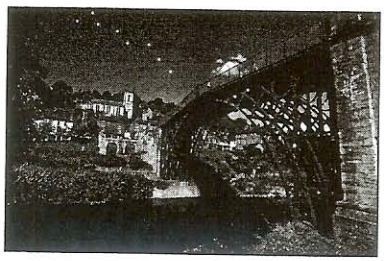
SECTION 3 *Questions 28–40*

Read the text on pages 125 and 126 and answer Questions 28–40.

THE IRON BRIDGE



The Iron Bridge was the first of its kind in Europe and is universally recognised as a symbol of the Industrial Revolution.

A The Iron Bridge crosses the River Severn in Coalbrookdale, in the west of England. It was the first cast-iron bridge to be successfully erected, and the first large cast-iron structure of the industrial age in Europe, although the Chinese were expert iron-casters many centuries earlier.

B Rivers used to be the equivalent of today's motorways, in that they were extensively used for transportation. The River Severn, which starts its life on the Welsh mountains and eventually enters the sea between Cardiff and Bristol, is the longest navigable river in Britain. It was ideal for transportation purposes, and special boats were built to navigate the waters. By the middle of the eighteenth century, the Severn was one of the busiest rivers in Europe. Local goods, including coal, iron products, wool, grain and cider, were sent by river. Among the goods coming upstream were luxuries such as sugar, tea, coffee and wine. In places, the riverbanks were lined with wharves and the river was often crowded with boats loading or unloading.

C In 1638, Basil Brooke patented a steel-making process and built a furnace at Coalbrookdale. This later became the property of Abraham Darby (referred to as Abraham Darby I to distinguish him from his son and grandson of the same name). After serving an apprenticeship in Birmingham, Darby had started a business in Bristol, but he moved to Coalbrookdale in 1710 with an idea that coke derived from coal could provide a more economical alternative to charcoal as a fuel for ironmaking. This led to cheaper, more efficient ironmaking from the abundant supplies of coal, iron and limestone in the area.

D His son, Abraham Darby II, pioneered the manufacture of cast iron, and had the idea of building a bridge over the Severn, as ferrying stores of all kinds across the river, particularly the large quantities of fuel for the furnaces at Coalbrookdale and other surrounding ironworks, involved considerable expense and delay. However, it was his son Abraham Darby III (born in 1750) who, in 1775, organised a meeting to plan the building of a bridge. This was designed by a local architect, Thomas Pritchard, who had the idea of constructing it of iron.

E Sections were cast during the winter of 1778–9 for a 7-metre-wide bridge with a span of 31 metres, 12 metres above the river. Construction took three months during the summer of 1779, and remarkably, nobody was injured during the construction process – a feat almost unheard of even in modern major civil engineering projects. Work on the