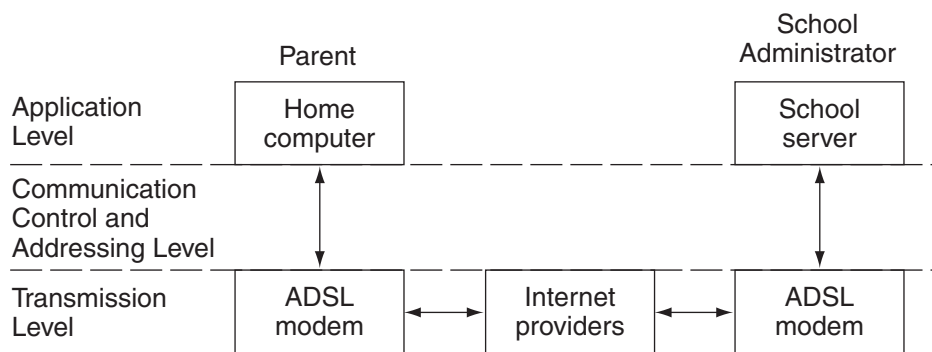**Question 22** (10 marks) Use the Question 22 writing booklet.

(a)   Describe a difference between a thin client and a fat client.   **2**

(b)   A local high school has introduced an internet-based online payment system for school fees.

Parents can make online payments to pay the fees and receive an electronic receipt which includes the date of payment, fees paid and the student's name and ID.

The school administrator is able to produce reports from the system to list those students whose parents have paid fees, and when those payments were made. Lists can also be produced to show those students whose parents have not paid fees to date.

The following diagram describes the communication system.

(i)   Prepare a data dictionary for the school payment system including: **2**

   • field name

   • data type

   • appropriate size for the data.

(ii)   Explain how the message sent by the home computer is organised into packets of data, transmitted and reassembled at the school server.   **3**

(iii)   Explain a suitable error detection technique to ensure that messages are sent and received accurately.   **3**