

Cambridge  
International  
AS & A Level

**Cambridge Assessment International Education**  
Cambridge International Advanced Subsidiary and Advanced Level

CANDIDATE  
NAME

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CENTRE  
NUMBER

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**INFORMATION TECHNOLOGY**

**9626/31**

Paper 3 Advanced Theory

**October/November 2019**

**1 hour 45 minutes**

Candidates answer on the Question Paper.

No Additional Materials are required.

**READ THESE INSTRUCTIONS FIRST**

Write your centre number, candidate number and name in the spaces at the top of this page.

Write in dark blue or black pen.

You may use an HB pencil for any diagrams, graphs or rough working.

Do not use staples, paper clips, glue or correction fluid.

DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

**Calculators must not be used on this paper.**

At the end of the examination, fasten all your work securely together.

The number of marks is given in brackets [ ] at the end of each question or part question.

Any businesses described in this paper are entirely fictitious.

This document consists of **15** printed pages and **5** blank pages.



2 (a) Describe **three** different networking protocols that would be used for data transfer on a LAN.

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A company has devices that use WiFi to connect to its LAN.

(b) Describe how data is transmitted between a device and a wireless access point.

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- 5 A software company has employed a team of programmers to create a new computer game. The project must be completed within four weeks. The team will work five days each week. The programming team have divided the project into eight activities. Some activities can be carried out at the same time while others have to wait until the preceding activity or activities are completed.

The activities are shown in the table.

Activity code	Preceding activity which must be completed	Time that activity will take (days)
A	None	4
B	None	6
C	A	5
D	B	5
E	D	3
F	C	3
G	D, F	3
H	F	7

(a) Complete the chart below to create a Gantt chart from the table.

	Week 1					Week 2					Week 3					Week 4				
	Day					Day					Day					Day				
Activity code	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
A																				
B																				
C																				
D																				
E																				
F																				
G																				
H																				

Use the following chart for any working out you need. **Please note, any work in this grid will NOT be marked.**

	Week 1					Week 2					Week 3					Week 4				
	Day					Day					Day					Day				
Activity code	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
A																				
B																				
C																				
D																				
E																				
F																				
G																				
H																				

[10]

(b) Identify the activities which form the critical path and give the length of this path.

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7 (a) Describe the **benefits** of using back-ups to prevent loss of data from computer systems.

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(b) Describe the **drawbacks** of using back-ups to prevent loss of data from computer systems.

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- 8 A school uses a proxy server to distribute web pages to work stations.

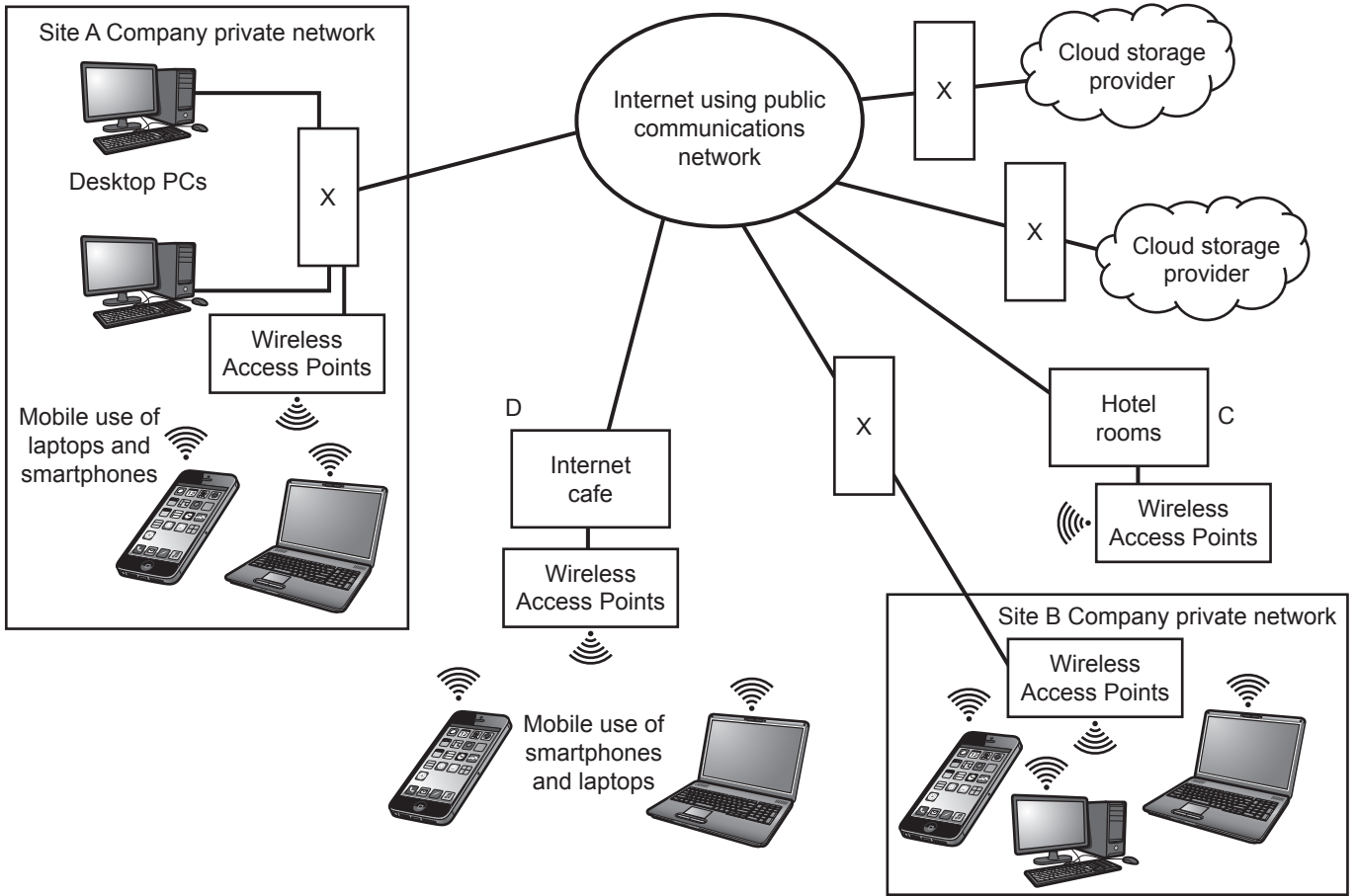
Describe the role of this proxy server.

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- 9 A company has two sites, A and B. Its staff work in either of the two sites and can access their files offsite because the company uses cloud computing technology for storing files. The connections at the locations marked X provide security for the company's data.



(a) Explain the role of the hardware and software that would be at locations marked as X.

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**(b)** Explain why staff are discouraged from accessing their files from locations C and D.

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10 A new photograph of a person in her office is required but the person is not available for the photo shoot.



**Fig. 10.1**



**Fig. 10.2**

Explain how the image of the person in Fig. 10.1 was extracted and placed in Fig. 10.2.

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- 11 The area of a rectangle can be calculated using the JavaScript embedded in a web page as shown below.

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1 <html>
2 <body>
3 <script>
4 var length = parseFloat(prompt("Enter length of the rectangle : "));
5 var width = parseFloat(prompt("Enter width of the rectangle : "));
6
7 var calc_area = (length * width);
8
9     document.write("<br>");
10    document.write("<h3> Area of a rectangle</h3>");
11    document.write("<font face='arial' size='3'>")
12    document.write(" The sides of the rectangle are " + length + " by " +
13    width + ".</font><br>");
14    document.write("<font face='arial' size='3'>")
15    document.write(" The area of the rectangle is " + calc_area +
16    ".</font><br>");
17
18 </script>
19 </body>
20 </html>
```



Explain, with reference to the code shown, how the JavaScript collects the dimensions of the rectangle, calculates the area and displays the area on-screen.

The lines of the code are numbered only for your convenience when referring to the code.

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