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Cambridge International AS & A Level

Cambridge Assessment International Education
Cambridge International Advanced Subsidiary and Advanced Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER					

9433619903

INFORMATION TECHNOLOGY **9626/32**

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 are not allowed to 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 **17** printed pages and **3** blank pages.

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1 Vector images use ‘nodes’.

(a) Describe what is meant by a ‘node’ in a vector image.

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(b) Describe how node editing can be used to change a vector image.

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2 A director of a building company is overseeing a large number of projects that are managed using project management software.

- The director oversees several project managers
- The director reports to the managing director
- The director's report will include several graphs and tables
- The director and managers work from their offices
- Each manager oversees a team of project supervisors
- Project supervisors will supervise one or more projects and may share projects
- Supervisors can work from home as well as when they are visiting the building sites.

Describe, with reasons, the most appropriate type of project management software that each of the mentioned personnel could use to manage the projects.

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3 JavaScript uses strings to store data.

This script is intended to display the contents of three variables on a web page.

Line numbers are provided only for your convenience when referring to the code.

```
1   <html>
2   <body>
3
4   <p id="names"> </p>
5   <script>
6   var statementtxt1 = "It's only me, 'Hardeep'";
7   var statementtxt2 = "His name is "Peter"";
8   var statementtxt3 = "We call her Jasmine";
9   document.getElementById( 'names' ).innerHTML = statementtxt1 + "<br>"
    + statementtxt2 + "<br>" +  statementtxt3;
10  </script>
11  </body>
12  </html>
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Explain, giving reasons, why no output is produced when this JavaScript is executed by a web browser as part of a web page.

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4 A web page uses JavaScript code to display a list of food crops.

Line numbers are provided only for your convenience when referring to the code.

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1   <html>
2   <body>
3   <p id="foodcrops"></p>
4   <script>
5   var crops = ["corn", "rice", "maize", "sugarcane"];
6   var i = 0;
7   var show = "";
8   while (crops[i]) {
9       show += crops[i] + "<br>";
10      i++;
11  }
12  document.getElementById("foodcrops").innerHTML = show;
13  </script>
14  </body>
15  </html>
```

(a) Explain, in detail, how the JavaScript code produces this list from an array.

corn
rice
maize
sugarcane

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(b) Explain how you would amend the existing JavaScript code to add 'beans' to the array so that it would produce this list.

beans
corn
rice
maize
sugarcane

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5 Discuss the impact on students of their use of smartphones.

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6 Describe the benefits of using lasers to transmit data between devices.

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7 Robotic delivery systems are being used by organisations to deliver goods direct to customers.

Evaluate the use of robotics in the delivery of goods.

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8 A bank stores details of customer accounts on its computer system. Customers and staff can access the accounts by logging in to the bank's website.

(a) Describe the security methods that could be used to ensure that the person logging in is authorised to do so.

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(b) The bank insists that its staff use a VPN when accessing the accounts from outside the bank's intranet.

Describe the network protocols that could be used by this VPN.

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9 Compare and contrast the use of a Massive Open Online Course (MOOC) with the use of online tutorials.

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10 Describe the effect of bit rate on the quality of streamed video.

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11 Fig. 11.1 shows a photograph of a scene. Fig. 11.2 shows the same scene after the photograph has been edited with image editing software.

Fig. 11.1

Fig. 11.2

Describe how image editing tools could have been used to change the photograph in Fig. 11.1 into that in Fig. 11.2.

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12 A new app has been created for smartphones, but is unreliable due to some unknown coding errors.

A group of testers has been asked to locate the errors and suggest, in a report, corrections that should be made to the code before the app is ready for sale. The testers have been given a list of milestones to record their progress. These are shown:

Milestones to be reached:
1 Check that the plan will solve the unreliability issue.
2 Create a plan to correct the code.
3 Create a theory as to which lines/areas/blocks/sections of code are causing the unreliability.
4 Document the results of the testing in a report.
5 Download and install app on the smartphone.
6 Identify the problem with the code by running the app.
7 Suggest corrections that could correct the unreliability.
8 Test the suggested corrections.
9 Test the theory to see if the unreliability can be replicated elsewhere.

List, by writing the number of the milestone, the order in which these milestones should be reached by the testers.

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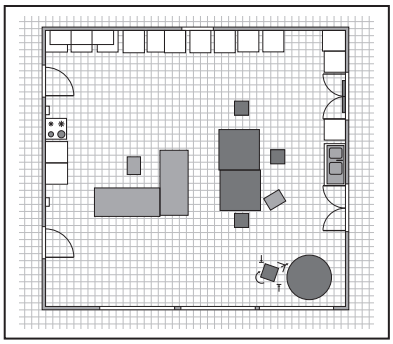
13 Computer Aided Design software has been used to create a design for a new kitchen as shown:



Plan

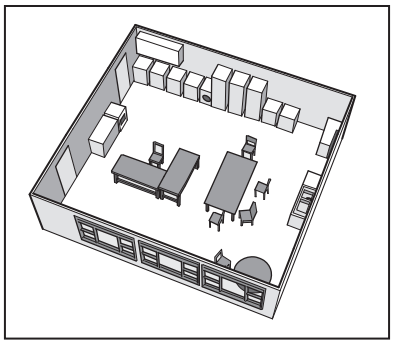


Image 1

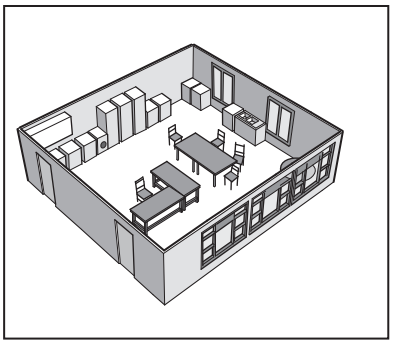


Image 2

Describe how the software tools would have been used to create the plan and the images from it.

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14 Evaluate the impact of holographic imaging on medicine.

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