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# 2910110 Introduction to computing and the internet

## Examiner's report: Zone A

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### Part A

#### Question 1

- a. A good answer to this part of the question would consist of three paragraphs. The first offers a concise description of the functionalities of the ALU. Two other components of the CPU would then be named and described in the second and third paragraphs in the similar style to the first. Examples of suitable CPU components are control unit, registers or local bus.
- b. This part of the question requires a conversion from the given binary number in four different notations to the corresponding decimals. If you know the notations, you only need to compute the equivalent values in decimal system. Most candidates did well on this part of the question, but lost marks due to the missing steps.
- c. A state transition diagram is all required for the first half of the answer. The second half would consist a list of two situations where a process might leave the waiting state. Few candidates answered this question correctly.
- d. An easy way to answer this part of the question is to give your answers in three sections separately under each of the three sub-question numbers. The first two sections, (i) and (ii), require an explanation while the third section requires an account of the conditions. Some candidates this year confused this question with one that requires a discussion of the advantages of DMA.

#### Question 2

- a. This part of the question is straightforward, so should be the final result. The answer, however, requires every intermediate working step. Many candidates lost marks because of missing steps.
- b. A good answer to this part of the question would give two simple calculations for both two cases (i.e. with and without multiplexed addresses).
- c. There are five sub-questions in this part of the question and a good answer would be divided naturally into five sections accordingly.  
Sub-questions (i)–(iii) asked to draw a Gantt chart and to compute the average waiting time using three different algorithms, namely FCFS, SJF and RR.

Few candidates attempted this part of the question ((i)-(v)) and those who attempted did poorly. This may reflect the particularly higher test of candidates' ability to understand questions in this part. Of course, a candidate needs to know the three different algorithms and what a Gantt chart is in order to attempt the question. Note that not only the execution time but also the waiting time need to be taken into consideration. Part (iv) asked candidates to list four items that are maintained in a process control block. An easy way to present your answer is to just provide a list of four such items. Part (v) asked candidates to list resources used when a thread is created and state the differences between the resources used for a thread creation and those for a process creation.

### Question 3

- a. There are two further questions in this part and you should answer them separately. A straightforward approach is to represent your answer in two paragraphs in order of the question given. For example, you may discuss the aims of the RISC philosophy in the first paragraph, and compare these to those for the CISC in the second.
- b. Similarly, you should present the two affected factors in two separate paragraphs.
- c. This part is a similar question to 2(a) except in asking to convert a hexadecimal value to a decimal. An easy way to do this is first to convert the hexadecimal to a binary. You should show all the working steps.
- d. A good answer to this part of the question would consist of four sections to answer the four sub-questions respectively. Note each of sections (i), (iii) and (iv) consists of two parts further, and you should organise your answer accordingly, for example, in two paragraphs for each of the sections.

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## Part B

### Question 4

- a.
  - i. The answer to this part is straightforward.
  - ii. A good way to answer this part of the question is to first present three examples of sensitive personal data, and then to briefly explain in a separate paragraph the restrictions applied to the sensitive data.
  - iii. A good answer to this part of the question would consist of description of three examples of exceptional situations.
- b.
  - i. This part of the question asked candidates to describe two ways in which a virus can gain access to a computer system, and two ways in which the virus could install itself on the system. You should organise your answer in two sections accordingly.
  - ii. There are two sub-questions again in this part and you should answer them separately.
- c. There are again two sub-questions in this part and you should give your answer in two sections. A good answer would include a brief description of four different procedural or technical measures for data

protection in the first section and an efficient justification of the measures and their likely impact. There may be a number of correct answers to this type of questions, but a good answer would always be clearly presented and easy to read. You should organise your thoughts before starting to write the answer.

### Question 5

- a.
  - i. The examiner would expect an explanation of the differences between the physical and logical addresses in this part of the question. Although differences may be viewed from various angles, it is acceptable here if you can reflect what is covered in the textbook or in the subject guide (volume 2) section 2.2.2.
  - ii. A good answer to this part would focus on the general but fundamental reasons.
  - iii. This is a technical question and you should try to demonstrate your knowledge by providing certain level of technical details in your answer. An example, though not required, may be given as an easy way to demonstrate your understanding.
- b.
  - i. An easy way to answer this question is to describe the four layers of the TCP/IP model of network protocol architecture in four respective paragraphs. Note the word 'briefly' in the question and you should keep your answer concise.
  - ii. This part of the question asks candidates to define each of the four terms in one sentence. Some candidate this year lost marks for missing parts, wrong concepts, or answers longer than one sentence.
  - iii. A good answer to this part would consist of three paragraphs of explanations, one for each required term, in the order given in the question.
- c.
  - i. A good answer would consist two short paragraphs for explanation of the two types of the protocols.
  - ii. You should organise your answer in two paragraphs. The first one describes briefly the processes involved in TCP's three-way handshake and the second one explains the purposes of the three-way handshake scheme.
  - iii. A good answer would again be presented in two paragraphs. The first one is for the explanation of the flow control and the second one for the description of how it is implemented.

### Question 6

- a. The part of the question tests your practical knowledge of how an html file would be rendered by a CSS-complaint browser. A good answer would consist of drawing a diagram as required demonstrating your understanding in the best possible way. The quality of the drawing itself is not important, but it is essential that it reflects closely the contents on the real web page using a CSS-compliant browser. An efficient way to achieve this is to add notes on your drawing to indicate, for example, the font, colour, the layout and the indentation.

- b. A good way to answer this part of the question is to begin with some phrases such as, 'Some motivations for using style sheets to separate presentation from content of web documents are as follows: ...'. This would then be followed by a list of motivations, preferably in order of the significance.
- c. There are two questions in this part and you should answer them separately in at least two paragraphs.