1. **Reading (4 points)**

Mainframe vs Supercomputer

The distinction between supercomputers and mainframes is not a hard and fast one, but supercomputers generally focus on problems which are limited by calculation speed while mainframes focus on problems which are limited by input/output and reliability ("throughput computing") and on solving multiple business problems concurrently (mixed workload). The differences and similarities include:

Both types of systems offer parallel processing. Supercomputers typically expose it to the programmer in complex manners, while mainframes typically use it to run multiple tasks. One result of this difference is that adding processors to a mainframe often speeds up the entire workload transparently.

Supercomputers are optimized for complicated computations that take place largely in memory, while mainframes are optimized for comparatively simple computations involving huge amounts of external data. For example, weather forecasting is suited to supercomputers, and insurance business or payroll processing applications are more suited to mainframes.

Supercomputers are often purpose-built for one or a very few specific institutional tasks (e.g. simulation and modeling). Mainframes typically handle a wider variety of tasks (e.g. data processing, warehousing). Consequently, most supercomputers can be one-off designs, whereas mainframes typically form part of a manufacturer's standard model lineup.

Mainframes tend to have numerous ancillary service processors assisting their main central processors (for cryptographic support, I/O handling, monitoring, memory handling, etc.) so that the actual "processor count" is much higher than would otherwise be obvious. Supercomputer design tends not to include as many service processors since they don't appreciably add to raw number-crunching power.

There has been some blurring of the term "mainframe," with some PC and server vendors referring to their systems as "mainframes" or "mainframe-like." This is not widely accepted and the market generally recognizes that mainframes are genuinely and demonstrably different

(https://sites.google.com/site/mainframeplatform/)

1.1 Find the answers to these questions in the text.

a) What is the distinction between supercomputers and mainframes?

b) Why are supercomputers optimized?

c) Why are mainframes optimized?

d) Why can most supercomputers be one-off designs?

e) What are the purpose of service processors?

1.2 Match the terms in Section A with the statements in Section B.

**Section A**

1. throughput computing
2. parallel processing
3. simulation
4. modeling
5. warehousing

**Section B**

1. The imitation of the operation of a real-world process or system over time.
2. A computing paradigm that focuses on the efficient execution of a large number of loosely-coupled tasks
3. A system used for reporting and data analysis.
4. The processing of program instructions by dividing them among multiple processors with the objective of running a program in less time.
5. a representation of entities and relationships between them.

1.3 Mark the following statements as True or False:

a) Adding processors to a mainframe can speed up an individual task.  
b) Mainframe does not support parallel processing.

c) Supercomputers focus on raw number-crunching power.

d) Mainframe cannot run simulation.

1. **Writing (3 points)**

1. Put the tenses in this dialogue in the correct form.

A What (1- do) today?

B I (2 - work) on my project. I (3 - search) the Web for sites on digital cameras.

A (4- find) any good ones?

B I (5- find) several company sites - Sony, Canon, ... but I (6- want) one which (compare) all the models.

A Which search engine (7- use)?

B Dogpile mostly. (8- ever use) it?

A Yes, I (9- try) it but I (10- have) more luck with Ask Jeeves. Why don't you try it?

B I (11- have) enough for one night. I (12 - spend) hours on that project.

A I (13 - not start) on mine yet.

B Yeh? I bet you (14 - do) it all.

2. Complete the sentences below using the correct form of the verbs "let," "make," "have," and "get,"

a. Marcus me drive his new BMW. I couldn't believe how quickly it picked up speed.

b. How did you the doctor to make a house call? I haven't heard of a doctor actually going to a patient's house in years.

c. My boss me get him coffee, pick up his dry cleaning and buy presents for his wife. He can't do anything by himself!

d. Tommy didn't want to go to his cousin's birthday party, but his mom him go.

e. I can't believe the zoo keeper you feed the snake. That was so cool!

f. The contract was very detailed, and it was essential that the wording be absolutely correct. Therefore, I the translator recheck his work several times to make sure there would be no misunderstandings.

g. Cheryl didn't want to wash her car, so with a little smooth talk she her boyfriend to wash it for her.

h. If you ask me nicely, I'll you lick the bowl after I make the cookies.

i. Dr. Jackson the nurse monitor the patient's condition overnight.

j. The news coverage of the recent tornado was incredibly moving. The interview with the little boy who lost his family in the tragedy everyone cry.

1. **Speaking (Write down – 3 points)**

Translate into English

World Wide Web bắt đầu với sự hợp nhất của Sir Tim Berners-Lee với Internet của Bộ Quốc phòng Hoa Kỳ, liên kết các trung tâm nghiên cứu và siêu văn bản, cho phép điều hướng nhanh giữa các tài liệu. Các công cụ phổ biến hiện nay của Internet do Berners-Lee nghĩ ra bao gồm HTML (Ngôn ngữ đánh dấu siêu văn bản, ngôn ngữ của mã định dạng Internet), các giao thức truyền thông (được gọi là giao thức Truyền tải siêu văn bản hoặc HTTP) và các địa chỉ Web có thể truy cập riêng lẻ (được gọi là Bộ định vị tài nguyên thống nhất hoặc URL ). Quan trọng nhất, Berners-Lee đã biến “Web thành một mạng phi tập trung” mà bất kỳ ai có kết nối đều có thể truy cập và đóng góp. Phần mềm, từng là thứ lấp lánh huyền bí trong mắt kỹ sư phần cứng, đã được dân chủ hóa và các ứng dụng của nó trong thế giới kỹ thuật số hiện đại dường như là vô tận.