GCSE Computing

Revision Pack

THREE

Computer systems, components and architecture

Name:

/27 PASS Mark = 25+

Attempt One   %
Attempt Two   %
Attempt Three   %

Areas of Strength   Areas for Development

Jo buys a notebook computer that has a 3MHz quad-core central processing unit (CPU).

1. State the purpose of the CPU. (1 mark)

2. Describe what is meant by 3MHz CPU (2 marks)

3. Describe what is meant by quad core CPU (2 marks)

4. A desk-top computer's memory includes ROM and RAM. Which **one** in each row is true for ROM or RAM. (3 marks)
   - Programs and data which are currently in use are loaded here.
   - All the contents are lost when the power is turned off.
   - It is used to boot up the computer when it is switched on.

5. The table below contains statements about the functions of the CPU. Tick one box in each row to show whether the statement is true or false. (4 marks)

	TRUE	FALSE
It performs arithmetic operations on data.		
If fetches and executes instructions		
Input and output devices are plugged into it		
It moves data to and from memory locations.		

6. Describe what is meant by cache memory. (2 marks)

7. Explain why cache memory is needed. (2 marks)

Mina's computer has 4GB of RAM.
8. Describe the purpose of RAM in the computer. (2 marks)

9. Explain what is meant by virtual memory. (2 marks)

10. State why virtual memory is needed. (1 mark)

11. Mina upgrades the computer to 6GB of RAM.Explain how this upgrade will affect the performance of the computer. (2 marks)

12. Mary's computer has an 800MHz CPU and 1GB of RAM. Describe the purpose of the CPU. (2)

13. Mary wants to upgrade this computer so that she can play the latest games.
Explain two ways by which the computer can be upgraded to improve its performance. (4 marks)

14. A computer shop tells Mary that she would be better off buying a new computer, than upgrading the computer that she already has. However, Mary wants to consider the environmental impact as well as the cost.
Discuss the advantages and disadvantages of buying a new computer instead of upgrading and advise Mary on what she should do. You should focus on the environmental impact and the cost. (6)

15. The CPU is the component which does most of the data processing in a computer.
State two tasks which are carried out by the CPU when processing data. (2)

16. .Explain how the clock speed and the cache size of a CPU affect its performance. (4)

17. The accident and emergency department of a hospital uses a computer system to decide the order in which patients are treated. Describe advantages of using a computer system instead of a person to decide the order, and the need for this system to be reliable. (6)

18. A computer has 1024 megabytes of RAM. How many gigabytes of RAM does the computer have? (1)

19. .State two items that will be stored in the RAM. (2)

20. .The computer sometimes uses virtual memory.Describe what is meant by virtual memory and state why it is needed. (3)

21. Dipesh is thinking of buying a tablet computer to replace his old desktop computer. Describe how the CPU and RAM work together to enable the tablet computer to operate. (3)

22. The tablet computer also uses cache memory. Describe the purpose of cache memory. (2)

23. Describe how the advances in memory technology have allowed significant improvement in the performance of devices such as tablet computers. (6)

24. 0001000 00010100 can represent either the instruction for "Add 20 to the timer" or the data for the time "8:20".Explain how the CPU can determine whether it represents an instruction or data. (1)