Module 3 - Advanced Computer Hardware

1 Read the Introduction....

2 What does UEFI stand for?

3 What setting in the UEFI is good for gaming?

4 What does the POST do?

5 How might you know something is malfunctioning?

6 How would you test whether the POST is working?

7 What else does the POST and BIOS identify?

8 Where is the BIOS software stored?

9 How does it retain the data?

10 All new computers come with UEFI, which provides additional features and addresses security issues with legacy BIOS.

11 Watch the video

12 What are the two different passwords you can set in the BIOS

13 What are the different access levels?

14 Briefly explain LoJack

15 What does TPM stand for? What does it do?

16 What is Secure Boot?

17 What is Firmware?

18 What does EEPROM stand for?

19 An improperly installed or aborted \_\_\_\_\_\_\_\_\_\_\_\_ update can cause the computer to become unusable.

3.2.1.2

20 How would you determine the voltage setting on your computer?

21 What are various power fluctuations that can cause data loss or hardware failure?

22 What devices protect against the above?

23 What should you never plug into a UPS? Why?

3.2.2.3

24 Power Fluctuation Terms. Write the correct answer underneath each one.

|  |  |
| --- | --- |
|  | Interference from generators and lightning |
|  | Sudden increase in voltage exceeding 100% of the normal voltage on a line |
|  | Dramatic increase in voltage above the normal flow of electrical current |
|  | Supplies a consistent level of electrical power to a computer or other device |
|  | Provides a backup battery to supply power when the incoming voltage drops below the normal |

3.3.1

25 What are the two types of CPUs?

26 While the CPU is executing one step of the program, the remaining instructions and the data are stored nearby in a special, high-speed memory, called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

27 What is Hyper-Threading?

28 Which CPU manufacturer introduced HyperTransport?

29 The amount of data that a CPU can process at one time depends on the size of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

30 What is overclocking?

31 What is the opposite of overclocking?

32 Wha devices commonly use the above?

33 What is CPU virtualization?

33.1.3

34 A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ processor is recommended for applications such as video editing, gaming, and photo manipulation.

35 Multicore processors \_\_\_\_\_\_\_\_\_\_\_\_\_ power and produce less heat than multiple single-core processors, thus increasing performance and efficiency.

36 The GPU is a chip that performs the rapid mathematical calculations required to render \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

37 The benefit of integrated \_\_\_\_\_\_\_\_\_\_\_\_ is cost and less heat dissipation

38 \_\_\_\_\_\_\_\_\_\_\_\_\_\_ adapter cards have their own processor called a graphics-processing unit (GPU) which generates excessive heat.

39

|  |  |
| --- | --- |
|  | This comprises of multiple pieces of code are executed simultaneously in the CPU. |
|  | This is a high-speed connection between the CPU and the Northbridge chip. |
|  | This is a technique used to make a processor work at a faster speed than its original specification. |
|  | This is a technique used when the processor runs at less than the rated speed to conserve power or produce less heat. |
|  | This is a hardware feature supported by AND and Intel CPUs that enables a single processor to act as multiple processors. |
|  | This is used by a very fast CPU that produces more heat than can be dispelled. |

3.3.2.2

40 RAID provides a way to store data across multiple storage devices for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, reliability, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , and redundancy and/or performance improvement.

41 Describe Striping

42 Describe Mirroring

43 Describe Parity

44 What are the RAID levels?

3.3.2.4

45

|  |  |
| --- | --- |
|  | Striping |
|  | Mirroring |
|  | Parity |
|  | Double Parity |

46 What are the 4 graphic ports listed?

47 What is the newest USB cable type?

48 What is the difference between SATA and eSATA?

3.3.4.1

49 How are monitor usually described?

50 What is a Pixel?

51 What is contrast ratio?

52 What is aspect ratio?

53 How is Refresh rate measured?

54 What is FPS?

55 Read the different display standards

3.3.4.4

56 Adding monitors can increase your visual desktop area and improve \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

57 Make sure you read each one when you fill it in.

|  |  |
| --- | --- |
|  | 4:3 is older while 16:9 is newer |
|  | An example is 1920 horizontal pixels by 1080 vertical pixels |
|  | More of these dots means the monitor can display more detail |
|  | 4,500:1 displays brighter whites and darker blacks than 1.000:1 |
|  | In Windows 10, this is identified using the keyword (Recommended) |
|  | This is the distance between pixels on the screen |
|  | Measured diagonally from top to bottom in inches |

3.4.1.1

58 What are some of the reasons computers need periodic upgrades?

59 If you upgrade or replace a motherboard, consider that you might have to replace other components including the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, heat sink and fan assembly, and \_\_\_\_\_\_\_\_\_\_\_

3.4.1.2

60 Read the steps to upgrade

3.4.1.3

61 What are the requirements when upgrading a CPU?

3.4.1.4

62 What are some reasons to install a new drive?

3.5.1.1

63 What are some of the components of a computer that can be considered hazardous waste?

64 What are the other technologies listed?

3.5.1.2

65 What is the SDS? How is it used?

66 Read the Summary and answer the questions.