

Please Note – To successfully complete this test you must review eLM.SMC4000.01 through eLM.SMC4000.05. (eLM.SMC4000.10 is a single file that contains .01 through .05)

Taking the Certification Test

Each question has **only one correct answer**. Please record all answers on this answer sheet. The order of the questions in the test roughly follows the order of topics covered in class. All questions are equally weighted. A passing score is 85% (3 wrong).

Returning the Certification Test

Option 1: Fax this page to **Yaskawa Technical Training Services** at (847) 887-7185.

Option 2: E-mail the answers to all questions to training@yaskawa.com. Be sure to include all of the contact information listed below.

Option 3: Mail this page to **Yaskawa Technical Training Services** at the address shown on the bottom of this page.

Receiving Your Score

When the test is taken during the training class, you will receive your score in class as soon as it can be graded. When taken as a CLEP test, receive your score from Technical Training Services by sending an email to training@yaskawa.com or by calling Karen Kolacki at 847-887-7228. In either case, you may review your answers only if a passing score is received.

Answer Sheet:

1. _____	6. _____	11. _____	16. _____	21. _____
2. _____	7. _____	12. _____	17. _____	22. _____
3. _____	8. _____	13. _____	18. _____	23. _____
4. _____	9. _____	14. _____	19. _____	24. _____
5. _____	10. _____	15. _____	20. _____	25. _____

Contact Information:

Name: _____ Title: _____

Company: _____ Email: _____

Address: _____

Phone Number: _____ Fax number: _____

Supervisor's Name/ Title: _____

Test Date: _____

Application Examples

1. The SMC-4000 can control multiple axes and communicate with other devices through onboard digital I/O.
 - a. True
 - b. False
2. A PC can send motion commands or set and read variables to SMC-4000 controllers over ethernet.
 - a. True
 - b. False
3. One SMC-4000 can send motion commands or set and read variables to other SMC-4000 controllers over ethernet.
 - a. True
 - b. False
4. The SMC-4000 is designed to control servos only, not steppers or VFDs.
 - a. True
 - b. False
5. Apart from the 2-axis and 4-axis version, what other option is available when purchasing the SMC-4000?
 - a. VFD control option for Yaskawa inverters.
 - b. Stepper control option for third party stepper drives.
 - c. 8-axis option for extended control.
 - d. Absolute encoder option for Yaskawa absolute encoders.
 - e. Battery powered option for uninterrupted usage.

Motion Control Features

6. The SMC-4000 is capable of jogging, point-to-point positioning, and electronic gearing.
 - a. True
 - b. False
7. The SMC-4000 allows multiple axes to CAM off of a single axis.
 - a. True
 - b. False
8. What is true about vector mode?
 - a. Vector mode allows up to 4 axes to be controlled within 1 vector plane.
 - b. Vector mode allows 2 axes to be controlled in an x-y coordinate positioning system.
 - c. Vector mode allows the definition of up to 4 vector planes.
9. The virtual axis can be used as a master axis
 - a. True
 - b. False

10. Which of the following programming features is supported by the SMC-4000?
- a. Structured text programming language
 - b. 16 program threads
 - c. Ladder programming language
 - d. Icon-based programming language

Hardware Specifications

11. The SMC-4000 absolute encoder option supports all YASKAWA absolute encoders.
- a. True
 - b. False
12. How is the SMC-4000 firmware upgraded?
- a. By sending the unit back to the factory.
 - b. By replacing the CPU.
 - c. By using YTerm through the serial port.
 - d. Automatically via ethernet.
13. What is NOT TRUE about the SMC-4000 power supply input
- a. Has internal fuse to protect against overloads
 - b. Operates on 24V DC
 - c. Has internal filter
 - d. Operates on 120V AC
14. The SMC-4000 has a home sensor input and limit switch inputs for each axis.
- a. True
 - b. False
15. The SMCCBLH axis cable allows the alarm status to be read and an alarm to be reset on BOTH the SGDH (SigmaII) AND SGDG (Legend) amplifiers.
- a. True
 - b. False

SMC Comparison

16. Which controllers are stand alone?
- a. SMC-2000 & SMC-3010
 - b. SMC-4000 & SMC-2000
 - c. SMC-3010 & SMC-4000
 - d. All SMC controllers
 - e. Only the SMC-4000

17. Which controllers have Ethernet capability?
- a. SMC-2000 & SMC-3010
 - b. SMC-2000 & SMC-4000
 - c. SMC-3010 & SMC-4000
 - d. All SMC controllers
 - e. Only the SMC-4000
18. Which controllers are programmed with YTerm 7.0 software?
- a. SMC-2000
 - b. SMC-3010
 - c. SMC-4000
 - d. All SMC controllers
 - e. Only the SMC-4000
19. Which controllers have Virtual Axis capability?
- a. SMC-2000 & SMC-4000
 - b. SMC-2000 & SMC-3010
 - c. SMC-3010 & SMC-4000
 - d. All SMC controllers
 - e. Only the SMC-4000
20. When considering the direct replacement of an SMC-2000 with an SMC-4000, the controller must not be using analog inputs.
- a. True
 - b. False

YTerm 7 Highlights

21. YTerm 7 uses skins that can be customized by the user.
- a. True
 - b. False
22. You can highlight a variable in the program code and monitor its value as the program runs.
- a. True
 - b. False
23. Motion can be monitored graphically as the program runs.
- a. True
 - b. False
24. YTerm 7 checks the program syntax every time the program is sent to the controller.
- a. True
 - b. False
25. Online help appears as you type commands in the programming window.
- a. True
 - b. False