

## COMPONENT NUMBER CODES TRAINING CERTIFICATION TEST (DVD-165C) v.1

**This test consists of thirty multiple-choice questions. All questions are from the video: *DVD-165C – Component Number Codes*.**

**To decipher *component number codes*, use the *Component Number Code Charts* for 3- and 4-digit chip resistors; chip resistor decimals and symbols; numbered resistors with tolerance letter codes; E96 series, 0603 resistors; 3-digit capacitors; 2-digit alphanumeric chip capacitors; 3-digit inductors; and capacitor and inductor decimals.**

**Your training administrator will provide you with computer access to view the various PDF number code charts, or provide printouts of each chart.**

**Use the *Answer Sheet* to circle the letter corresponding to your selection for each test item. If more than one answer appears to be correct, pick the answer that appears to be the most complete response. If you wish to change an answer, erase your choice completely.**

**When finished, check to make sure you have answered all of the questions. Turn in the test materials to the instructor.**

**The passing grade for this test is 70% (21 correct answers), or better.**

**Good luck!**



Association Connecting Electronics Industries

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**Answer Sheet** Name: \_\_\_\_\_ Date: \_\_\_\_\_

Circle the letter corresponding to your answer for each test item.

1	A	B	C	D
2	A	B	C	D
3	A	B	C	D
4	A	B	C	D
5	A	B	C	D
6	A	B	C	D
7	A	B	C	D
8	A	B	C	D
9	A	B	C	D
10	A	B	C	D
11	A	B	C	D
12	A	B	C	D
13	A	B	C	D
14	A	B	C	D
15	A	B	C	D
16	A	B	C	D
17	A	B	C	D
18	A	B	C	D
19	A	B	C	D
20	A	B	C	D
21	A	B	C	D
22	A	B	C	D
23	A	B	C	D
24	A	B	C	D
25	A	B	C	D
26	A	B	C	D
27	A	B	C	D
28	A	B	C	D
29	A	B	C	D
30	A	B	C	D

## COMPONENT NUMBER CODES TRAINING CERTIFICATION TEST (DVD-165C) v.1

1. **The value of a resistor is measured in**
  - a. henries
  - b. ohms
  - c. farads
  - d. volts
  
2. **Tolerance is a measurement of**
  - a. component sensitivity
  - b. how easy it is to overload a component
  - c. resistance in relation to temperature
  - d. how close a component must perform to its actual value
  
3. **Tolerance for a 4-digit chip resistor is typically**
  - a.  $\pm 10\%$
  - b.  $\pm 5\%$
  - c.  $\pm 1\%$
  - d.  $\pm .25\%$
  
4. **The number or letter that tells you how many zeros to add to the value is called the**
  - a. multiplier
  - b. significant value
  - c. tolerance
  - d. temperature coefficient
  
5. **Kilo-ohm, or K, is an abbreviation for how many ohms?**
  - a. 10
  - b. 100
  - c. 1,000
  - d. 10,000
  
6. **Meg-ohm, or M, is an abbreviation for how many ohms?**
  - a. 100
  - b. 1,000
  - c. 100,000
  - d. 1,000,000
  
7. **65,000 ohms can also be expressed as**
  - a. 6.5K ohms
  - b. 65K ohms
  - c. 650K ohms
  - d. .65M ohms

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8. Use the number code chart to find the value and tolerance of this 3-digit resistor.



- a. 34.1 ohms,  $\pm 1\%$
- b. 3,400 ohms,  $\pm 1\%$
- c. 340 ohms,  $\pm 5\%$
- d. 341 ohms,  $\pm 5\%$

9. Use the number code chart to find the value and tolerance of this 3-digit resistor.



- a. 105 ohms,  $\pm 5\%$
- b. 1,000,000 ohms,  $\pm 5\%$
- c. 10,000,000 ohms,  $\pm 5\%$
- d. 100,000 ohms,  $\pm 5\%$

10. Use the number code chart to find the value and tolerance of this 4-digit resistor.



- a. 202 ohms,  $\pm 1\%$
- b. 2,002 ohms,  $\pm 1\%$
- c. 20,002 ohms,  $\pm 1\%$
- d. 20,000 ohms,  $\pm 1\%$

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11. Use the number code chart to find the value and tolerance of this 4-digit resistor.



- a. 6.803 ohms,  $\pm 1\%$
- b. 68,000 ohms,  $\pm 5\%$
- c. 680,000 ohms,  $\pm 1\%$
- d. 680 ohms,  $\pm 3\%$

12. The Bill of Materials (BOM) calls for a 3.4 ohm  $\pm 5\%$  resistor. What is the number code?

- a. 3R40
- b. 34R0
- c. R34
- d. 3R4

13. Use the decimal and symbol chart to calculate the value and tolerance of this resistor.



- a. 7.75 ohms,  $\pm 1\%$
- b. 77.5K ohms,  $\pm 1\%$
- c. 5.77 ohms,  $\pm 1\%$
- d. 77.5 ohms,  $\pm 1\%$

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14. Use the resistor value and tolerance code chart to find the value and tolerance of this axial resistor.



- a. 90,000 ohms,  $\pm 10\%$
- b. 900,000 ohms,  $\pm 10\%$
- c. 9,002K ohms,  $\pm 1\%$
- d. 9,002 ohms,  $\pm 10\%$

15. Use the decimal and symbol chart to calculate the value and tolerance of this resistor.



- a. 98 ohms,  $\pm 1\%$
- b. 980 ohms,  $\pm 5\%$
- c. 981 ohms,  $\pm 5\%$
- d. 9.1 ohms,  $\pm 5\%$

16. Use the decimal and symbol chart to calculate the value and tolerance of this resistor.



- a. 70.5 milli-ohms,  $\pm 1\%$
- b. 70L ohms,  $\pm 5\%$
- c. 70.5 meg-ohms,  $\pm 1\%$
- d. 7,025 ohms,  $\pm 5\%$

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17. Use the E96 series charts to find the value of this 0603,  $\pm 1\%$  resistor.



- a. 49.9 ohms
- b. 499 ohms
- c. 4,990 ohms
- d. 49,900 ohms

18. The BOM calls for a 720,000pF  $\pm 5\%$  capacitor. What is the 3-digit value and tolerance letter code?

- a. 724J
- b. 720J
- c. 723F
- d. 725K

19. Use the capacitor value and tolerance charts to find the value and tolerance of this tantalum capacitor.



- a. 673pF,  $\pm 3\%$
- b. 67,000pF,  $\pm 10\%$
- c. 670,000pF,  $\pm 10\%$
- d. 67,000,000pF,  $\pm 5\%$

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20. Use the capacitor and inductor decimal chart to calculate the value and tolerance of this capacitor.



- a. 346pF,  $\pm 20\%$
- b. 3.6pF,  $\pm 20\%$
- c. 3.6 $\mu$ F,  $\pm 20\%$
- d. 306 $\mu$ F,  $\pm 2\%$

21. Unless otherwise indicated, capacitors are calculated in

- a. nanofarads
- b. picofarads
- c. microfarads
- d. megafarads

22. Use the 2-digit alphanumeric code charts to find the value and tolerance of this chip capacitor.



- a. 11,000pF,  $\pm 20\%$
- b. 1,100pF,  $\pm 20\%$
- c. 110pF,  $\pm 20\%$
- d. 110,000pF,  $\pm 20\%$

23. Unless otherwise indicated, inductors are calculated in

- a. millihenries
- b. nanohenries
- c. microhenries
- d. picohenries



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24. Use the inductor value and tolerance chart to calculate the value and tolerance of this radial inductor.



- a. 740,000 microhenries,  $\pm 3\%$
- b. 74,000 microhenries,  $\pm 2\%$
- c. 742 microhenries,  $\pm 2\%$
- d. 7,400 microhenries,  $\pm 2\%$

25. Use the inductor number code chart to calculate the value and tolerance of this 3-digit inductor.



- a. 371 microhenries,  $\pm 20\%$
- b. 370 microhenries,  $\pm 20\%$
- c. 37.1 microhenries,  $\pm 20\%$
- d. 3,700 microhenries,  $\pm 20\%$

26. The BOM calls for a  $.47\mu\text{H} \pm 20\%$  inductor. What is the 3-character code?

- a. 4N7
- b. 4R7
- c. N47
- d. R47

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27. Use the capacitor and inductor decimal chart to calculate the value of this inductor.



- a. .45 microhenries,  $\pm 20\%$
- b. .45 nanohenries,  $\pm 20\%$
- c. 4.5 microhenries,  $\pm 20\%$
- d. 4.5 nanohenries,  $\pm 20\%$

28. A component rated for 3/4 watt *can* be substituted with a

- a. 1 watt component
- b.  $\frac{1}{2}$  watt component
- c.  $\frac{1}{4}$  watt component
- d.  $\frac{1}{8}$  watt component

29. A component rated for 75 volts *cannot* be substituted with a

- a. 50 volt component
- b. 100 volt component
- c. 150 volt component
- d. 200 volt component

30. Identify the acceptable tolerance substitution for a device with  $\pm 5\%$  tolerance.

- a. plus or minus 1%
- b. plus or minus 2%
- c. plus or minus 4%
- d. all of the above