



Family name:
ID:

Name:

QUESTION	a	b	c
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

All the items have been prepared thinking of the field of Industrial Electronic Equipment.
Correct answer: +1 Wrong answer: -1/3 No answer: 0

1.- The magnetic coupling between two loops depends on:

- a) the length of the cables
- b) the width of the cables
- c) the loop area

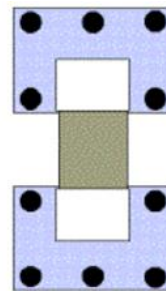
2.- To make a correct PCB design:

- a) Use one power ground for both control and power signals
- b) Keep tracks close to the return
- c) Place all the noisy signals together

3.- Which of the following capacitors has the best connection?



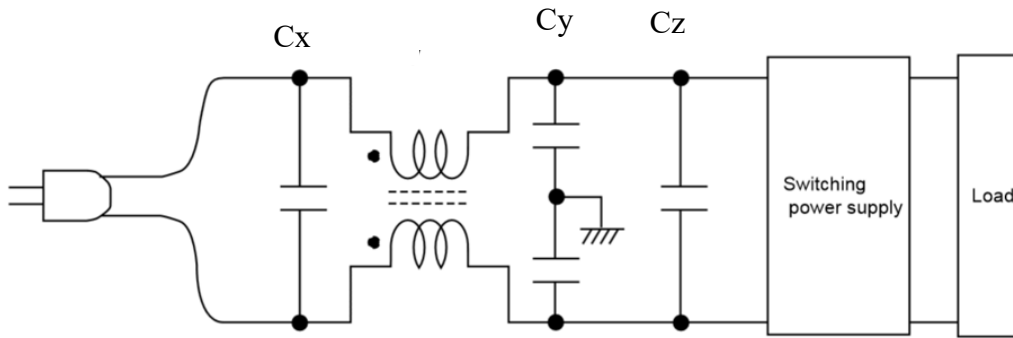
(1)



(2)

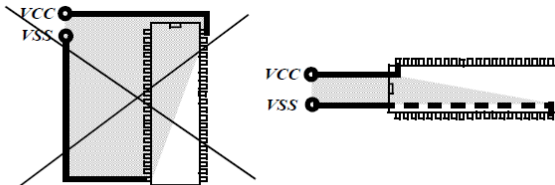
- a) Connection (1), because it reduces cross-talking
- b) Connection (1), because it increases the series inductance.
- c) Connection (2), because it reduces the series inductance.

4.-To filter common mode currents



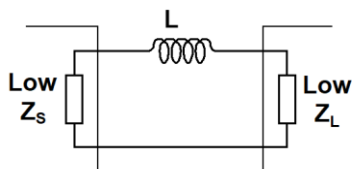
- a) It is necessary to include capacitors C_x and C_z .
- b) It is necessary to include capacitor C_z .
- c) It is necessary to include capacitor C_y .

5.-The correct tracking minimizes susceptibility problems because

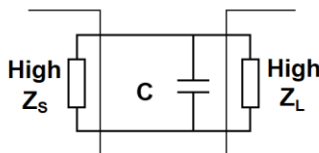


- a) It reduces the length of the tracks.
- b) It increases the parasitic capacitance between tracks.
- c) It reduces the loop defined by the tracks.

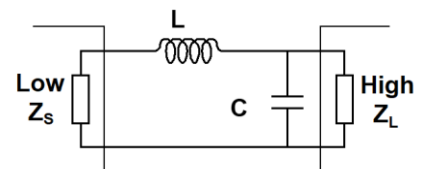
6.- Select the correct filter



[1]



[2]



[3]

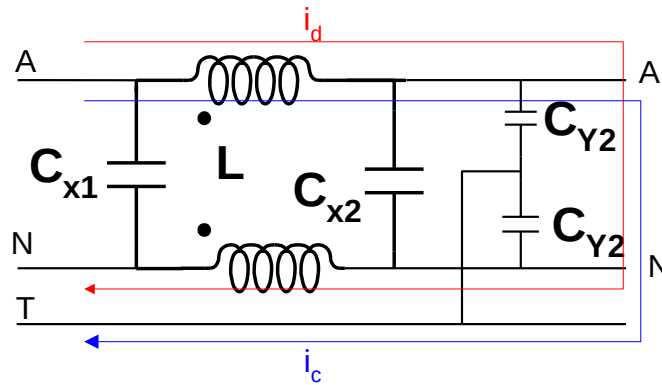
- a) Filter 1
- b) Filter 2
- c) Filter 3

7.- Noisy differential mode currents can be minimized

- a) with shielding.
- b) with a ground plane.
- c) with ceramic capacitors.

- 8- Noisy common mode currents can be minimized
- a) by avoiding connection of heatsinks to ground.
 - b) with electrolytic capacitors.
 - c) with snubbers.

9.-In the figure



- a) C_y mainly reduce differential mode currents.
- b) C_x mainly reduce differential mode currents.
- c) L mainly reduces differential mode currents.

10.- Select the correct statement

- a) Current amplitude is the most important parameter related to electromagnetic noise.
- a) Do not keep power ground and control ground separately.
- a) Keep tracks close to the return.