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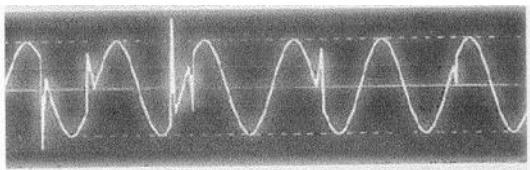
Name:

QUESTION	a	b	c
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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.- This 50-Hz waveform shows



- a) transient disturbances
- b) voltage dips
- c) high-frequency noise

2.-The new directive CEM 2014/30/UE (2016) determines that the responsibility for the correct equipment operation (as far as EMC is concerned) falls on:

- a) the manufacturer only.
- b) the certification laboratory.
- c) both the manufacturer and the importer.

3.- To sell their products in the EU, companies must pass the EMC test. These tests can **only** be accepted if they are performed

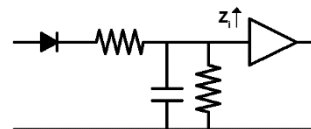
- a) in a certification laboratory
- b) by the International Electrotechnical Commission
- c) in any laboratory with the appropriate equipment.

4.- The units used in a conducted emission test are:

- a) dBuV
- b) dBuV/m
- c) dBm

5.- The figure shows the block diagram of a:

- a) peak adapter
- b) quasi-peak adapter
- c) average adapter

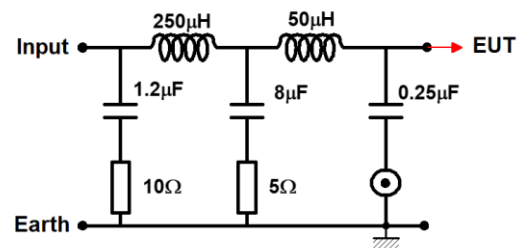


6.- Calculate the electromagnetic field received by an antenna that produces $5.62 \mu\text{V}_{\text{rms}}$. The antenna factor is 10dB/m

- a) 5.62 dBμV/m
- b) 15 dBμV/m
- c) 25 dBμV/m

7.- The schematic shown in the figure corresponds to

- a) a coupling/decoupling network.
- b) a line impedance stabilization network.
- c) an L-C filter.

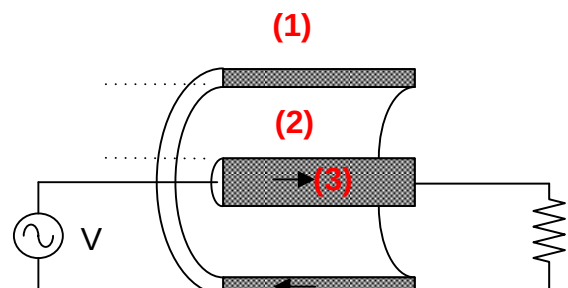


8.- The Line Impedance Stabilization Network (LISN)

- a) fixes the line impedance at 50Ω from 150kHz to 30MHz.
- b) prevents noise from being injected in the AC grid.
- c) allows the injection of the noise in the connections to the equipment under test.

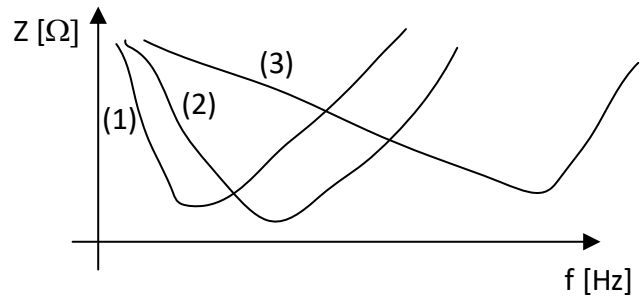
9.- The electrical energy delivered from the voltage source to a load when a coaxial cable is used flows

- a) through the external air (1)
- b) through the internal insulator (2)
- c) through the inner conductor (3)



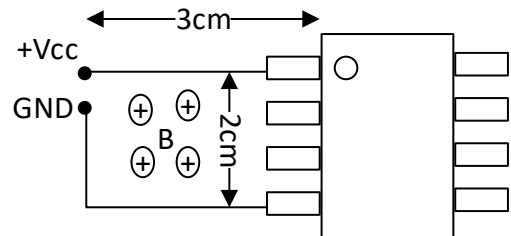
10.- The plot that corresponds to an electrolytic capacitor is

- a) Plot (1)
- b) Plot (2)
- c) Plot (3)



11.- If the circuit of the figure is affected by an alternative magnetic field at 100kHz ($B=0.01\text{T}$ maximum amplitude), what is the maximum voltage that can be induced in the power supply connections?

- a) 3.77V
- b) 3.77mV
- c) 60μV



12.- Select the correct statement

- a) Insulators cannot store charges
- b) Conductors cannot store charges
- c) Both insulators and conductors can store charges

13.- Select the correct statement

- a) Varistors only remove positive high-voltage peaks
- b) Transient-voltage-suppression diodes are faster than varistors.
- c) Transient-voltage-suppression diodes only remove positive high-voltage peaks.

14.- Absorption losses in a shield

- a) increase with the thickness of the material.
- b) decrease with the thickness of the material.
- c) decrease with the frequency.

15.- Select the most appropriate material for shielding magnetic fields.

- a) Copper
- b) Aluminium
- c) Steel

16.- In a semi-anechoic chamber, during the radiated-emission test

- a) reflexions on the floor are allowed
- b) reflexions on the floor are NOT allowed
- c) reflexions are allowed on floor and walls.

17.- In a GTEM

- a) the spatial distribution of the electrical and magnetic field strength is strongly inhomogeneous.
- b) an antenna setup is used for radiated emission.
- c) both radiated emissions and radiated immunity measurements can be performed.

18.- This probe can be used to

- a) measure magnetic fields.
- b) measure electric fields.
- c) measure both magnetic and electric fields.



19.- In an immunity test, the aptitude criteria

- a) defines the amplitude of the signal used to radiate the EUT.
- b) defines the type of the equipment that should comply with the test.
- c) defines the behaviour of the equipment during and after the test.

20.- Capacitive coupling clamps

- a) prevent the injection of conductive noise into the grid.
- b) allow a low-impedance path to ground for radio frequency signals during the immunity test.
- c) allow the injection of fast transients during the immunity test.

