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SSC JE 2023

PGCIL & DDA JE

Electrical Machine & Network

New MCQ with tips & trick

Day-4

> LIVE

6:00 PM Abhinesh sir

Q

A resistance is rated for 2.5 kΩ, 1 watt. Determine its maximum voltage and current ratings.

(a) 100 V, 100 mA

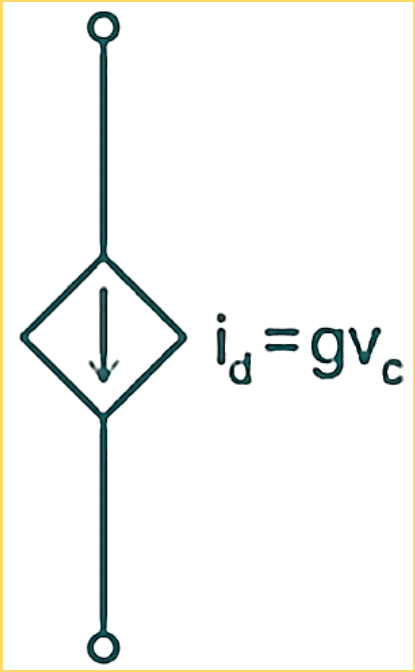
(b) 50 V, 200 mA

(c) 100 V, 10 mA

(d) 50 V, 20 mA

Q

Identify the source that has the following symbol.



(a) Current – controlled voltage source

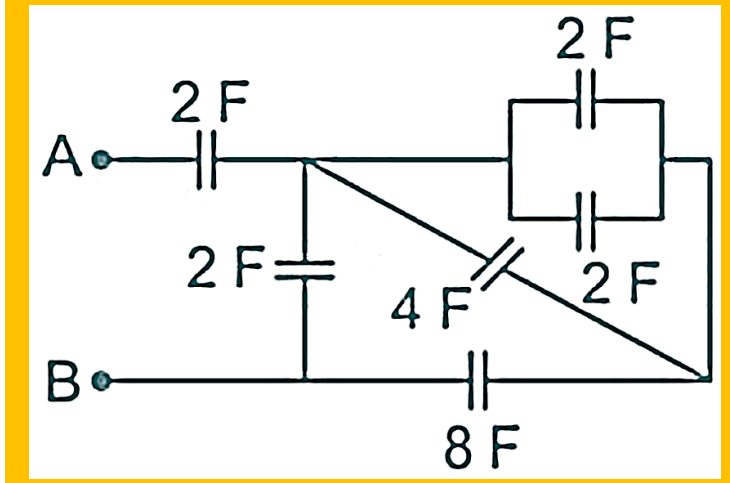
(b) Voltage – controlled voltage source

(c) Voltage – controlled current source

(d) Current – controlled current source

Q

What will be the equivalent capacitance at the terminals A, B?



(a) 1.5 F

(b) 2.5 F

(c) 4 F

(d) 3 F

Q

A 25 W, 220 V bulb and a 100 W, 220 V bulb are connected in parallel and connected to a 220 V supply. Which bulb will produce more light?

(a) The voltage is not sufficient to produce light by the bulb

(b) 25 W bulb

(c) Both bulbs will produce uniform light

(d) 100 W bulb

Q

The unit of volume resistivity is

(a) ohm-m^3/m^2

(b) ohm-m^2/m

(c) ohm-gram-m^2/gram

(d) ohm-m^4/m^3

Q

A capacitor charged to 200 V has 2000 μC of charge. The value of capacitance will be _____.

(a) 100 F

(b) 100 μF

(c) 10 μF

(d) 10 F

Q For magnetically coupled circuits, mutual inductance is always_____.

(a) infinite

(b) negative

(c) positive

(d) zero

Q

A stove element draws 15 A when connected to 230 V line. How long does it take to consume one unit of energy?

(a) 3.45 h

(b) 2.16 h

(c) 1.0 h

(d) 0.29 h

Q

If two 8-pole dc machines of identical armatures are wound, one with lap winding and the other with wav3e winding, then

(a) wave – would machine will have more rated current and more voltage

(b) lap – wound machine will have more rated voltage and more current

(c) lap – wound machine will have more rated voltage and less current

(d) wave – wound machine will have more rated voltage and less current

Q

If the applied voltage to a dc machine is 230 V, then the back emf, for maximum power developed, is

(a) 115 V

(b) 200 V

(c) 230 V

(d) 460 V

Q

A dc shunt generator has full – load voltage regulation of 10% at rated speed of 1000 rpm. If it is now driven at 1250 rpm, then its voltage regulation at full load would

(a) be more than 10%

(b) be less than 10%

(c) remain unchanged

(d) be 12.5%

Q

Two dc machines A and B, using the same conductor material, have armature circuit resistances of 0.4 Ω and 1.2 Ω respectively. Of the two machines,

(a) A is bigger than B for the same current rating

(b) A is bigger than B for the same voltage rating

(c) B is bigger than A for the same current rating

(d) both are of the same size for the same current rating

A 10 kW, 230 V, dc shunt machine has four terminals brought out through four leads. For this machine

(a) both the windings have thin leads

(b) both the windings have thick leads

(c) armature winding has thin leads whereas field winding has thick leads

(d) armature winding has thick leads whereas field winding has thin leads

Q

DC generators are usually designed to develop armature voltages not exceeding 650 V because of the limitations imposed by

(a) field winding

(b) armature winding

(c) commutator

(d) starters

Q

In a dc series generator, the terminal voltage with increase in load will

(a) decrease

(b) increase gradually and then stay at rated voltage

(c) increase to rated voltage and then may decrease

(d) remain nearly constant

Q

Consider the following statements about commutating poles which are fitted on most large dc shunt motors:

1. The commutating poles are placed in the geometric neutral plane and their number is usually equal to the number of main poles
2. The winding on the commutating poles is connected in series with the shunt – field winding on the main poles
3. The polarity of the commutating pole must be that of the next pole further ahead
4. The commutating poles neutralize the reactance voltage produced in the coil undergoing commutation.

Of these statements,

(a) 1, 2 and 3 are correct
(b) 1 and 4 are correct
(c) 2, 3 and 4 are correct
(d) 1, 2 and 4 are correct

Q

Consider the following statements:

1. Interpole windings are connected in series with armature winding

2. Polarity of interpoles must be the same as that of the main poles in advance

3. Distortion of the main field under the pole shoes is not affected by the use of interpoles

From above, the correct answer is

(a) 1 and 2

(b) 2 and 3

(c) 1 and 3

(d) 1 alone

The interpoles in dc machines have a tapering shape in order to

(a) reduce the overall weight

(b) reduce the saturation in the interpole

(c) economise on the material required for interpoles and their windings

(d) increase the acceleration of commutation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