REVISED KEY

8.Use mesh analysis to find the current in the given circuit

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19. In the circuit of Fig. , the magnitudes of VL and VC are twice that of VR. The inductance of the coil is

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28. If the damping in an d'Arsonval galvanometer is only due to electromagnetic effects, the resistance required for critical damping is

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31.A capacitor is connected across a portion of a resistance of the multiplier in order to make the presser coil circuit non-inductive. The value of this resistance is 'r' while the total resistance and inductance of pressure circuit are respectively Rp and L. Then the capacitance C is

0.41 L/r²

57. The armature of a DC generator has a 2-layer lap-winding housed in 72 slots with six conductors per slot. What is the minimum number of commutator bars required for the armature?

72

71. A DC motor develops a torque of 200 N-m at 25 rps. At 20 rps it will develop a torque of ------------N-m

Both 200 and 250

76. The lower limit of speed in a Ward-Leonard method of speed control is governed by

1. Losses in both the machines
2. Residual magnetism of the generator
3. Armature circuit resistance of both the machines
4. Speed of the generator-prime mover

From these, the correct answer is

2 only

79. In Swinburne's method of testing Dc machines, the shunt machine is run as a

Motor at no load at no rated speed and rated voltage

90. The voltage regulation of a transformer at full-load and 0.8 pf lagging is 2.5%. The voltage regulation at full load 0.8 pf leading will be

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134. Which the following method is used to start a synchronous motor?

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135. A salient-pole synchronous motor runs under steady-state conditions at no load with armature current i_a . If the field circuit gets open-circuited, then
it runs at a slower speed as an induction motor and and i_a increases

142. In a 1-phase induction motor, according to the double-revolving field theory,
      A. Forward mmf Ff and backward mmf Fb are equal at standstill
      B. Ff and Fb are equal at all rotor speeds
      C. Forward flux $\square_f$ and backward flux $\overline{\ }_b$ are equal at all rotor speeds

      D. $\square$ f and $\overline{\ }$ b are equal at standstill

      From above, the correct is
                A, D

143. A single-phase, 6-pole, 50 Hz induction motor has rotor resistance of 19 ohms and rotor self-reactance of 20 ohms. In addition to zero speed, the motor torque would be zero at a speed of
                1000 rpm