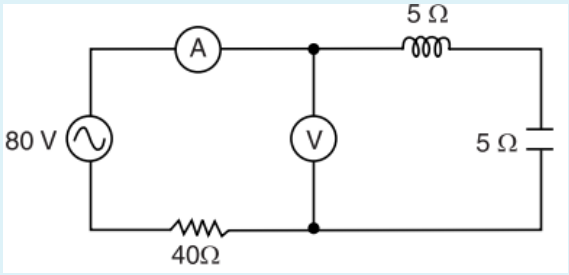
Started on	Saturday, 17 April 2021, 3:01:12 PM
State	Finished
Completed on	Saturday, 17 April 2021, 4:00:00 PM
Time taken	58 mins 48 secs
Grade	**19.00** out of 20.00 (**95**%)

Question **1**

Correct

Mark 1.00 out of 1.00

In figure given below, what will be the reading of the voltmeter ?



- A. 20 V
- B. 0 V ✔
- C. 80 V

The correct answer is: 0 V

Question **2**

Correct

Mark 1.00 out of 1.00

Current through a 400 Ω resistor is $i = 0.06\sin(wt - 30^0)$ A. The voltage across the resistor is .....

- A. $24\angle -30^0$ ✔
- B. $24\angle 30^0$
- C. $12\angle 30^0$
- D. $48\angle 45^0$

The correct answer is: $24\angle -30^0$

Question **3**

Correct

Mark 1.00 out of 1.00

In an L-C-R series circuit, the capacitance is changed from C to 4 C. For the same resonant frequency, the inductance should be changed from L to _____.

- A. 4 L
- B. L / 4 ✔
- C. L / 2
- D. 2 L

The correct answer is: L / 4

Question **4**

Correct

Mark 1.00 out of 1.00

If the impedance of a circuit is $10 \angle 60^0$ ohms, then resistance in the circuit is .....

- A. 5 Ω ✔
- B. 8.66 Ω
- C. 10 Ω
- D. 0 Ω

The correct answer is: 5 Ω

Question **5**

Correct

Mark 2.00 out of 2.00

A capacitor of 8 μF takes a current of 1A when alternating voltage applied across it is 250 V. Calculate the value of resistance to be connected in series with the capacitor to reduce the current in the circuit to 0.5 A with frequency of supply remaining unchanged.

- A. 4.33 Ω ✔
- B. 2.33 Ω
- C. 400 Ω
- D. 5.33 Ω

The correct answer is: 4.33 Ω

Question **6**

Correct

Mark 2.00 out of 2.00

In a series circuit containing pure resistance and a pure inductance, the current and the voltage are expressed as $i(t) = 5\sin(314t + \frac{2\pi}{3})$ and $v(t) = 15\sin(314t + \frac{5\pi}{6})$ Value of the inductance and phase angle are .....

- A. 7.48mH, 60^0
- B. 7.48mH, 30^0
- C. 4.78mH, 30^0 ✔
- D. 4.78mH, 60^0

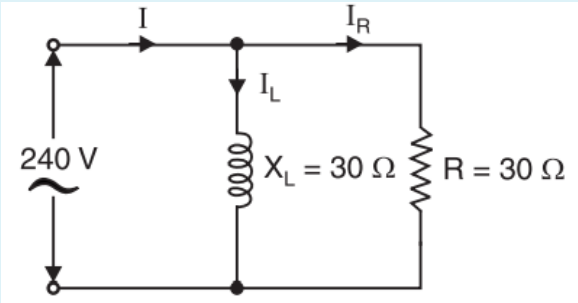
The correct answer is: 4.78mH, 30^0

Question **7**

Correct

Mark 1.00 out of 1.00

The power taken by the circuit shown in figure given below is .....



- A. 1920 W ✔
- B. 1200 W
- C. 480 W

The correct answer is: 1920 W

Question **8**

Correct

Mark 1.00 out of 1.00

Domestic appliances are connected in parallel across a.c. mains because .....

- A. this arrangement occupies less space
- B. operation of each appliance becomes independent of the other ✔
- C. appliances have same currents ratings
- D. it is a simple arrangement

The correct answer is: operation of each appliance becomes independent of the other

Question **9**

Incorrect

Mark 0.00 out of 1.00

An impedance in an alternating circuit is given as $z = 3 + j4\ \Omega$. The admittance of the circuit will be .....mho.

- A. $0.33 - j0.25$ ✖
- B. $0.33 + j25$
- C. $0.12 - j0.16$
- D. $0.12 + j0.16$

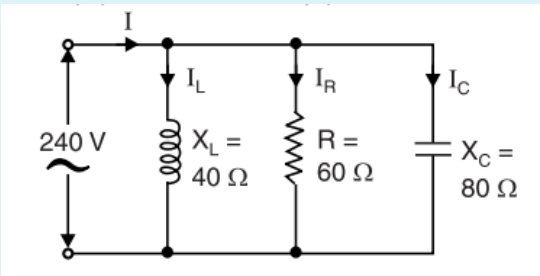
The correct answer is: $0.12 - j0.16$

Question **10**

Correct

Mark 2.00 out of 2.00

The line current drawn by the circuit shown in figure is .....



- A. 6 A
- B. 5 A ✔
- C. 13 A

The correct answer is: 5 A

Question **11**

Correct

Mark 2.00 out of 2.00

A resistance of 20 Ω and a coil of inductance 31·8 mH and negligible resistance are connected in parallel across 230 V, 50 Hz supply. Line current and power consumed by the circuit are .....

- A. 24.71 A, 2743 W
- B. 20.71 A, 2443 W
- C. 25.71 A, 2643 W ✔
- D. 35.71 A, 2543 W

The correct answer is: 25.71 A, 2643 W

Question **12**

Correct

Mark 1.00 out of 1.00

In a 3-phase system, if the instantaneous values of phases R and Y are +60 V and − 40 V respectively, then instantaneous voltage of phase B is .....

- A. − 20 V ✔
- B. 120 V
- C. 40 V

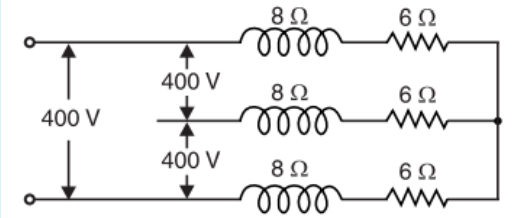
The correct answer is: − 20 V

Question **13**

Correct

Mark 1.00 out of 1.00

The power factor of the star-connected load shown in the given figure is .....



- A. 0.8 lagging
- B. 0.6 lagging ✔
- C. 0.75 lagging

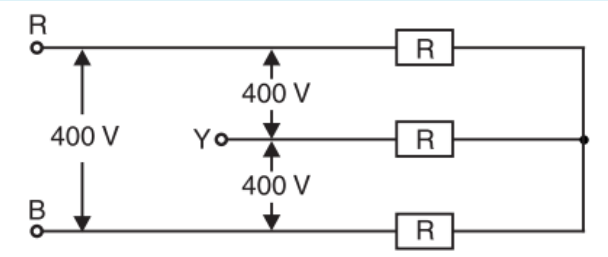
The correct answer is: 0.6 lagging

Question **14**

Correct

Mark 1.00 out of 1.00

The power consumed in the star-connected load shown in figure is 690 W. The line current is .....



- A. 1.725 A
- B. 1 A ✔
- C. 2.5 A

The correct answer is: 1 A

Question **15**

Correct

Mark 2.00 out of 2.00

Three coils, each having a resistance of 20 Ω and an inductive reactance of 15 Ω, are connected in star to a 400 V, 3-phase, 50 Hz supply. Values of line current and power consumed by load are .....

- A. 12 A, 6212W
- B. 9.24A, 6121 W
- C. 12A, 5212W
- D. 9.24A, 5121W ✔

The correct answer is: 9.24A, 5121W

◄ Basic Electrical Engineering Test 1

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