Module 2 BASIC ELECTRIC

Name:	Date:

Part A: Multiple choice question (MCQ)

1) The symbol unit for resistance is.

(a) F
(b) A
(c) W
(d) Ω

2) What is the unit for power?

(a) volts
(b) ampere
(c) watts
(d) volt-ampere

3) A resistance of an electric fan is 420 Ω and operating current at 2.4 ampere, calculate the power in watts?

(a) 2280.2 w
(b) 2300.2 w
(c) 2419.2 w
(d) 2820.2 w

4) The total voltage of each resistor R1 and R2 in parallel circuits is _____.

(a) to be add (R1+R2)
(b) the same
(c) R1 is bigger then R2
(d) R1 is smaller than R2

5) In series circuits when two or more resistor is connected, the value of the current is.

(a) is small
(b) is bigger
(c) remain the same
(d) voltage is higher

6) What is the angle differences between red and yellow phase in three phase system?

(a) 90°
(b) 180°
(c) 120°
(d) 360°

7) A water heater rated 3200 watt operate at 240 volt, calculate the operating current?

(a) 13.33 ampere
(b) 23.33 ampere
(c) 33.33 ampere
(d) 34.33 ampere

8) What is the value of Vrms if 240v supply?

(a) 169.68 volt
(b) 125.68 volt
(c) 220.68 volt
(d) 340.68 volt

9) What is the value of voltage average (Vavg) when Vp is 220v supply?

(a) 98.5 volt
(b) 125.8 volt
(c) 133.7 volt
(d) 140.58 volt

10) A capacitor is device capable to____.

(a) store energy charge
(b) store current
(c) store power
(d) store resistance

11) What is the unit for apparent power?

(a) ampere
(b) watts
(c) volt-ampere
(d) volt-ampere reactive

12) The value of power factor is 0.78, calculate the angle in degree.

(a) 19 °
(b) 26 °
(c) 38 °
(d) 42 °

13) What is the ideal value of power factor according to requirement?

(a) <0.65 or smaller
(b) <0.85 or smaller
(c) >0.55 or greater
(d) >0.85 or greater

14) The following are the resistive loads, except.

(a) electronic
(b) heater unit
(c) motor electric
(d) emergency light

15) The following is the cause of low power factor, except.

(a) electric motor
(b) rectifier DC circuit
(c) transformer
(d) fan or blower

16) A ballast is labelled 0.38 henry and frequency is 50 Hertz, calculate the inductive reactance (XL)?

(a) 58.55 Ω
(b) 85.35 Ω
(c) 119.32 Ω
(d) 145.55 Ω

17) A capacitor is 100μF/220vAC and frequency is 50 Hertz, calculate the capacitive reactance (Xc)?

(a) 18.45 Ω
(b) 25.75 Ω
(c) 31.84 Ω
(d) 44.25 Ω

18) What is the out wave form produced after rectifier and filtered

(a) square wave
(b) sine wave
(c) saw tooth wave
(d) direct straight line

19) What is the function of rectifier device in the DC supply?

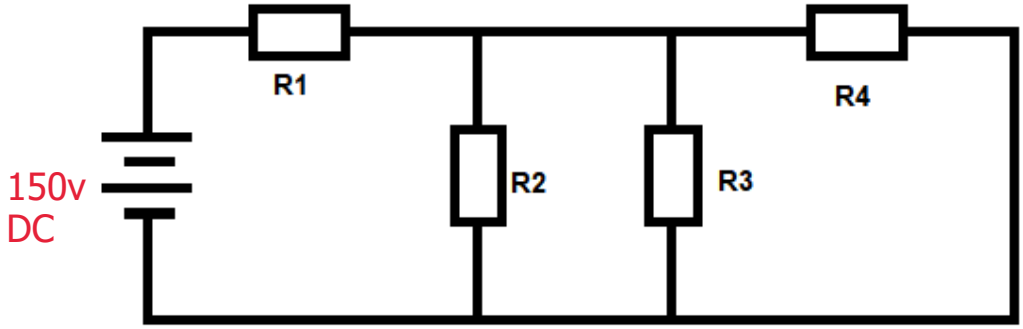
(a) to lower the voltage
(b) to change volts into ampere
(c) to limit the current flow
(d) to change voltage from AC to DC

20) The transformer is one of the component inside the DC supply power, what is the function for this device?

(a) to store current
(b) to lower voltage
(c) to store power
(d) to increase voltage

Part B: Subjective Question

1)



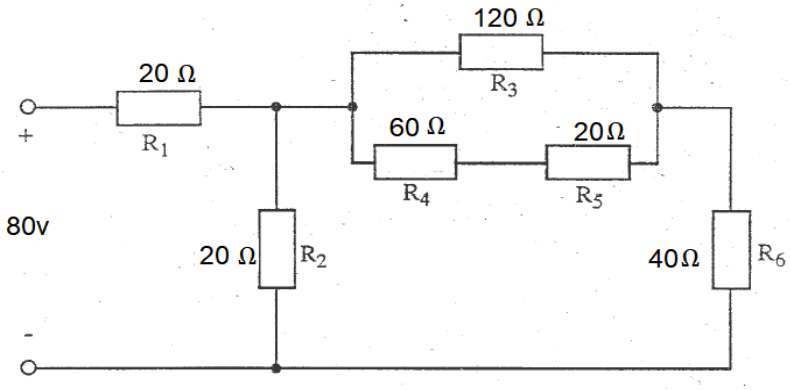
Refer to figure above is a series-parallel circuit, calculate the following values required. Given value R1=250Ω, R2=380Ω, R3=120Ω and R4=320Ω.

a) Find resistance total, Rt?

b) Calculate the current total, It?

c) Calculate the voltage across R3 and R4?

2)

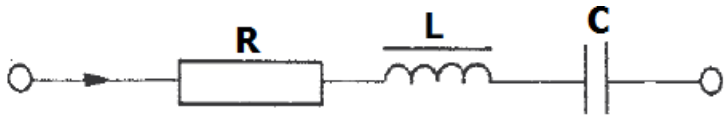


Refer to figure above calculate the required values.

a) Find resistance total, Rt?

b) Calculate the current total, It?

3)



Refer to figure above calculate the required values.
Given value of R=60Ω, L=0.35H, C=88.46μF and Freq=50Hz.

a) find impedance Z?

b) calculate the power factor

c) find the angle of cos in degree.

4) a) A building operates on the total load is 55.6 kW, the power factor is set at 0.86, calculate the apparent power, S?

b) A machine draws about 75.8 ampere current and operates on 415 volt supply.

i) Calculate the true power, P.

ii) If the apparent power S (design power) is 61,914.9 VA, calculate the power factor?

c) Given the apparent power S=70 kVA and true power P=58 kW, calculate the reactive power, Q?

5) a) List down four (4) dis-advantage of low power factor.

i) …….

ii) …….

iii) …….

iv) …….

b) List down three (3) magnetism material.

i) …….

ii) …….

iii) …….

c) Write down the correct three power formula.

i) apparent power, S ……..

ii) reactive power, Q ……..

i) power factor, (p.f) ……..