KERALA AGRICULTURAL UNIVERSITY

B.Tech.Food Engg. 2016 Admission

II Semester Final Examination – July - 2017

Cat. No: Elen 1201

Title: Basic Electrical Engineering (2+1)

Marks: 50

Time : 2 hours

I. State True or False: **(10 x 1=10)**

1. Superposition theorem is applicable only to linear networks.
2. Current through all the elements remains same in Parallel connection.
3. Unit of Magnetic field strength is Tesla.
4. For a DC quantity, RMS and average value remains the same.
5. An SCR works in three operating modes.
6. A capacitor stores energy in its magnetic field.
7. The output ripple of half wave rectifier is same as that of a full wave rectifier.
8. The process of adding impurity is called as doping.
9. An SCR is four layer semiconductor device.
10. Line voltage and phase voltage remains same in star connection.

II. Write short notes on ANY FIVE: **(5x 2=10)**

1. What is the value of RMS voltage of an AC voltage with instantaneous value 325sin314t where 314 is the angular frequency in rad/sec?
2. What happens if power factor in an AC circuit is very low?
3. What is the difference between passive and active elements?
4. Draw the three phase delta connection and mention the relationship between line and phase values of voltage and current.
5. How does an FET differ from SCR?
6. Explain the colour coding of resistors.
7. What do you mean by apparent power in an AC circuit?

III Write answers on ANY FIVE: **(5 x 4=20)**

1. Explain the superposition theorem with a suitable example.
2. Explain the following (a) Ripple factor (b) De Morgan's theorem (c) Intrinsic semiconductor.
3. What do you mean by active power in an AC circuit? How does it differ from apparent and reactive power?
4. Explain the major difference between half wave and full wave rectifier.
5. Explain the different types of electrical metering.
6. Explain with neat circuit diagram full wave bridge rectifier. Draw the input and output waveform.

7. Find the impedance and current of the series RLC ac circuit with input vo
sinusoidal ac of value 325 Sin314t, where 314 is the angular frequency in rad
value of resistor is 4Ω, inductive reactance is inductive reactance is 7Ω and capac
reactance is 4Ω.

IV. Write essay on any ONE **(1 x 10=10)**

1. What do you mean by integrated circuits? Explain in detail the IC fabrication technique.
2. (a) Explain types of electrical tariff.
   (b) What are the different types of heaters.

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