



KERALA AGRICULTURAL UNIVERSITY
B.Tech.(Food Technology) 2023 Admission
I Semester Final Examination – February 2024

Fmpe.1101

Electrical Engineering (2+1)

Marks: 50
Time: 2 hours

I Fill in the blanks

(10x1=10)

1. The peak factor of sinusoidal wave is
2. The impedance of a parallel RLC circuit is when applied voltage and current are in phase.
3. In a star connected three phase system, the magnitude of line voltage is times phase voltage.
4. The speed of an induction motor is proportional to supply frequency.
5. At, power factor of series RLC circuit is unity.
6. The copper loss varies as a of current through the coil.
7. The reactance offered by an inductor to an alternating current of frequency 50 Hz is ohm. If frequency is increased to 100 Hz reactance becomes 10 Ohm.
8. The instantaneous value of sinusoidal AC current is equal to its average value at an angle ofdegree.
9. In a series RC circuit V_C V_R by 90 degrees.
10. The Power factor of RC circuit is always less than

II Write short notes on ANY FIVE of the following

(5x2=10)

1. What is the significance of back e.m.f in DC motors?
2. Explain hysteresis loss in transformer.
3. Explain construction of squirrel cage and wound rotor of induction motor.
4. What is the need of starter in DC motor?
5. Discuss variation of efficiency of transformer with power factor.
6. Prove that the voltage leads current by 90 degrees in pure inductor.
7. Explain concept of voltage buildup in DC generator.

III Answer ANY FIVE of the following

(5x4=20)

1. Explain briefly the concept of revolving field in three-phase induction motor.
2. Explain with help of diagram the equivalent circuit of three-phase induction motor.
3. Explain with the help of neat phasor diagram, the concept of transformer on no load.
4. Derive an expression for terminal voltage generation in DC generators.
5. Discuss briefly power factor correction equipment.
6. Discuss various characteristics of DC generator.
7. Discuss briefly open circuit and short circuit test of transformer.

IV Write an essay on ANY ONE of the following

(1x10=10)

1. Discuss various methods of power measurement in three-phase system.
2. Discuss various methods of speed control of DC motors.
