SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

AN AUTONOMOUS INSTITUTION

Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai

I Semester

B.E-Mechanical and Mechatronics Engineering (Additive Manufacturing)

23EET101 – Basics of Electrical and Electronics Engineering

Regulations 2023

QUESTION BANK

UNIT - II

PART A

1	Write down the EMF equation of a DC generator.
2	List the functions of commutator.
3	Give the application of DC Motor.
4	Differentiate between separately excited DC Generator and self-excited DC generator.
5	For the given data, calculate number of turns of a single phase Transformer, E_1= 2100V, E_2=250V,f=50Hz, Flux=3.16mWb.
6	Name the types of motor used in ceiling fan.
7	For the given data, calculate the number of turns. E_1= 2200V, E_2=250V,f=50Hz, Flux=2.16mWb.
8	What are the main advantages of capacitor run motor.
9	State the principle of three phase induction motor.
10	List the disadvantages of single phase induction motor.

PART B

1	Elaborate the types of single phase induction motor.
2	With neat sketch explain operating principle of a single phase transformer along with its construction.
3	Drive the EMF equation of single phase Transformer.
4	Explain the construction and working of single phase induction motor in detail.
5	(ii) The no-load ratio required in a single-phase 50Hz transformer is 6600/300V. If the maximum value of flux in the core is to be about 0.09 Weber, find the number of turns in each winding. (ii) The no-load ratio required in a single-phase 50Hz transformer is 3300/300V. If the maximum value of flux in the core is to be about 0.06 Weber, find the number of turns in each winding.
6	Elaborate the constructional details and working principle of DC Generator with a neat sketch also list its applications.
7	Elaborate the construction and operation of rotating device, which convert electrical energy to mechanical energy.
8	A wave connected armature winding has 19 slots with 54 conductors per slot. If the flux per pole is 0.025wb and number of poles is 8, find the speed at which the generator should be run to give 513V. Also find the speed if the armature is lap connected.
9	A 50 KW, 250 V Shunt generator operates on full load at 1500 rpm. The armature has 6 poles and is lap wound with 200 turns. Find the induced EMF and the flux per pole at full load. Given that the armature and field resistances are 0.01 Ω 125 Ω respectively. Neglect armature reaction.
10	Obtain the mathematical expression for generated EMF of DC Generator and explain each term.