Sanjay Ghodawat University, Kolhapur

2020-21

Established as State Private University under Govt. of Maharashtra. Act No XL, 2017

EXM/P/09/00

Year and Program: 2020-21 TY(BTech)	**School of Technology**	**Department: Electrical Engg**
Course Code: ELE 303	**Course Title: Ac Machines**	**Semester : V**
Day :Wednesday **Date :16.12.2020**	**End Semester Examination**	**Time : 2 Hrs.** **Max Marks : 50**

Instructions: 1) All Questions are compulsory.

		Marks	Bloom's Level	CO
Q.1	**Answer the following (any Two)**–			
a)	Explain Double field revolving theory for single phase induction motor.	8	2	1
b)	Derive EMF equation of alternator.	8	2	2
c)	A 500 KVA, three phase, star connected alternator has a rated line to line terminal voltage of 3300V. The resistance and synchronous reactance per phase are 0.3 and 4.0 ohm respectively. Calculate the voltage regulation at full load, 0.8pf lagging.	8	3	2
Q.2	**Answer the following (any two) –**			
a)	State the necessity of parallel operation of alternators. List the conditions for parallel operation**.**	8	3	2
b)	Explain methods for starting of synchronous Motor.	8	3	2
c)	A 10 pole, 3-phase alternator is coupled to an engine running at 600 rpm. It supplies an induction motor which has a full load speed of 1440 revolutions per minute. Calculate the percentage slip and the number of poles of the motor.	8	4	4
Q.3	**Answer the following (any two) –**			
a)	Draw and explain torque slip characteristics of three phase induction motor.	9	3	4
b)	Draw the power flow diagram of three phase induction motor with equations.	9	4	3
c)	A 6 poles, 3-phase induction motor is connected across a 400V, 50HZ supply source. Calculate the speed of the rotating magnetic field produced. What would be the speed of the rotor when slip is	9	4	4

0.04. Also calculate the frequency of rotor current at stand still and at a slip of 0.03.

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