Enrollment No: Exam Seat No: C. U. SHAH UNIVERSITY Winter Examination-2020						
Subject Nan	ne: Electrical Machines & Elec	tronics				
Subject Code: 4TE03EMN1		Branch: B.Tech (Mechanical)				
Semester: 3	Date: 09/03/2021	Time: 11:00 To 02:00	Marks: 70			
(2) Instr (3) Dray	of Programmable calculator & arcuctions written on main answer by neat diagrams and figures (if not mee suitable data if needed.		rohibited.			
Q-1	Attempt the following question	ons:	(14)			
a) b)	is a) 2 b) 4 c) 1 d) 8 Nature of induced emf in armat a) AC b) DC c) Both d) None of above Commutator is made of		el paths			
d)	 c) Aluminum d) All of above Which generator is used for light a) DC Series b) DC Shunt c) DC compound d) D) None of above 	htning purpose?				
e) f)	The basic function of a transformal the power level by the power factor control the level of the Current dong the constant losses in transformal copper loss. b) eddy current loss. c) hysteresis loss.					



	g)	Transformer cores are laminated to reduce	
		a) Copper loss	
		b) Hysteresis loss	
		c) Eddy current loss	
		d) Size	
	1.	,	
		State the classification of D.C.motor.	
	i)	How the eddy current losses are reduces in d.c. machine?	
	j)	Write different types of tariffs.	
	k)	Define slip and write its equation.	
	1)	Write e.m.f. equation of transformer.	
	m)	State any two applications of d.c. generator.	
	-	Draw the speed torque characteristics of d.c. series motor.	
\ ttem		four questions from Q-2 to Q-8	
XIICIII	pt any	Total questions from Q-2 to Q-0	
2.2		A444.104	(1.4)
Q-2		Attempt all questions	(14)
	(a)	What is Necessity of Starter? Explain the 3 Point Starter of D.C Shunt	(07)
		Motor with neat diagram.	
	(b)	Explain the E.M.F equation for Simplex lap and wave wound generator.	(07)
Q-3		Attempt all questions	(14)
	(a)	Explain speed control of d.c. shunt motor.	(07)
	(b)	What is difference between autotransformer and ordinary transformer?	(07)
	(D)	Write short note on autotransformer.	(07)
		write short note on autotransformer.	
2.4		A 44 A 11	(1.1)
Q-4		Attempt all questions	(14)
	(a)	Explain the Construction Parts of D.C. Generator (1) Yoke (2) Pole	(07)
		Cores and Pole shoes (3) Commutator.(4) Armature core (5) Brushes and	
		bearing.	
	(b)	Derive the torque equation of D.C. Shunt Motor.	(07)
Q-5		Attempt all questions	(14)
Q -5	(a)	Describe the S.C. and O.C. test for single phase transformer.	(07)
		6 1	
	(b)	Illustrate the Tourqe –Current characteristics of various types of d.c.	(07)
		motors.	
Q-6		Attempt all questions	(14)
	(a)	Explain advantages of high transmission voltage.	(07)
	(b)	Describe the constructional features of an alternator.	(07)
Q-7		Attempt all questions	(14)
	(a)	Explain the AND, OR and NOT gate with its truth table and symbol.	(07)
	(b)	Explain D'Morgan's Law for the Boolean Algebra.	(07)
	(D)	Explain D Morgan's Law for the Boolean Algebra.	(07)
)_ <u>8</u>		Attempt all questions	(14)
Q-8	(=)	Attempt all questions Draw and available (i) Half wave mostifier (ii) Full wave bridge mostifier	(14)
	(a)	Draw and explain (i) Half wave rectifier (ii) Full wave bridge rectifier.	(07)
	(b)	Draw the pin diagram of OPAMP 741c and explain the function of each	(07)
		pin.	

d) both 2 and 3

g)

Transformer cores are laminated to reduce

