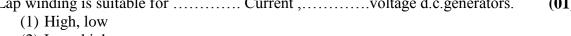
Enrollment No:		Exam Seat N	lo:	
	C.U.SHA	H UNIVER	SITY	
		Examination-2		
Subject Na	me: Electrical Machine-1			
Subject Co	de: 4TE03EMC1		Branch: B.Tech (EEE,I	E E)
Semester: 3 Instructions		Time: 2:30 To 5:30	Marks: 70	
(2) Inst (3) Dra	e of Programmable calculator cructions written on main answaw neat diagrams and figures sume suitable data if needed.	wer book are strictly to l	be obeyed.	
	the sole purpose of a commutation (1) Increase output voltage (2) Reduce sparking at bru (3) Provide smoother output	ator in a d.c generator is shes ut	s to	(14) (01)
	(4) Convert the induced a.c. the commercial efficiency of a cosses equallosses. (1) Constant (2) Stray (3) Iron		imum when its variable	(01)
c) T	 (4) Friction and windage (he critical resistance of the d. (1) Armature (2) Field (3) Load (4) brushes 	c.generator is resistance	of	(01)
d) In	(1) Grashes a d. c. generator, the generat (1) Field current (2) Pole flux (3) Number of armature pa (4) Number of dummy coil	rallel paths	portional to the	(01)
e) L	ap winding is suitable for (1) High, low		voltage d.c.generators.	(01)



(01)

(1) High, low (2) Low, high

Q-1

- (3) Low, low
- (4) High, high
 In a d.c. generators, armature reaction is produced actually by f)

 - (1) Its field current
 - (2) Armature conductors



	(3) Field pole winding	
~)	(4) Load current in armature In a diagram area of the affect of armature reaction on the main pole flux is to	(01)
g)	In a d.c.generator, the effect of armature reaction on the main pole flux is to (1) Reduce it	(01)
	(2) Distort it	
	(3) Reverse it	
	(4) Both (a) and (b)	
h)	As load is increased, the speed of a d.c. shunt motor	(01)
11)	(1) Increases proportionately	(01)
	(2) Remains constant	
	(3) Increases slightly	
	(4) Reduces slightly	
i)	Induced e.m.f in the armature conductors of a d.c.motor is	(01)
1)	(1) Sinusoidal	(01)
	(2) Trapezoidal	
	(3) Rectangular	
	(4) Alternating	
j)	A transformer transforms	(01)
J)	(1) Frequency	(0-)
	(2) Voltage	
	(3) Current	
	(4) Voltage and current	
k)	A Step up transformer increase	(01)
	(1) Voltage	` /
	(2) Current	
	(3) Power	
	(4) Frequency	
l)	No load test on a transformer is carried out to determine	(01)
	(1) Copper loss	
	(2) Magnetizing current	
	(3) Magnetizing current and no load loss	
	(4) Efficiency of the transformer	
m)	The principle of operation of a 3 phase induction motor is most similar to that of	(01)
	(1) Synchronous motor	
	(2) Repulsion-start induction motor	
	(3) Transformer with a shorted secondary	
	(4) Capacitor start, induction run motor	
n)	In a 3 phase induction motor, the rotor field rotates at synchronous speed with	(01)
	respect to	
	(1) Stator	
	(2) Rotor	
	(3) Stator flux	
	(4) None of above	



Attem	pt any	four questions from Q-2 to Q-8	
Q-2		Attempt all questions	(14)
	(a)	State and explain various losses which occur in a d. c generator.	(07)
	(b)	Explain in detail armature reaction.	(07)
Q-3		Attempt all questions	(14)
	(a)	A long shunt compound generator delivers a load current of 50A at 500V and has Armature, series field and shunt field resistances of 0.05 ohm, 0.03 ohm, 250 ohm respectively, calculate the generated voltage and armature current.	(07)
	(b)	Derive the expression for the torque developed in d.c. motor.	(07)
Q-4	(~)	Attempt all questions	(14)
	(a)	Explain the construction and working of three point starter.	(07)
	(b)	Explain Swinburne's test to find the efficiency of a d. c. motor.	(07)
Q-5		Attempt all questions	(14)
~ -	(a)	Explain the the operation of transformer on load and no load with vector diagram.	(08)
	(b)	Explain the core and shell type of transformer.	(06)
Q-6		Attempt all questions	(14)
	(a)	Explain the Speed control methods of d.c shunt motor.	(06)
	(b)	Explain open and short circuit test for single phase transformer. while making short circuit test, low voltage winding is always short circuited. why?	(08)
Q-7		Attempt all questions	(14)
	(a)	Explain the principle of induction motor. Discuss the construction of three phase	(07)
		induction motor.	
	(b)	Draw and Explain the equivalent circuit of single phase transformer.	(07)
Q-8		Attempt all questions	(14)
	(a)	Define the term "slip" of induction motor. Draw and Explain the torque-slip	(07)
		characteristics of a three phase induction motor.	
	(b)	Define "All day efficiency" of transformer. Explain the construction and working principle of auto transformer.	(07)

