Guru Nanak Dev Engineering College, Ludhiana
Department of Electronics and Communication Engineering

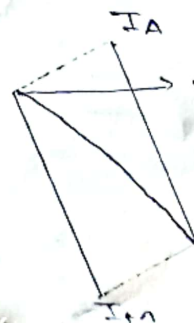|			
Program	B.Tech.(EE)	Semester	4
Subject Code	PCEE-106	Subject Title	Electrical Machines – II
Mid Semester Test (MST) No.	2	Course Coordinator(s)	Harminder Kaur
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MST	24 April, 2024	Roll Number	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Write the advantages of short pitch winding.	CO1, L1	2
Q2	Differentiate crawling and cogging.	CO2, L4	2
Q3	Discuss the working principle of capacitor start capacitor run induction motor.	CO4, L2	4
Q4	Draw and discuss the application of induction generator in wind mills with block diagram.	CO3, L2	4
Q5	Compare salient pole and cylindrical rotors.	CO1, L4	4
Q6	a. Construct and explain torque slip characteristics of three phase induction motor. b. A 6 pole induction motor is fed from 50 Hz supply. If the frequency of rotor emf at full load is 2 Hz. Find full load speed and slip.	CO2, L5,L6	4+4

Course Outcomes (CO)
Students will be able to

1	Understand the concepts of AC machine windings.
2	Analyze performance characteristics of Three Phase Induction motor.
3	Analyze performance characteristics of Induction Generator.
4	Apprehend performance characteristics of Single Phase Induction Motor.
5	Understand the concepts of Synchronous machines.
6	Understand parallel operation of alternators with infinite bus with study of load sharing.

RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTS)		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

Guru Nanak Dev Engineering College, Ludhiana
Department of Electrical Engineering

Program	B.Tech.(EEA, EEB)	Semester	4
Subject Code	PCEE-108	Subject Title	Signals and Systems
Mid Semester Test (MST) No.	2	Course Coordinator(s)	Karanbir Singh & Sukhpal Singh
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MST	26 April, 2024	Roll Number	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Give two conditions for existence of Fourier Transform.	CO4, L1	2
Q2	Find ROC of $x(t) = e^{-2t} u(-t+2)$	CO5, L4	2
Q3	State and prove Parseval's energy theorem.	CO4, L3	4
Q4	Evaluate z transform of sinusoidal sequence and cosinusoidal sequence.	CO5, L5	4
Q5	Calculate $x(t)$ at $t = \infty$, if $X(s) = \dfrac{1}{s(s+1)}$	CO6, L4	4
Q6	Explain Zero Order Hold sampling. Also discuss the process of reconstruction using linear interpolation.	CO6, L6	8

Course Outcomes (CO)
Students will be able to

1	Understand the concepts of continuous time systems.
2	Apprehend concepts of discrete time systems.
3	Understand the behavior of continuous and discrete-time LTI
4	Understand the concept of Fourier Transforms
5	Understand the concept of Laplace and z-Transforms
6	Analyze Sampling and Reconstruction of control system

RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTS)		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

Guru Nanak Dev Engineering College, Ludhiana
Department of Electrical Engineering

Program	B. Tech.(EE)	Semester	4th
Subject Code	PCEE-107	Subject Title	POWER ELECTRONICS
Mid Semester Exam (MSE) No.	2	Course Coordinator	Harmeet Singh Gill (SEC-A) & Sanpreet Singh (SEC-B)
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MSE	22-04-2024	Roll Number	

Note: Attempt all questions.

Q. No.	Question	COs, RBT level	Marks
Q1	What are the drawbacks of a series inverter?	CO6, L1	2
Q2	How can be output frequency of a cycloconverter be changed?	CO2, L4	2
Q3	Illustrate principle of operation of dual converter? Explain one of its functional methods.	CO3, L2	4
Q4	Explain the operation of single-phase to single-phase, step down cyclo-converter with circuit and waveforms.	CO5, L2	4
Q5	Discuss various control techniques used for chopper.	CO4, L4	4
Q6	Describe modified McMurray half bridge inverter with different operating modes and corresponding waveforms.	CO6, L6	8

Course Outcomes (CO)
Students will be able to

1	Analyze various thyristor family and its commutation techniques
2	Comprehend different single phase power converter circuits.
3	Apprehend three phase power converter circuits.
4	Understand categorization of chopper as per necessity of industrial electronics application.
5	Develop skills to propose cycloconverter circuits for various applications.
6	Understand the use of inverters in commercial and industrial applications.

RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTS)		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

Guru Nanak Dev Engineering College, Ludhiana
Department of Electrical Engineering

Program	B.Tech.	Semester	4th
Subject Code	PCEE-105	Subject Title	Digital Electronics
Mid Semester Test (MST) No.	II	Course Coordinator(s)	Pf. Swapandeep Kaur & Pf. Bhawna
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MST	23rd Apr, 2024	Roll Number	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1	Define 1 bit memory and bistable latch.	CO3, L1	2
Q2	Distinguish between synchronous and asynchronous counters.	CO3, L2	2
Q3	Discuss the working of Dual slope A/D Converter.	CO4, L3	4
Q4	What are shift registers? How do you classify them?	CO3, L4	4
Q5	Explain with logic circuit diagram and truth table the working of clock triggered J-K flip flop.	CO3, L5	4
Q6	Write a note on classification and characteristics of different types of semiconductor memories.	CO5, L4	8

Course Outcomes (CO)
Students will be able to

1	Understand working of logic families and logic gates
2	Design and implement Combinational logic circuits
3	Design and implement Sequential logic circuits
4	Understand the process of Analog to Digital conversion and Digital to Analog conversion
5	Be able to use PLDs to implement the given logical problem
6	Design simple digital electronics based working projects

RBT Classification	Lower Order Thinking Levels (LOTS)			Higher Order Thinking Levels (HOTS)		
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating