

Guru Nanak Dev Engineering College, Ludhiana

Department of Electrical Engineering

Program	B.Tech.(EE)	Semester	4
Subject Code	PCEE-105	Subject Title	DIGITAL ELECTRONICS
Mid Semester Test (MST) No.	1	Course Coordinator(s)	Er. Bhawna & Er. Swapandeep Kaur
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MST	15 th Feb, 2024	Roll Number	2203652

Note: Attempt all questions

Q. No.	Question	COs / RBT level	Marks
Q1	Convert $(750.760)_{10}$ into Hexadecimal number.	CO1, L2	2
Q2	Differentiate between Excess - 3 code and Gray code.	CO2, L2	2
Q3	Realize the basic logic gates using universal gates.	CO2, L1	4
Q4	State De- Morgan's Theorem.	CO1, L1	4
Q5	Explain full Adder using Half Adders with Boolean expression and circuit implementation.	CO2, L4	4
Q6	Minimize the following Boolean expressions using K-map $Y = \bar{A}CD + A\bar{B}\bar{D} + ABCD + \bar{A}BC\bar{D} + A\bar{B}C\bar{D}$	CO3, L5	8

Course Outcomes (CO)

Students will be able to

1	Understand working of logic families and logic gates
2	Design and implement Combination 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)		
	L1	L2	L3	L4	L5	L6
RBT Level Number	L1	L2	L3	L4	L5	L6
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

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Guru Nanak Dev Engineering College, Ludhiana			
Department of Electrical Engineering			
Program	B.Tech.(EE)	Semester	4
Subject Code	PCEE-106	Subject Title	Electrical Machines-II (ASM)
Mid Semester Test (MST) No.	1	Course Coordinator	SamreetKaurBoparai
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MST	16 th Feb 2024	Roll Number	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1 ✓	Describe the behavior of armature reaction when leading load is connected.	CO5, L2	2
Q2	Evaluate the speed of 4pole, 3 phase, 50Hz alternator.	CO5, L5	2
Q3	Illustrate construction of salient pole rotor machine.	CO1, L2	4
Q4	Reframe the phasor diagram of alternator for lagging load	CO6, L5	4
Q5	Evaluate induced emf for an alternator	CO5, L5	4
Q6	Explain emf method of voltage regulation	CO5, L4	8

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)		
	L1	L2	L3	L4	L5	L6
RBT Level Number						
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating

Guru Nanak Dey Engineering College, Ludhiana

Department of Electrical Engineering

Program	B. Tech.(EE)	Semester	4 th
Subject Code	PCEE-107	Subject Title	POWER ELECTRONICS
Mid Semester Exam (MSE) No.	1	Course Coordinator	Harmeet Singh Gill (SEC-A) & Sanpreet Singh(SEC-B)
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MSE	14-02-2024	Roll Number	

Note: Attempt all questions.

Q. No.	Question	COs, RBT level	Marks
Q1	Define String Efficiency.	CO1, L1	2
Q2	Enumerate necessary conditions for turn-on of an SCR?	CO1, L4	2
Q3	Discuss switching characteristics of thyristor with waveshapes.	CO1, L1	4
Q4	Explain Class-D Impulse commutation technique with required waveforms.	CO1, L2	4
Q5	Discuss snubber circuit for thyristor protection.	CO1, L4	4
Q6	Describe single phase half wave phase controlled rectifier with RL load and freewheeling diode having continuous current mode (firing angle 45°). Also derive equations for output voltage and current.	CO2, L6	8

Course Outcomes (CO)

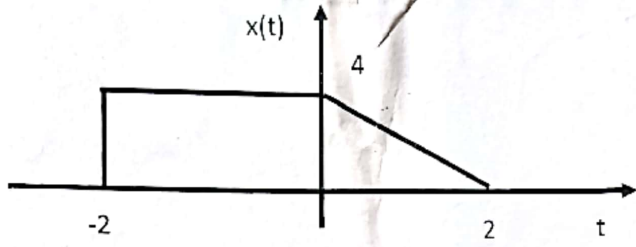
Students will be able to

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

Program	B.Tech.(EEA, EEB)	Semester	4 th
Subject Code	PCEE-108	Subject Title	Signals and Systems
Mid Semester Examination (MSE) No.-01	1	Course Coordinator(s)	Karanbir Singh and Sukhpal Singh
Max. Marks	24	Time Duration	1 hour 30 minutes
Date of MSE	12 th Feb, 2024	Roll Number	

Note: Attempt all questions

Q. No.	Question	COs, RBT level	Marks
Q1'	Define Causal and non-Causal Systems with an example.	CO2, L2	2
Q2	Find the Fundamental time period of signal $x(t) = \sin 22\pi t + \cos 7\pi t$	CO1, L5	2
Q3	Sketch even and odd component of signal $x(t)$: 	CO1, L6	4
Q4	Check whether the system $y(t) = 2x^2(t)$ is linear or non linear.	CO3, L4	4
Q5	Determine energy and power of $x(t) = e^{-at} \cdot u(t)$, $a > 0$	CO3, L5	4
Q6	Explain about basic types of elementary signals in detail with examples.	CO1, L2	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)		
	L1	L2	L3	L4	L5	L6
RBT Level Number						
RBT Level Name	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating