



Shri Shankaracharya Institute of Professional Management & Technology
Department of Electronics and Telecommunication Engineering

Class Test – II Session- July. – Dec, 2021 Month- December

Subject- Design of Electronics Circuit- C028512(028)

Time Allowed: 2 hrs Max Marks: 40

Note: - Attempt any 5 question. All questions carry equal marks.

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Discuss the Working of Schmitt trigger.	[8]	Understanding	CO2
2.	Design and discuss of Low –pass Butterworth Filters.	[8]	Creating & Understanding	CO3
3.	Discuss Divider circuit, Square rooting circuit, RMS detector.	[8]	Understanding	CO2
4.	Design and discuss the binary weighted resistor network.	[8]	Creating & Understanding	CO5
5.	Discuss Successive approximation type A to D Converter.	[8]	Understanding	CO5
6.	Discuss Voltage to time and Voltage to frequency converters.	[8]	Understanding	CO5



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Note: - Attempt any 5 questions .

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Design the Nyquist plot and comment on stability WRT value of (K) of the system. $G(s) = K/S (S+3)(S+5)$	[8]	Apply	2
2.	The peak overshoot value for UFB system having $G(s)=K/S(S+3)$ is to be reduced from 60% to 20% . The system input is a unit step function.	[8]	Apply	2
3.	Derive expression for rise time , peak time , maximum overshoot and settling time for std. Second order system subjected to unit step input. { $0 < \zeta < 1$ }	[8]	Understanding	1
4.	Derive position , velocity and acceleration error coefficients comment on steady state error for type 0,1,2 and 3 system . Also represent in tabular form	[8]	Apply	2
5.	Draw the polar plot for $G(s)=K(S+3)/S^2(s+1)(S+2)$. Also calculate the value of frequencies where the plot crosses real and imaginary axis .	[8]	Understanding	1
6.	$G(s)= 20/(s+1)(s+5)$, UFB system Determine characteristics eq. and all the parameters determining stability and control of the system .	[8]	Understanding	1

Note: - Attempt any 5 questions .

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Class Test – II Session- July-Dec, 2021 Month- November

Se Sem- ET&T 5th Subject- Microcontroller & Embedded System - C028513(028)

Time Allowed: 2 hrs Max Marks: 40

Note: - attend any 5.

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Write Short notes on : a. GPIB (IEEE488). b. MAX 232 driver	[8]	Understanding	CO3
2.	Write an ALP in which 8051 reads the data from P1 and writes it to P2 Continuously while giving a copy of it to the serial com port to be transferred serially. Assume XTAL=11.0592 MHz Set the baud rate at 19200. Use interrupt.	[8]	Apply	CO2
3.	In the Circuit shown in fig connect a switch SW to pin P0.0 . WAP to do the following – (a) when SW=0, the DAC O/P gives up square wave form. (b) When SW=1, the DAC O/P gives up triangular waveform.	[8]	Apply	CO3
4.	Interface ADC 0848 with 8051 and also write assembly language program for selecting channel to as analog input.	[8]	Apply	CO4
5.	What is difference between polling and interrupt explain types of interrupt.	[8]	Understanding	CO3
6.	WAP to monitor the switch and perform the following (a) if switch=0, send a msg "HELLO" (b) If switch=1, send a msg "GOOD BYE" (c) Assume that switch is connected to pin 2.0 & baud rate is 9600.	[8]	Apply	CO3



Shri Shankaracharya Institute of Professional Management & Technology
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Class Test – II Session- July – Dec, 2021 Month- December
Sem- ET 5th Subject- Digital Communication - C028511(028)
Time Allowed: 2 hrs Max Marks: 40

Note: - Attempt Both the question. Each Question has 4 parts. Part a is compulsory. Attempt any 2 out of b, c and d.

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1				
a.	Draw the following data format for the bit stream 1100110 i) Polar NRZ ii) Unipolar RZ iii) AMI iv) Manchester	4	Apply	CO3
b.	Write a short note on Scrambling. Give example to explain scrambling	8	Understanding	CO3
c.	Derive the expression for PSD of Polar Signalling and also draw its characteristics	8	Apply	CO3
d.	Explain Direct Sequence Spread Spectrum transmitter and Receiver with the help of a block diagram	8	Understanding	CO5
2				
a.	Draw the waveform of ASK , PSK and FSK. For data 101101	4	Understanding	CO4
b.	Explain the generation and detection of QPSK along with block diagram and waveform.	8	Understanding	CO4
c.	Explain acquisition of an FH signal	8	Understanding	CO5
d.	Explain in detail with an example DPSK Transmitter and Receiver.	8	Understanding	CO4



Shri Shankaracharya Institute of Professional Management & Technology
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Class Test – II Session- July – Dec, 2021 Month- December
m- ET&T 5th Subject- Advanced Data Structures and Algorithms- C022535(022)
Time Allowed: 2 hrs Max Marks: 40

Note: - Attempt any 5 question. All questions carry equal marks.

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Explain PRIM's algorithm with example	[8]	Understanding/Apply	CO3
2.	Explain graph traversal algorithm with example. Which data structure is used by B.F.S and D.F.S	[8]	Understanding/Apply	CO3
3.	Explain with the help of an example Kruskal algorithm.	[8]	Understanding/Apply	CO3
4.	Explain warshall algorithm to find the shortest path in a graph.	[8]	Understanding	CO3
5.	Explain Quick sort. Consider the following array and sort it using quick sort method. 24, 56, 47, 35, 10, 90, 82, 31	[8]	Apply	CO4
6.	Explain Quick sort. Consider the following array and sort it using quick sort method. 40, 47, 15, 24, 8, 29, 72, 33	[8]	Understanding/Apply	CO4



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Class Test – II Session- July – Dec, 2021 Month- December
m- ET&T 5th Subject- Advanced Data Structures and Algorithms- C022535(022)
Time Allowed: 2 hrs Max Marks: 40

Note: - Attempt any 5 question. All questions carry equal marks.

Q. NO.	Questions	Marks	Levels of Bloom's taxonomy	COs
1.	Explain PRIM's algorithm with example	[8]	Understanding/Apply	CO3
2.	Explain graph traversal algorithm with example. Which data structure is used by B.F.S and D.F.S	[8]	Understanding/Apply	CO3
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5.	Explain Quick sort. Consider the following array and sort it using quick sort method. 24, 56, 47, 35, 10, 90, 82, 31	[8]	Apply	CO4
6.	Explain Quick sort. Consider the following array and sort it using quick sort method. 40, 47, 15, 24, 8, 29, 72, 33	[8]	Understanding/Apply	CO4