

## BSc Sem.-4 Examination

CC-205

Electronics

April 2022

Time : 2-00 Hours]

[Max. Marks : 50

**Instructions: All questions in Section –I carry equal marks.****Attempt any Three questions in Section-I.****Questions IX in Section-II Attempt any Eight .****Section-I**

I A	Define Laplace transforms. Find the Laplace transform F(S) of given function (i) $f(t) = e^{-at}$ (ii) $f(t) = t$	7
B	Find the Laplace transform of (i) Second derivative $\frac{d}{dt} \left  \frac{d}{dt} f(t) \right $ (ii) Integral $\int_0^t f(t) dt$	7
II A	Derive the step response of series RLC circuit.	7
B	Find the inverse Laplace transform of the following F(S). (i) $\frac{2s+3}{s^2+3s}$ (ii) $\frac{3s^2+4}{s(s^2+4)}$	7
III A	Evaluation of Fourier Coefficients $a_0$ $a_n$ and $b_n$	7
B	Define Fourier Transform and find the spectrum envelope for rectangular pulse	7
IVA	Writ the relationship of Fourier and Laplace Transform	7
B	Find the Fourier Transform of the given function (i) Impulse function $\delta t$ (ii) Exponetial function $e^{-at}$	7
V A	What is flip flop? Discuss the clocked NAND gate RS working with truth table.	7
B	Discuss the working positive edge triggered JK flip flop	7
VI A	Discuss flip flop as finite state Machine. Draw the state transition diagram of S R and J K flip flop.	7
B	What is Register? Write the types of registers and working of SISO register.	7
VII A	Draw the diagram of 8085 bus structure and discuss Data bus, Address bus and control bus.	7
B	What is memory? Discuss memory classification.	7
VIII A	Compare peripheral-Mapped I/O with Memory-Mapped I/O.	7

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B	Write the short note on buffer and decoder.	7
<b>Section II</b>		
<b>Q IX</b>	<b>Write any eight short Answer</b>	<b>8</b>
(i)	What is the Laplace transform of $e^{at}$	
(ii)	What is the Laplace of $\sin \omega t$	
(iii)	What is the condition JK flip flop toggle	
(iv)	Write the truth table of D flip flop	
(v)	What is the Laplace of $\cos \omega t$	
(vi)	What is Fourier transform of $\delta t$	
(vii)	What is Fourier transform of 1	
(viii)	Write Fourier transform of $\sin \omega t$	
(ix)	What is the memory size of 8085	
(x)	Write IC number of JK flipflop	
(xi)	How many address line in 8085	
(xii)	What is the range of 8-bit data bus	
(xiii)	Full form of EEPROM	
(xiv)	How may flag in 8085?	
(xv)	How many interrupt in 8085?	
(xvi)	What is ALE in 8085?	

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