International Islamic University Chittagong
Department of Electrical and Electronic Engineering

Final Assessment of Autumn-2020	Program: B.Sc. Engg. (EEE)
Course Code: EEE-3501	Course Title: Continuous & Linear System
Time: **5 hours** (Writing -**4 hours 30 minutes** + **30 minutes** submission time)	Full Marks: **50** (**Written** 30 + **Viva/Viva-Quiz**-20)

[Answer **each of the** questions from the followings; Figures in the right margin indicate full marks. **Answer script must be submitted through online method within 5 hours from starting time. Also, write down the Q. Set on the front page of your answer script**]
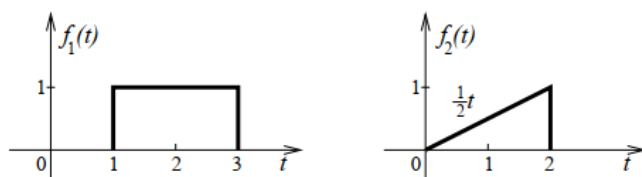
Q. Set-A

Fig.1

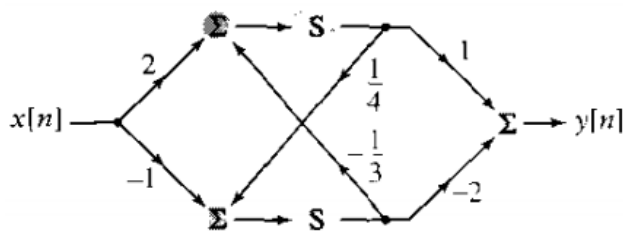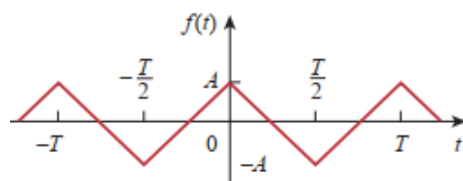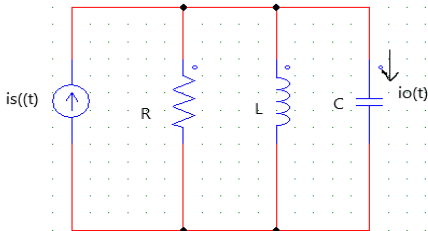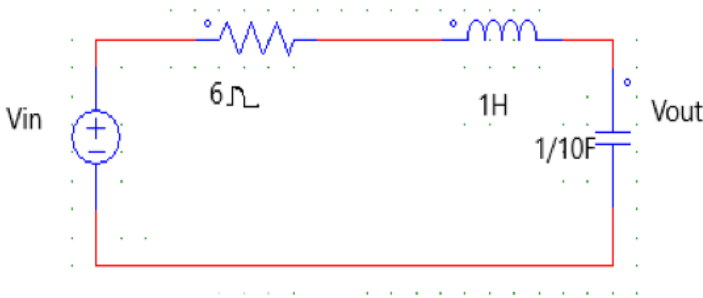|				
1(a).	Determine the convolution of two signals in Fig.1.	CO2	E	03
1(b).	Determine a state variable description for the discrete system shown in Fig.2.	CO2	E	03

Fig.2

Fig.3

2(a).	Evaluate the Fourier series of the function in Fig.3. Assume the values of A and T of your own choice.	CO2	E	03
2(b).	Draw the amplitude and Phase spectra of the function in Fig.3.	CO2	U	03

Fig.4

3(a).	Evaluate the transfer function for the circuit in Fig.4. Assume the values of R, L & C of your own choice.	CO2	E	02
3(b).	Determine the inverse Fourier transform of $$F(\omega) = \frac{1 - j\omega}{\omega^2 - 7j\omega - 10}$$	CO2	E	02
3(c).	Explain the importance of Fourier transform.	CO2	E	02

Fig.5

4(a).	Transfer the circuit of Fig.5 from t domain to s domain.	CO2	R	02
4(b).	Determine the output voltage $v_o(t)$ of the circuit in Fig.5. Given, $v_{in}(t)=e^{-t}u(t)$, R= 6Ω, L= 1H, $C = \frac{1}{10}$F.	CO2	E	04
5(a).	If a 10MHz carrier is modulated by a 5KHz intelligent signal, determine the frequencies of three components of AM signal that results. Also draw the frequency spectrum of the AM signal.	CO2	E	02
5(b).	Differentiate between TDM and FDM.	CO2	R	02
5(c).	Explain network stability.	CO2	E	02
6.	Viva/Viva-Quiz: The time of viva/viva-quiz will be declared in Google classroom.		R	20