G.PULLAIAH COLLEGE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with 'A' grade of UGC, Approved By AICTE, New Delhi., Affiliated to JNTUA, Ananthapuramu

II B.Tech I SEMESTER (R15) I MID TERM EXAMINATIONS – SEP-2017

ELECTRICAL CIRCUITS - II(15A02301)

(ELECTRICAL AND ELECTRONICS ENGINEERING)

1

Time: 90Minutes   Max Marks: 30**Date: 05-09-2017**

Part A - Compulsory question

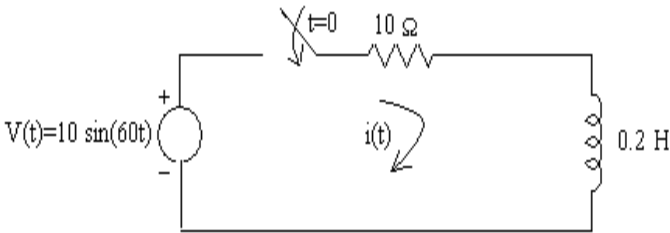|		Question	Marks	Unit	CO	Cognitive level
1.	(A)	Draw the circuit of RL and RC High pass filter	2	I	C218.1	Remember
	(B)	Write the expression for Time Shifting property in relation to Fourier series	2	I	C218.1	Apply
	(C)	Write the limitations of pspice	2	I	C218.1	Remember
	(D)	Write the condition to be satisfied by a constant k filter	2	II	C218.1	Remember
	(E)	Express dirichlet 's condition	2	II	C218.1	Remember
	Part B – Answer one from 2 or 3 and one from 4 or 5					
2.		A 50 Hz, 400 V (peak value) sinusoidal voltage is applied at t = 0 to a series RL circuit having resistance 5 ohms and inductance 0.2 mH. Obtain an expression for current at any instant 't', calculate the value of transient current 0.001 sec after switching ON.	10	I	C218.1	Analyze
3.		Discuss about the variation of attenuation, phase shift and characteristic impedance of m derived high pass filter.	10	I	C218.1	Analyze
4.		Derive the Fourier transform of a single rectangular pulse of width τ and height A.	10	II	C218.5	Analyze
5.		Obtain the expression for i(t) for a series RC circuit when exited by a pulse source of Width 'a 'using Laplace transform method	10	II	C218.5	Analyze

Signature of FACULTY   Signature of HOD

G.PULLAIAH COLLEGE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with 'A' grade of UGC, Approved By AICTE, New Delhi., Affiliated to JNTUA, Ananthapuramu

II B.Tech I SEMESTER (R15) I MID TERM EXAMINATIONS – SEP-2017

ELECTRICAL CIRCUITS - II (15A02301)

(ELECTRICAL AND ELECTRONICS ENGINEERING)

2

Time: 90Minutes   Max Marks: 30   **Date: 05-09-2017**

Part A - Compulsory question

		Question	Marks	Unit	CO	Cognitive level
1.	(A)	What do you mean by the term filter? List the types of filters	2	II	C218.1	Remember
	(B)	Draw the circuit of RL and RC Low pass filter	2	I	C218.1	Apply
	(C)	Write the limitations of pspice	2	II	C218.1	Remember
	(D)	Express Z_{0T} in terms of Z_{SC} and Z_{OC}	2	I	C218.1	Remember
	(E)	Explain in brief variation of characteristic impedance in pass band and stop band.	2	II	C218.1	Apply

Part B – Answer one from 2 or 3 and one from 4 or 5

		Marks	Unit	CO	Cognitive level
2.	A series RL circuit is shown in figure below. If the switch 'K' in the circuit is closed at t=0, Find an expression for i (t).	10	I	C218.1	Analyze
3.	Design a m-derived low filter with a design impedance of 300Ω and the cut off frequency at 2 KHz and infinite attenuation at 2345Hz.	10	I	C218.1	Analyze
4.	Derive the Fourier series of a half wave rectifier by drawing a neat wave form.	10	II	C218.5	Analyze
5.	Derive the expression of characteristic impedance for both T&π networks	10	II	C218.5	Analyze

Signature of FACULTY   Signature of HOD

G.PULLAIAH COLLEGE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with 'A' grade of UGC, Approved By AICTE, New Delhi., Affiliated to JNTUA, Ananthapuramu

II B.Tech I SEMESTER (R15) I MID TERM EXAMINATIONS – SEP-2017

ELECTRICAL CIRCUITS - II (15A02301)

(ELECTRICAL AND ELECTRONICS ENGINEERING)

GPCET Pioneering Innovative Education

3

Time: 90Minutes   Max Marks: 30   **Date: 05-09-2017**

Part A - Compulsory question

		Question	Marks	Unit	CO	Cognitive level
1.	(A)	Draw the frequency response of high pass filters.	2	I	C218.1	Remember
	(B)	Write short notes on dirichlet's conditions for Fourier series.	2	I	C218.1	Apply
	(C)	Define the term Decibel	2	I	C218.1	Remember
	(D)	Define time constant	2	II	C218.1	Remember
	(E)	Explain about phase spectra	2	II	C218.1	Remember

Part B – Answer one from 2 or 3 and one from 4 or 5
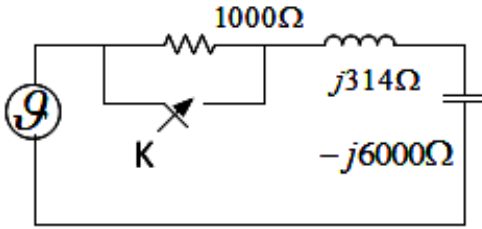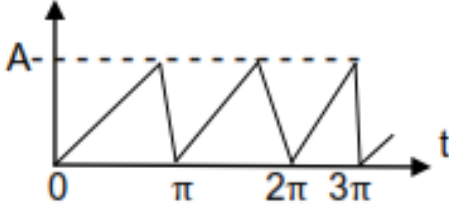
	Question	Marks	Unit	CO	Cognitive level
2.	Obtain the expression for i(t) for a series RL circuit when exited by a source of V(t)=Vm sin (wt+Ɵ) using Laplace transform	10	I	C218.1	Analyze
3.	**A)**Categorize filters and explain in brief about m-derived High pass filter	5	I	C218.1	Analyze
	B)Design a m-derived low pass filter with a design impedance of 500Ω and the cut off frequency at 5 KHz and infinite attenuation at 5365Hz.	5			
4.	Derive the Fourier series of a square wave drawing a neat wave form.	10	II	C218.5	Analyze
5.	A series RL circuit with R= 50 Ω and L=0.2 H has a sinusoidal voltage source V=150 sin(500 t) volts applied at t=0 Find the expression for total current.	10	II	C218.5	Analyze

Signature of FACULTY   Signature of HOD

G.PULLAIAH COLLEGE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with 'A' grade of UGC, Approved By AICTE, New Delhi., Affiliated to JNTUA, Ananthapuramu

II B.Tech I SEMESTER (R15) I MID TERM EXAMINATIONS – SEP-2017

ELECTRICAL CIRCUITS - II (15A02301)

(ELECTRICAL AND ELECTRONICS ENGINEERING)

4

Time: 90Minutes   Max Marks: 30   **Date: 05-09-2017**

Part A - Compulsory question

		Question	Marks	Unit	CO	Cognitive level
1.	(A)	What are the disadvantages of constant – k filters	2	I	C218.1	Remember
	(B)	Mention the frequency limits of low and high pass filters	2	I	C218.1	Apply
	(C)	Write the expressions for Fourier coefficients?	2	I	C218.1	Remember
	(D)	Define the term neper	2	II	C218.1	Remember
	(E)	Define time constant	2	II	C218.1	Remember

Part B – Answer one from 2 or 3 and one from 4 or 5

		Marks	Unit	CO	Cognitive level
2.	With the switch open steady state is reached with V =100 sin 314 t volts. The switch is closed at t=0.The circuit is allowed to come to steady state again. Determine steady state current and complete solution of transient current.	10	I	C218.1	Analyze
3.	Determine the Fourier series of the given wave form.	10	I	C218.1	Analyze
4.	Explain about PSPICE Programming in detail.	10	II	C218.5	Understand And remember
5.	Design a Composite low pass filter with a design impedance of 600Ω and the cut off frequency of 2 KHz and infinite attenuation at 2100 Hz	10	II	C218.5	Analyze

Signature of FACULTY   Signature of HOD