Vivekananda College of Engineering & Technology,Puttur [A Unit of Vivekananda Vidyavardhaka Sangha Puttur ®] Affiliated to VTU, Belagavi & Approved by AICTE New Delhi			
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CONTINUOUS INTERNAL EVALUATION - 1

Dept: FY	Sem / Div: **1'F'**	Sub: **Basic Electronics & Communication Engineering**	S Code: **21ELN14**
Date: 20.01.2022	Time: 9:30-11:00 am	Max Marks: 40	Elective: N

Note: Answer any 2 full questions, choosing one full question from each part.

QN		Questions	Marks	RBT	CO's
		PART A			
1	a	Describe various electronic units of a d.c. power supply with a neat block diagram.	8	L2	CO1
	b	What are the different types of amplifiers.	8	L3	CO1
	c	A mains transformer having a turns ratio of 44:1 is connected to a 220 V_{rms} mains supply. If the secondary output is applied to a half-wave rectifier, determine the peak voltage that will appear across a load.	4	L3	CO1
		OR			
2	a	Discuss the working of Bridge rectifier with R-C smoothing filter using a neat diagram and wave-forms. The R–C smoothing filter in a 50 Hz mains operated half-wave rectifier circuit consists of R_1= 100 Ω and C_2= 1,000 μF. If 1 V of ripple appears at the input of the circuit, determine the amount of ripple appearing at the output.	8	L2	CO1
	b	Discuss operational amplifier parameters. i) Open-loop voltage gain	8	L3	CO1

		ii) Closed-loop voltage gain iii)Input resistance iv)Output resistance v) Input offset voltage vi)Slew rate.			
	c	Explain Voltage Regulator.	4	L3	CO1
		PART B			
3	a	Derive an expression for overall gain of an oscillator with positive feedback.	8	L3	CO1
	b	Illustrate operational amplifier circuit – i) Differentiator circuit ii) Integrator circuit iii) Comparator circuit	8	L2	CO1
	c	An amplifier with a gain of 8 has 10% of its output fed back to the input (i.e. $\beta = 0.1$). Determine the gain of the stage (a) with negative feedback, (b) with positive feedback.	4	L2	CO1
		OR			
4	a	What are oscillators? Explain conditions for oscillations. Also, explain Wien bridge oscillator with circuit diagram and expression for frequency of oscillation.	8	L3	CO1
	b	What are multivibrators? Illustrate single-stage astable multivibrator using operational amplifier.	8	L2	CO1
	c	Explain Crystal controlled oscillator.	4	L2	CO1

Prepared by: SHRUTHI P R

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