

Vivekananda College of Engineering & Technology, Puttur

[A Unit of Vivekananda Vidyavardhaka Sangha Puttur ®]

Affiliated to VTU, Belagavi & Approved by AICTE New Delhi

CRM08

Rev 1.10

<EC>

<12/01/2022>

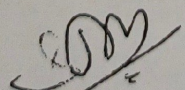
CONTINUOUS INTERNAL EVALUATION - 1

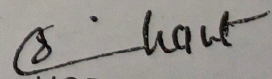
Dept: FY	Sem / Div: 1'F'	Sub: Basic Electronics & Communication Engineering	S Code: 21ELN14
Date: 20.01.2022	Time: 9:30-11:00 am	Max Marks: 40	Elective: N

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 $R_1 = 100 \Omega$ and $C_2 = 1,000 \mu F$. 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


HOD