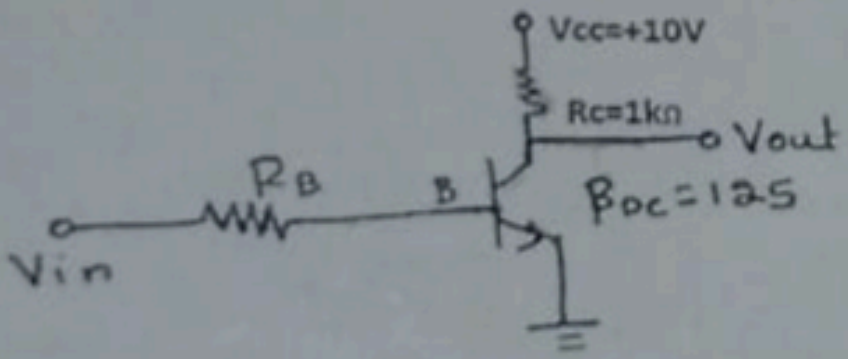
Approved by AICTE New Delhi

CONTINUOUS INTERNAL EVALUATION - 2

Dept: FY	Sem / Div: I D/E/F	Sub: Basic Electronics	S Code:18ELN14
Date:06/3/2021	Time:9:30-11:00 am	Max Marks: 50	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	Explain the operation of enhancement type of MOSFET with a neat circuit diagram.	6	L2	CO2
	b	Explain op-amp as integrator with a neat circuit diagram.	7	L2	CO3
	c	Explain different input modes of an op-amp.	6	L2	CO3
	d	The transistor in CE configuration with Rc=1kΩ, βdc=125 . Determine 1.Vce at Vin=0V 2.Ib(min) to saturate the collector current. 3. Rb(max) when Vin=8V. Vce(sat) can be neglected.	6	L2	CO1



OR

2	a	Explain CMOS as inverter with a neat circuit diagram With its advantages.	8	L2	CO
	b	Explain the following terms with respect to op-amp. 1.CMRR 2. Slew rate 3. Input bias current 4. PSRR	8	L2	CO

	c	Explain the drain and transfer characteristics of a n-channel JFET with neat circuit diagram.	8	L2	CO
	d	Show that the ripple factor of a half-wave rectifier is 1.21 and efficiency is 40.5%	5	L3	CO

PART B

3	a	Explain with neat circuit diagram and waveform, the working of center-tap full wave rectifier. Show that efficiency of full-wave rectifier is 81%.	8	L2	CO
	b	A Zener diode has a breakdown voltage of 10V. It is supplied from a voltage source varying between 20-40V in series with a resistance of 820Ω. Using an ideal Zener model, obtain the minimum and maximum Zener currents.	6	L3	CO
	c	Explain the functional block diagram of 78XX series voltage regulator.	6	L2	CO1
	d	For a n-channel JFET if I_{DSS} = 9 mA V_P = - 6V. Calculate I_D at V_{GS} = - 4V and V_{GS} at I_D = 3 mA.	5	L3	CO2

OR

4	a	Explain how zener diode helps in voltage regulation with neat circuit diagram	8	L2	CO1
	b	A full wave rectifier uses 2 diodes having internal resistance of 20Ω each. The transformer rms secondary voltage from center to each end is 50V. Find Im, Idc, Irms, and Vdc if the load is 980Ω.	6	L3	CO1
	c	Explain the operation of half-wave rectifier with capacitor filter with neat circuit diagram and waveform.	6	L2	CO1
	d	For a JFET I_{DSS} = 9 mA and $V_{GS(off)}$ = - 8V. Determine drain current for V_{GS} = - 4V and V_{GS} = - 6V	5	L3	CO2

Naveena C 29/01/21

Prepared by: Naveena C

HOD 29/01/21