



<b>ID NO.</b>	
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**PRESIDENCY UNIVERSITY, BENGALURU**  
**SCHOOL OF ENGINEERING**

Weightage: 40 %

Max Marks: 80

Max Time: 2 hrs.

7 May 2018, Monday

**ENDTERM FINAL EXAMINATION MAY 2018**

Even Semester 2017-18 Course: **ECE/EEE 206 Linear Integrated** IV Sem. ECE/EEE  
**Circuits**

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**Instructions:**

- (i) Read the question properly and answer accordingly.
  - (ii) Question paper consists of 3 parts.
  - (iii) Scientific and Non-programmable calculators are permitted
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**Part A**

(4 Q x 5 M = 20 Marks)

1. Design a monostable multivibrator circuit to get a pulse of 1ms
2. Define lock in range, capture range, pull in time
3. Explain how LM723 can be used as low voltage regulator
4. Explain the working of inverting comparator circuit.

**Part B**

(3 Q x 10 M = 30 Marks)

5. With a neat block diagram explain the working of Phase Locked loop.
6. Explain the working of Full wave rectifier
7. What are analog multipliers? List the types. Explain any two applications

**Part C**

(2 Q x 15 M = 30 Marks)

8. Explain the operation of successive approximation and ramp ADC
9. Explain the operation of 555 timer functional diagram configured as Astable multivibrator if  $C=0.01\mu\text{f}$ ,  $R_A=33\text{K}\Omega$ ,  $R_B=33\text{K}\Omega$  find  $T_{on}$ ,  $T_{off}$ , Duty cycle, frequency of output waveform



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Max Time: 1 hr.

26 March Monday 2018

**TEST – 2**

**SET B**

Even Semester 2017-18 Course: **ECE/EEE 206 Linear Integrated Circuits** IV Sem. ECE/EEE

**Instruction:**

- (i) Read the question properly and answer accordingly.
- (ii) Question paper consists of 3 parts.
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**Part A**

(3 Q x 5 M = 15 Marks)

1. Describe the principle of operation of oscillator. State Barkhausen criteria for sustained oscillation
2. Explain the difference between LPF and HPF
3. Design a second order Low pass filter for a cutoff frequency of 1.59KHz and passband gain of 1.586. assume  $C=0.01\mu$

**Part B**

(2 Q x 8 M = 16 Marks)

4. What is the necessity of precision rectifiers? With a neat circuit diagram and waveforms explain the working of HWR designed using single diode, What is the limitation of HWR with single diode
5. Explain the working of RC Phase shift oscillator with the help of circuit diagram waveform and equations. Design a RC Phase shift oscillator to generate a sinusoidal signal of 1KHz. Assume  $C=0.05\mu$ .

**Part C**

(1Q x 9 M = 9 Marks)

6. What is the meaning of first order filter? Explain first order high pass filter with the help of neat circuit diagram, frequency response curve. Derive the expression for gain. Also mention what is the cutoff frequency and pass band gain of the filter.

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21 Feb Wednesday 2018

**TEST – 1**

Even Semester 2017-18

Course: **ECE/EEE 206 Linear Integrated Circuits**

IV Sem. ECE/EEE

**Instruction:**

- (i) Read the question properly and answer accordingly.
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**Part A**

(4 Q x 4 M = 16 Marks)

1. List any 4 ideal characteristics of Op-Amp
2. Explain the pin configuration of 741 IC
3. Define CMRR and input bias current
4. For the circuit shown in fig (1). Find the output voltage  $V_o$ . Assume op-amp is 741 with supply voltage of  $\pm 15V$

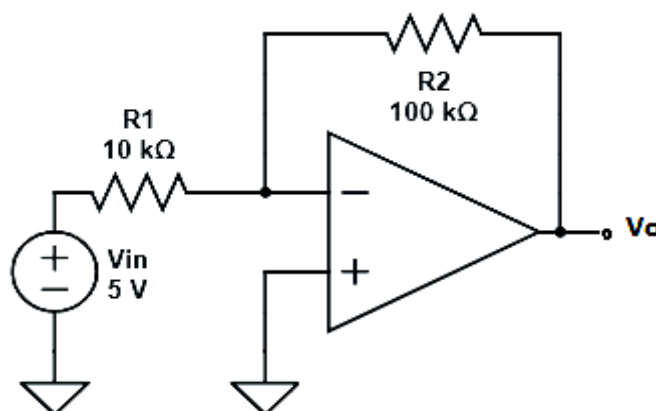


Fig (1)

### Part B

(2 Q x 8 M = 16 Marks)

5. For the opamp circuit shown in fig (2).find the output voltage.

- With  $V_{in}=5 \times 10^{-6} \sin \omega t$
- With  $V_{in} = 5 \sin \omega t$

Draw input and output waveforms. Assume Op-Amp is 741 with supply voltage of  $\pm 15V$  and gain  $2 \times 10^5$ .

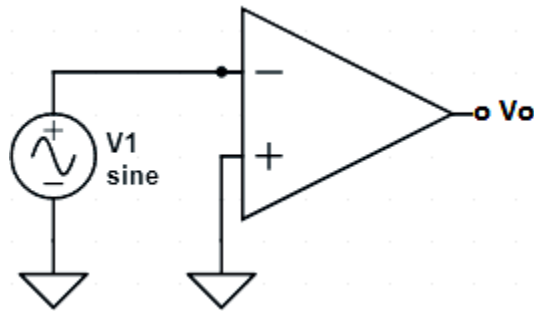


Fig (2).

6. Explain Integrator circuit using op amp. Derive the expression for output voltage.

### Part C

(1Q x 8 M = 8 Marks)

7. Find the output of the op-amp circuit shown in fig (3).

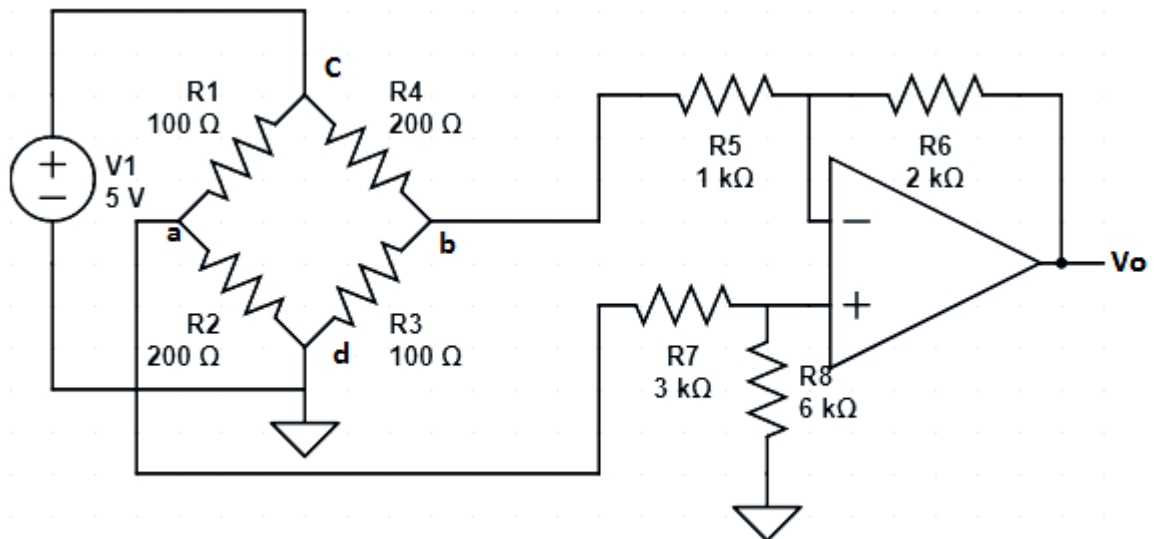


Fig (3).