Seat No.

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MAR_APR 2026 SUMMER EXAMINATION

1154 B.Tech. CBCS

Sub. Name: Linear integrated Circuits

Sub. Code: 79182/79470

Day and Date: Saturday ,23-05-2026 **Total Marks: 70**

Time: 10:30 AM To 01:00 PM

Instructions:
1. **All questions are compulsory**
2. **Assume suitable data wherever necessary and mention it boldly**
3. **Draw neat labelled diagrams wherever necessary**
4. **Figures to the right indicate full marks**
5. **Use of Scientific calculator is allowed**

Q1) Solve following MCQ. **[14]**

i. Which of the following is/are ideal characteristics of op-amp
- A. Zero Bandwidth
- B. Infinite Bandwidth
- C. Limited Bandwidth
- D. None of the above

ii. Which of the following belong to op-amp IC/ICs
- A. IC 741
- B. IC 714
- C. IC 351
- D. All of the above

iii. Unity gain amplifier is also called as .....
- A. voltage follower
- B. voltage doubler
- C. voltage divider
- D. voltage multiplier

iv. Which of the following is/are applications of op-amp
- A. Oscillators
- B. Rectifiers
- C. Amplifiers
- D. All of the above

v. Determine the order of filter used, when the gain increases at the rate of 60dB/decade on the stop band.
- A. Third-order High pass filter
- B. Third-order Low pass filter
- C. First-order low pass filter
- D. Second-order low pass filter

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vi. If Barkhausen criterion is not fulfilled by an oscillator circuit, it will .....
A. stop oscillating
B. produce damped waves continuously
C. become an amplifier
D. produce high frequency whistles

vii. At which state the phase-locked loop tracks any change in input frequency?
A. Free running state
B. Capture state
C. Phase locked state
D. All of the mentioned

Q2) Answer Any TWO. **[14]**

a. Illustrate Thermal Drift and Current mirror circuits **[7]**

b. Compare the frequency response of open loop and closed loop op-amp configuration. **[7]**

c. Draw and explain schmitt trigger using IC741 with waveforms **[7]**

Q3) Answer Any TWO. **[14]**

a. Explain the following a) CMRR b) Input offset voltage **[7]**

b. Design non-inverting amplifier with gain 120 and input resistance is 5KΩ. Draw the neat circuit diagram. **[7]**

c. Apply basic comparator circuit to interpret Zero Crossing Detector **[7]**

Q4) Answer Any TWO. **[14]**

a. With neat circuit diagram explain Low Pass filter with its frequency response **[7]**

b. Explain square wave generator circuit using OP-AMP **[7]**

c. Explain mono stable multi vibrator using IC555 **[7]**

Q5) Answer Any TWO. **[14]**

a. Explain Wein Bridge Oscillator using Op-amp. **[7]**

b. Design a wide band pass filter with fL =200Hz, fH= 1kHz and a pass band gain = 4. Draw the frequency response plot and calculate Q **[7]**

c. Draw internal structure of IC 555 and explain it in detail. **[7]**

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End Of Question Paper

Important Note for Chief Exam Officer / SRPD Coordinator / Sr Supervisor/ Student -
This Question Paper may be distributed for following Subjects as common code.
सदरची प्रश्नपत्रिका खालील विषयांकरिता वितरित करता येईल.

1] (1154) B.Tech. CBCS (79182) Linear integrated Circuits Part 2 SEM 4
2] (101) Bachelor of Engineering (79470) Linear integrated Circuits Part 2 SEM 4

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