



## GOVERNMENT COLLEGE OF ENGINEERING, JALGAON

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Name of Examination : **Summer 2021** - (Preview)

Course Code & Course Name : **ET252U - Linear Integrated Circuits and Applications**

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Maximum Marks : **60**

Duration : **3 Hrs**

[Edit](#) [Print](#) [View Answer Key](#) [Close](#) **Answer Key Submission Type:** Marking scheme with model answers and solutions of numerical

Instructions:

1. All questions are compulsory.
2. Illustrate your answer with suitable figures/sketches wherever necessary.
3. Assume suitable additional data; if required.
4. Use of logarithmic table, drawing instruments and non programmable calculators is allowed.
5. Figures to the right indicate full marks.

### 1) Attempt ALL Questions

- A) Explain Basic building block diagram of op-amp. [6]
- B) Explain following Op-amp parameters [6]
- i) Input bias current
  - ii) Input offset voltage
  - iii) Slew Rate

### 2) Attempt Any Two Questions

- A) Find out output voltage expression for Integrator circuit. [6]
- B) Draw Instrumentation amplifier and find out output voltage expression for it. [6]
- C) Draw and explain grounded load Voltage to current convertor [6]

### 3) Attempt Any Two Questions

- A) Explain Inverting and non-inverting comparator. [6]
- B) Explain working of IC 555 in Astable mode. [6]
- C) Explain working of Full wave Precision Rectifier. [6]

### 4) Attempt Any Two Questions

- A) Find out voltage gain expression for first order Low pass Butterworth filter. [6]
- B) Design a Band pass filter having pass band gain of 4 and pass band frequencies as 200Hz- 1000Hz. [6]
- C) Design 2<sup>nd</sup> order butterworth High Pass filter having cut off frequency of 1KHz. [6]

### 5) Attempt All Questions

- A) Find out expression for output frequency of Wien Bridge Oscillator [6]
- B) Explain working of PLL in detail. [6]

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