

Roll No.

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007302**Mar. 2022****B.Tech. (EL) III SEMESTER
Analog Electronics Circuits (ELPC-302)**

Time : 90 Minutes]

[Max. Marks : 25

Instructions :

1. *It is compulsory to answer all the questions (1 mark each) of Part-A in short.*
2. *Answer any three questions from Part-B in detail.*
3. *Different sub-parts of a question are to be attempted adjacent to each other.*

PART-A

1. (a) Define ripple factor. (1)
- (b) Why Zener diode is used as a voltage regulator? (1)
- (c) Why the BJT is called a current controlled device? (1)
- (d) What do you understand by thermal runaway? (1)
- (e) Whether the MOSFET is voltage controlled or current controlled device? Why? (1)
- (f) Define CMMR. (1)

- (g) Define slew rate. (1)
- (h) What the applications of integrators? (1)
- (i) Define a precision rectifier? (1)
- (j) Define the Q point of a transistor? (1)

PART-B

2. Draw the frequency response of CE amplifier and explain why the gain falls at very high and very low frequency. (5)
3. Explain the construction and working of enhancement type MOSFET with neat diagram. (5)
4. With neat sketch diagram explain the operation of an instrumentation amplifier and derive the voltage gain expression. What are its advantages? (5)
5. Draw the neat sketch diagram of RC phase shift oscillator and derive its frequency of oscillations. (5)
6. How the triangular wave can be generated using op-amp? (5)