

Roll No.

OLE-3041
B. Tech. 3rd Semester (EE)
Examination – April, 2021

ANALOG ELECTRONICS

Paper : PCC-EE-205-G

Time : Three Hours]

[Maximum Marks :75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Students have to attempt *five* questions in total, first *one* being *compulsory* and selecting *one* from each Section.

1. (a) Explain I-V characteristics of a diode.
- (b) Write about full wave rectifier.
- (c) Write a note on 'MOSFET as an amplifier'.
- (d) Discuss input and output impedences.

- (e) Discuss transconductance.
- (f) What are differential amplifiers ?
- (g) What are the properties of negative feedback ?
- (h) What are inverting and non- inverting amplifier ?
- (i) Write about lag/lead compensator'.
- (j) What is Monoshot ? 1.5 × 10

SECTION – A

- 2.** Write about : 7.5 × 2
 - (i) Zener diodes
 - (ii) Common base & common collector amplifiers
- 3.** Discuss structure and characteristics of BJT. Also explain BJT as an amplifier and a switch. 15

SECTION – B

- 4.** Explain MOSFET structure and its I-V characteristics. How a MOSFET works as a switch ? 15
- 5.** Discuss common-source, common-gate and common-drain amplifiers. 15

SECTION – C

6. (a) What is the effect of finite open loop gain and bandwidth on circuit performance ? 7.5
(b) What is BJT differential pair ? 7.5
7. (a) Explain a general feedback system. 7.5
(b) Discuss four basic feedback topologies. 7.5

SECTION – D

8. Write & explain P, PI & PID Controllers along with their applications and the advantages and disadvantages. 15
9. Write a note on any *three* : 15
- (i) Hysteretic comparator
 - (ii) Zero Crossing Detector
 - (iii) Precision rectifier
 - (iv) Peak detect
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