

Date: 21/11/2016.

Exam No: _____

GANPAT UNIVERSITY
B.TECH SEM III (ELECTRICAL)
REGULAR EXAMINATION NOV-DEC 2016
2EE303: ANALOG ELECTRONICS

TIME: 3 HRS

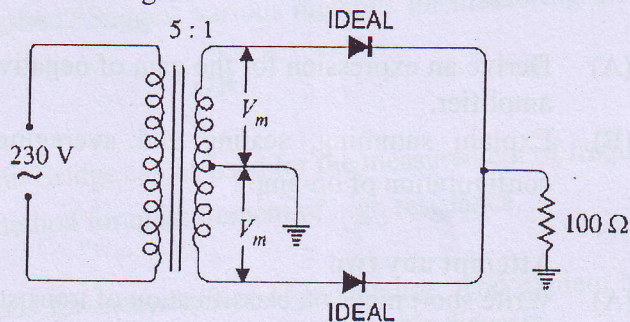
TOTAL MARKS: 60

- Instruction:
- (1) This Question paper has two sections. Attempt each section in separate answer book.
 - (2) Figures on right indicate marks.
 - (3) Be precise and to the point in answering the descriptive questions.

SECTION-I

Q. 1

- (A) Explain 1-phase half wave rectifier with R-L load. [05]
- (B) In the Centre-tap circuit shown in below figure, the diodes are assumed to be ideal i.e. having zero internal resistance. Find: (I) D.C. output voltage [05]
(II) peak inverse voltage.



Q. 1

- (A) Define α & β and also derive relation between α & β in BJT. [04]
- (B) Discuss on output characteristic of N channel JFET. [04]
- (C) Explain - Zener Diode. [02]

Q. 2

- (A) Describe the working and construction of NPN transistor. [05]
- (B) Explain input and output characteristic of CB configuration of BJT. [05]

OR

Q. 2

- (A) Explain the Working of IC - LM-340 with circuit diagram. [05]
- (B) Discuss the application of IC -555 as a monostable multivibrator. [05]

Q. 3

Attempt any two

[10]

- (A) Give classification of different types of clamper circuit and explain any one.
- (B) Explain the construction and working of N channel depletion MOSFET.
- (C) State difference between MOSFET and BJT.

SECTION-II

Q. 4

- (A) Derive the equation of voltage gain (A_f), input resistance (R_{if}) and output resistance (R_{of}) for inverting amplifier with feedback configuration. [05]
- (B) Discuss the operation of integrator with necessary diagrams. Also derive the equation of output voltage. [05]

OR

Q. 4

- (A) With help of neat sketch, illustrate a low pass active filter using op-amp. [05]
- (B) Design a Wien bridge oscillator that will oscillate at 2 KHZ. [05]

Q. 5

- (A) Draw and explain a neat circuit diagram of op-amp as a unity gain amplifier. [05]
- (B) Discuss the principles of negative current feedback in transistor amplifier with a neat diagram. [05]

OR

Q. 5

- (A) Derive an expression for the gain of negative voltage feedback transistor amplifier. [05]
- (B) Explain summing, scaling and averaging amplifier using inverting configuration of op-amp. [05]

Q. 6

Attempt any two

[10]

- (A) Write short notes on classification of transistor amplifiers.
- (B) Draw the block diagram of an op-amp and explain the purpose of using each block.
- (C) Derive an expression for the voltage gain of a transistor amplifier from its AC equivalent circuit.
- (D) Give the definitions of following.
- (i) SVRR
 - (ii) CMRR
 - (iii) Slew rate
 - (iv) Input Bias Current
 - (v) Input Offset Voltage

-----END OF PAPER-----