

Roll No.

24004

**B. Tech 1st Semester (Common for All
Branches) Examination – February, 2022**
BASICS OF ELECTRONICS

Paper : ECE-101-F

Time : Three hours]

[Maximum Marks : 100

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 : Attempt *five* questions in total. All question carry equal marks. Question Number 1 is **compulsory**. Attempt *one* question each from each Unit.

1. (a) Enumerate application of negative feedback. 3
- (b) Give out characteristics of Ideal Op Amp. 3
- (c) Write Truth Table for JK (master-slave) Flip Flop. 3
- (d) List out characteristics of Intrinsic semiconductor. 4
- (e) Enumerate difference between Inverter and UPS. 4
- (f) Practical applications of seven segment display. 3

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UNIT - I

2. (a) Explain basic concept of intrinsic and extrinsic semiconductor. Also explain the mechanism of flow of current through a junction. 15
(b) Enumerate basic terminal characteristics of a junction diode. 5
3. (a) Draw the circuit diagram of cascaded amplifier. How it affects the overall gain and bandwidth? 15
(b) What do you understand by amplifier gain bandwidth? 5

UNIT - II

4. (a) With the help of diagram, explain working of crystal oscillator. 10
(b) Explain briefly working of Op Amp as inverter and differentiator. 10
5. (a) Explain working of voltage regulators. Also enumerate their applications. 10
(b) Discuss in details the working principle of inverter with suitable diagram. Also give out its applications. 10

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(2)

UNIT - III

6. (a) Convert the followings : 10
(i) (6CB4.0)₁₆ into Octal
(ii) (7214.12)₁₆ into Decimal
(iii) (3914.75)₁₆ into Hexadecimal
(iv) (10111001100)₂ into Decimal
- (b) Draw the symbols and write the truth table for all gates. 10

7. Write short notes on working of the followings :

10 × 2 = 20

- (a) CRO
(b) Function generator

UNIT - IV

8. (a) Explain working of dot matrix display. 10
(b) Explain working of transmitting type liquid crystal cells. 10
9. Write short notes on the followings : 10 × 2 = 20
(a) Construction and advantages of LED
(b) Working principle of LCD display

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