

24004

B. Tech. 1st Semester F-Scheme Examination,

December-2014

BASICS OF ELECTRONICS

Paper-ECE-101-F

Time allowed : 3 hours]

[Maximum marks : 100

Note : (1) *Attempt a total of five questions.*

(2) *Question No. 1 is compulsory. One question to be attempted from each unit.*

(3) *The sub parts of questions should be attempted together only.*

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|--------|---|---|
| 1. (a) | Explain conditions for oscillation. | 2 |
| (b) | Characteristics of Ideal Op Amp. | 3 |
| (c) | Define flip flops and their purpose. | 4 |
| (d) | Difference between Diffusion and Drift current. | 4 |
| (e) | Difference between ON-line and OFF line UPS. | 4 |
| (f) | Applications of seven segment display. | 3 |

Unit-I

2. Draw the diagram of P N junction and explain its behaviour in : 20
- (a) Open circuit.

- (b) Forward bias.
- (c) Reverse bias.
- 3. (a) Draw the circuit diagram of RC coupled amplifier and explain its working principle and frequency response. 15
- (b) Why negative feedback is essential for amplifiers ? 5

Unit-II

- 4. (a) Explain working of crystal oscillator. 10
- (b) Explain briefly Applications of Op Amp. 10
- 5. (a) Explain working of voltage regulators and their applications. 10
- (b) Describe working principle of Inverter and its applications. 10

Unit-III

- 6. (a) Convert the following : 10
 - (i) $(8AB4.01)_{16}$ into Octal.
 - (ii) $(754.32)_8$ into Decimal.
 - (iii) $(1094.45)_{10}$ into Hexadecimal.
 - (iv) (10111001100) into Decimal.

(3)

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- (b) Realize all basic gates using NAND gates. Also write the truth table. 10

7. Write short notes on : 10×2

- (a) Digital Multi meter
(b) Signal generator.

Unit-IV

8. (a) Draw the diagram of seven segment display and write the truth table. 10
(b) Explain working of Dynamic scattering type LCD display. 10
9. Write short notes on : 10×2
(a) Working principle and advantages of LED.
(b) Advantages and disadvantages of LCD display.