

# 1230

## Code : 15EE33T

Register  
Number

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III Semester Diploma Examination, Nov./Dec. 2017

### ANALOG ELECTRONICS

Time : 3 Hours ]

[ Max. Marks : 100

- Note :** (i) Answer any **six** questions from Part – A. Each question carries **5** marks.  
(ii) Answer any **seven** full questions from Part – B. Each question carries **10** marks.

#### PART – A

1. Define :

- (a) Hole current
- (b) Electron-Hole pairs
- (c) Doping
- (d) Acceptor
- (e) Donor impurity

1 × 5

BETA CONSOLE!

Diploma - [All Branches]

Beta Console Education

3+



2. Define transistor and mention the function of each terminal.

5

3. Derive relation between Alpha and Beta.

Diploma Question Papers [2015-19]

5



Beta Console Education

3+

4. Define electron emission and list types of electron emission.

5

5. Sketch the block diagram of Regulated Power Supply (RPS) and label it.

5

6. Describe the working of transistor CE amplifier.

5

7. Explain the working of Push-pull amplifier.

5

8. Define :

1 × 5

- (a) Virtual ground
- (b) CMRR
- (c) Slew Rate
- (d) Time constant
- (e) Duty cycle

9. Describe Op-Amp as Inverting Amplifier.

5

**PART – B**

10. (a) Explain the reverse bias characteristics of Zener diode. 5  
(b) Explain the working of thermistor. 5
11. (a) List the applications of varistor, thermistor and zener diode. 5  
(b) Define stabilization, thermal run away and heat sink. 5
12. (a) Define transistor biasing and its necessity. List the types of biasing. 5  
(b) Define what is FET and list the types with symbol. 5
13. (a) Explain working of NPN transistor. 5  
(b) Differentiate BJT & MOSFET. 5
14. (a) Explain working of photodiode. 5  
(b) Describe the working of LDR. 5
15. (a) Explain the working of fullwave centre tapped rectifier with waveform. 6  
(b) Describe with sketch the working of C filter. 4
16. (a) Define voltage regulator and list operating voltages of 78XX and 79XX series. 5  
(b) List any three advantages and two disadvantages of negative feedback. 5
17. (a) Define oscillator. List different types of oscillator. 3  
(b) Explain working of RC phase shift oscillator. 7
18. (a) Describe the construction of CRT. 5  
(b) Sketch and explain block diagram of Op-Amp. 5
19. (a) List the types of frequency filters. 3  
(b) Explain 555 timer as mono-stable multi-vibrator. 7