1170

Code : 15EE-33T

Register Number | | | | | | | |

III Semester Diploma Examination, April/May-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. List any five types of diodes with one application for each. **5**

2. Define transistor and mention the function of each terminal. **5**

3. Explain with neat circuit diagram MOSFET as a switch. **5**

4. What is electron emission ? List the types of electron emission. **5**

5. Explain with circuit diagram and waveforms the working of halfwave rectifier circuit. **5**

6. Classify the oscillators based on the circuit component used in its construction and based on the range of operating frequency. **5**

7. Explain the Bark hausen criterion for obtaining oscillations. **5**

8. List the ideal characteristics of an Op-Amp. **5**

9. Explain the working of Op-Amp as an inverting amplifier. **5**

PART – B

10. (a) Explain the P-type semiconductor with co-valent bond diagram. 4
    (b) Explain with neat circuit diagram the forward characteristics of PN junction diode. 6

11. (a) Differentiate intrinsic and extrinsic semiconductors. 5
    (b) Explain the voltage divider method of biasing of a transistor. 5

12. (a) Define Alpha and Beta. 4
    (b) Explain with diagram, the input characteristics of the transistor in CE mode. 6

13. (a) Explain with diagram the working of MOSFET. 6
    (b) List any two types of transistor configuration with their applications. 4

14. Explain with diagrams the working of the following opto electronic devices : 5 + 5
    (i) Photo diode
    (ii) LED

15. (a) Explain with circuit diagram, the working of IC 7805 voltage regulator. 5
    (b) Explain the working of capacitor filter circuit with block diagram. 5

16. (a) Define rectifier efficiency and ripple factor. Write the expression for ripple factor. 5
    (b) Explain with block diagram negative feedback and mention any two advantages of negative feedback. 5

17. (a) Explain the working of class A amplifier with the help of D.C. load line. 5
    (b) Explain the working of active low pass filter. 5

18. (a) Explain the gain in dB and frequency response of RC coupled amplifier. 6
    (b) List any four applications of oscillators. 4

19. (a) Sketch the pin diagram of IC 555 timer and label them. 3
    (b) Explain with block diagram and waveforms the working of astable multivibrator. 7