Total No. of printed pages = 2

Et-305/AE-I/3rd Sem/2016/N

ANALOG ELECTRONICS – I

Full Marks – 70

Pass Marks – 28

Time – Three hours

The figures in the margin indicate full marks for the questions.

Answer any *five* questions.

1. (a) Discuss about physical construction and characteristics of vacuum diode. 10

   (b) Mention the limitations of vacuum triode. 4

2. (a) Explain about extrinsic semiconductor and its classification with example. 10

   (b) Explain the behaviour of a PN junction under forward and reverse biasing condition. 4

3. (a) Explain the constructional features of Transistor and also draw its symbols. 8

   (b) Draw the common base (CB), common emitter (CE) and common collector (CC) connections for NPN transistor. 6

[Turn over

4. (a) Discuss about the basic functions of Filter circuits. 4

(b) Explain the working principle of half-wave rectifier circuit along with its circuit diagram and waveform. 10

5. (a) Compare class A, class B and class C amplifier. 6

(b) Explain the push-pull circuit with a neat diagram. 8

6. (a) List the differences between positive and negative feedback. 4

(b) Explain the working principle of Hartley oscillator with its circuit diagram. 10

7. Write short notes on any *two* : 2×7=14

(a) Zener diode as voltage regulator

(b) RC coupled amplifier

(c) Barkhausen criterion

(d) Crystal oscillator.