Total No. of printed pages = 3

Et-304/EEtE/3rd Sem/2014/N

ELEMENTS OF ELECTRONICS ENGINEERING

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) How resistances are colour coded ? Write the colour coding table of resistances. 3+5=8

   (b) A resistor has a colour band sequence of yellow, brown, blue and silver. Find the range of the resistance of the resistor. 6

2. (a) Describe with diagram the plate characteristic of vacuum diode. 7

   (b) Describe the construction of vacuum triode. 5

   (c) Find the relationship between μ, r_p and gm of vacumn tube constants. 2

[Turn over

3. (a) What do you mean by semiconductor and what are the properties of semiconductors ? 2+3=5

(b) Describe the volt-ampere characteristics of pn junction. 5

(c) What is the difference between p-type and n-type semiconductor ? 4

4. (a) What is a crystal diode ? How polarities of crystal diode are identified ? 2+3=5

(b) Describe a half-wave rectifier using crystal diode. 5

(c) What are filter circuits and how they are classified ? 4

5. (a) What is transistor ? Describe the working of a n-p-n and p-n-p transistor. 2+8=10

(b) On what basis the amplifiers are classified ? 4

6. (a) What is oscillator ? Discuss the advantages of oscillators. 1+5=6

(b) Describe the construction and operation of a C.R.T. 8

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

(i) Push pull amplifier

(ii) Wein bridge oscillator

(iii) Class A, Class B, Class C and Class AB power amplifier

(iv) Characteristics of common emitter connection.