ML-106

April-2018

B.Sc., Sem.-I

CC-3-101 : Electronics

Time : 3 Hours]　　　　　　　　　　　　　　　　　　　　　[Max. Marks : 70

Instructions :　　(1)　**All** the questions having equal marks.
　　　　　　　　　(2)　Symbols used here have their usual meanings.

1. (a) What are different types of inductors ? Explain them with their construction features. Also explain about Q factor of an inductor.　　**10**

OR

What is resistor ? Explain its types in detail. Also discuss colour code of resistance. Give colour code of 5.6 kΩ $\pm$ 10%.

　(b) Write notes on : (any **one**)　　**4**
　　(1)　DC Voltmeter
　　(2)　AC Voltmeter

2. (a) Draw the circuit of diode clamper & explain its working. Also discuss about biased clamper & give its application.　　**8**

OR

Explain about voltage limiter & voltage doubler circuit.

　(b) Write notes on : (any **one**)　　**6**
　　(1)　LED
　　(2)　Photo diode

3. (a) Define Voltage, Current & Power gain. Explain the method for measuring output resistance.　　**10**

OR

What is harmonic distortion ? Discuss the three point method of calculating harmonic distortion with necessary equation & wave forms.

　(b) Write notes on : (any **one**)　　**4**
　　(1)　Zero decibel reference level
　　(2)　Use of a voltmeter as a decibel indicator.

4.   (a)   Perform 2's complement subtraction : (any **two**)   4
          (1)   85 & 46
          (2)   –23 & + 53
          (3)   – 57 & – 39
          (4)   64 & – 27
     (b)   Convert : (any **one**)   4
          (1) $C234 \cdot A2_{(16)} = $ _____ $_{(2)} = $ _____ $_{(10)}$
          (2) $8953 \cdot 45_{(10)} = $ _____ $_{(2)} = $ _____ $_{(16)}$
     (c)   Perform binary subtraction : (any **two**)   4
          (1)   75 & 35
          (2)   65 & 94
          (3)   102 & 72
          (4)   110 & 129
     (d)   Find the binary equivalent of the following octal nos : (any **one**)   2
          (1)   345
          (2)   456

5.   Answer in short.   14
     (1)   What is the unit of capacitance ?
     (2)   What is Shunt ?
     (3)   Write the full form of PCB.
     (4)   Define Bel.
     (5)   What is Clamper ?
     (6)   Write classes of amplifier.
     (7)   Give full form of LASER.
     (8)   What would be output resistance for an ideal amplifier ?
     (9)   What do you mean by Phase distortion ?
     (10) Define MSB.
     (11) What is byte ?
     (12) Give is complement of 49.
     (13) $A \cdot (A + B) = $ _____.
     (14) What is Switch ?

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