Total No. of Questions :5] *[Total No. of Printed Pages :1*

Roll No .....

EX - 405

B.E. IV Semester Examination, December 2014

Electronic Devices and Circuits - II

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit - I

1. a) Explain the summing amplifier.
   b) Explain the CMRR ratio of Op-Amp?
   c) Explain the effect of feedback an performance characteristic of an amplifier.
   d) Explain the circuit diagram of voltage shunt feedback amplifier? Also derive the expression for closed loop voltage gain?

   OR

   Explain the working and circuit diagram of instrumentation Amplifier? Also write down the application of instrumentation amplifier?

Unit - II

2. a) Explain the low pass filter design steps?
   b) Explain the band pass filters?
   c) Explain the 555 timer as an Astable Multivibrator.
   d) In the Astable Multivibrator, determine the positive pulse width t_c, negative pulse width t_d, free running frequency and duty cycle.
   (given $R_A = 2.2\ k\Omega$, $R_B = 3.9\ K\Omega$) and ($20.1\ \mu F$)

   OR

   Explain the block diagram of PLL 565 and their application?

Unit - III

3. a) What is fidelity?
   b) Define noise figure and sensitivity?
   c) Explain the working of carbon microphone with circuit diagram.
   d) Discuss different types of sound recording system? Explain are of them in detail?

   OR

   Explain the working of moving coil loudspeaker? Also write down the application?

Unit - IV

4. a) What is PIN diode?
   b) What is the difference between (Travelling Wave Tube) TWT and BWO (Backward Wave Oscillator)?
   c) What are limitations of conventional tubes at microwave frequency ranges?
   d) Draw and explain the working of two cavity klystron amplifier?

   OR

   What is magnetron? Also explain the working and block diagram of magnetron?

Unit - V

5. a) Why schottky TTL is used in digital system?
   b) Write down the advantage of CMOS circuit?
   c) Compare the DTL and TTL logic families.
   d) Explain the working and circuit operation of ECL circuit?

   OR

   Explain the advantage of FET devices? Also compare FET and BJT devices?

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