T.E./Sem V/CBSGS/ETRX/DLIC/ND-17

Q.P. Code :13160

[Time: Three Hours] **[Marks:80]**

Please check whether you have got the right question paper.

N.B:
1. Question.No.1 is compulsory.
2. Solve any three questions from remaining.
3. Assume suitable data if necessary.
4. Figures to the right indicate marks.

Q. 1 a) Design a differentiator to differentiate the input signal that varies in frequency from to 10 Hz to 1 k Hz. **05**

b) Compare ego crossing detector with Schmitt trigger circuit. **05**

c) Explain Resolution, Accuracy and settling time with respect to DAC. **05**

d) Explain Inverting mode current amplifier circuit using OPAMP. **05**

Q. 2 a) Define the following **10**

i) Slew Rate
ii) CMRR
iii) Input offset voltage
iv) Outpt offset voltage
v) PSRR

b) Draw neat diagram of Instrumentation amplifier using op-amp and hence derive the equation of output voltage. **10**

Q. 3 a) Explain Waving of R/2R ladder D/A converter. **10**

b) Design voltage regulator to give Vo = 9V at 600 mA using IC 723. **10**

Q. 4 a) Explain Astable muiltinibratar using op-amp. **10**

b) Design a 2nd order KRC low pass filter with cutoff frequency to =1kH_2 and Q=5 **10**

Q. 5 a) Design Monostable multivibrator using IC 555 to generate output delay of 10 ms. **10**

b) Explain Internal diagram of power amplifier LM380. **10**

Q. 6 a) Explain function of each block of PLL. **10**

b) Design a triangular wave generator circuit to get the output frequency at 1.5 kHz and $Vo_{(p-p)}$=7.5 v using op-amp. **10**
