Q4) a) State the important parameters to be considered while selecting DAC. **[8]**

b) State the important characteristics of instrumentation amplifier. Sketch the noise model of an amplifier. **[8]**

Q5) a) Explain the important factors while selecting microcontroller with suitable example. **[8]**

b) Discuss the interface of LCD with microcontroller with neat diagram. **[8]**

OR

Q6) a) Explain the different schemes of LED interfacing with the microcontroller. **[8]**

b) Compare: **[8]**

i) RISC with CISC.

ii) I^2C with SPI.

SECTION - II

Q7) a) State the goals of software design. **[4]**

b) Explain the different phases of software design with the help of neat block diagram. **[8]**

c) Enlist the important features of flowchart. **[6]**

OR

Q8) a) Explain in detail the process of developing software for a microcontroller-based system using a combination of low a high level language. **[8]**

b) Explain the features of simulators. **[4]**

c) Explain the different types of constructs used in structure programming with neat diagram. **[6]**

Q9) a) Explain the PCB design rules for mixed signal circuits. **[8]**

b) What is shielding? Discuss the different types of shielding with neat diagram. **[8]**

OR

Q10)a) What is noise? Explain the different noise reduction techniques with neat diagrams. **[8]**

b) Define signal integrity. State & explain different factors affecting signal integrity. **[8]**

Q11)a) Enlist the capabilities of DSO & MSO. **[6]**

b) Explain the importance of operating point analysis & with suitable diagram of two stage amplifier how it is carried out. **[8]**

c) Compare simulation with prototyping. **[2]**

OR

Q12)a) Explain the importance of environmental testing. Briefly explain the different temperature tests carried out on product. **[8]**

b) State the capabilities of logic analyzer. **[2]**

c) With the help of suitable diagram explain EMI/EMC testing carried out on product. **[6]**

Total No. of Questions :12]

SEAT No. :

P3375

[Total No. of Pages :3

[4959]-113
B.E. (Electronics)
VLSI Design
(2008 Course) (Semester -I) (404202)

Time : 3 Hours *[Max. Marks :100]*

Instructions to candidates:

1) ***Answer 03 questions from section I and 03 questions from secetion II.***
2) ***Answers to the two sections should be written in separate books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right indicate full marks.***
5) ***Assume suitable data if necessary.***
6) ***Use of logarithmic tables slide rule, mollier charts, electronic pocket calculator and steam tables is allowed.***

SECTION -I

Q1) a) Explain CMOS inverter and also show the voltage transfer curve with all the region of operation of NMOS and PMOS. **[7]**

b) Explain the following. **[9]**

i) Hot electron effect.

ii) Body effect.

iii) Velocity saturation.

OR

Q2) a) Draw 8:1 MUX using transmission gate and compare the same with conventional diagram of MUX. **[8]**

b) Differentiate between Static and dynamic power dissipation considering any one digital circuit. **[8]**

Q3) a) Enlist all the memories used in CMOS technology. **[8]**

b) Differentiate between SRAM and DRAM and show how both memories are different from each other. **[8]**

OR

P.T.O.