USCS101 – CoD

Q.P. Code : 754601

(2½ Hours) **Total Marks 75**

NOTE:
1) All questions are compulsory.
2) Figures to the right indicate full marks.
3) Illustrations, in-depth answers and diagrams will be appreciated.
4) Mixing of sub-questions is not allowed.

1. 1) Attempt All Questions. **15**

a) Select correct answer from the following:

i) The Number of bits in ASCII code are ___.
a) 2 b) 32 c) 16 d) 8

ii) Which of the following system is digital?
a) Electrical switch b) Electronic counter
c) Mercury Thermometer d) Both a & b

iii) The program written in our own alphanumeric characters is called ___.
a) Object code b) Executable code
c) Source code d) None of the above.

iv) The duplicate registers are sometimes called as ___.
a) Copy registers b) Shadow registers
c) Mirror registers d) None of the above.

v) The number of data registers in coldfire processor is ___.
a) 10 b) 5 c) 8 d) 4

b) Fill in the blanks

i) ___ Methematician developed rules for manipulating binary variables.
ii) If one of the input to an OR gate is high its output will be ___.
iii) The term used for converting alphabets, numbers into binary is ___.
iv) A K-map of 'n' variables contains ___ cells.
v) CISC stands for ___.

c) Short answers.

i) What is BCD?
ii) What is the binary equvalent of decimal 22?
iii) State any two mnemoric names used in assembly language & their role.
iv) State the types of machine instructions.
v) Define exception.

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2. Attempt the following (Any Three) : 15
   a) Write a note on computer number system.
   b) State the basic logic gates. Explain any one.
   c) What is the role of shift register? Explain with 4-bit shift register.
   d) What is ripple counter? Explain with example.
   e) Explain the steps to synthesis finite state machine.
   f) What is multiplexer? Explain its use.

3. Attempt the following (Any Three) : 15
   a) Describe memory organisation in brief.
   b) Write a note on CISC instruction set.
   c) Which type of addressing mode is useful while dealing with List & arrays? Explain.
   d) State & explain the ways of byte address assignment.
   e) For following instruction which address mode is used? Explain the operation.
      LOAD R1 N1
      LOAD R2 N2
      ADD R2 R2 R1
   f) Write a note on assembly language.

4. Attempt the following (Any Three) : 15
   a) Write in brief about store instruction.
   b) Explain 5 stage organisation of Data Path.
   c) Explain hard wired control approach of generating control signal.
   d) What is the concept of interrupts? Give example.
   e) Explain sequence of actions during branch instruction.
   f) Explain program controlled I/O.

5. Attempt the following (Any Three) : 15
   a) Write note on full adder.
   b) With example explain indexed addressing.
   c) What are the components of processor?
   d) Convert decimal 3521 to binary & octal form.
   e) Discuss addressing modes supported by NIOS II processor.

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