F.Y.B.Sc. Comp. Sci. Sem I Nov. 2017

COD

S0131 / S9052 / COMPUTER ORGANIZATION & DESIGN.

Q.P.Code: 12186

(2½ Hours) **[Total Marks: 75]**

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

Q. 1 Attempt All(Each of 5Marks) **(15)**

(a) Select appropriate choice from the following:

i. ASCII code is --- bit code.
a) 2 b) 5 c) 16 d) 8

ii. Which of the following system is digital.
a) Electrical switch b) electronic counter c) Mercury Thermometer d) None of the above

iii. If one of the input to an OR gate is high its output will be ___
a) Medium b) High c) Low

iv. The assembled machine language program is called ____
a) Object Code b)Executable code c) Source code

v. The number of data registers in coldfire processor is ---
a) 2 b) 4 c) 8 d) None of these

(b) Fill in the blanks.
1. If one of the inputs to an OR gate is high its output will be ____
2. The number of inputs to a logic gate is called its _____ .
3. In decimal number system base is ____
4. A K-map of n variables contains ____ cells.
5. CISC stands for _____

(c) Short Answers.
i. Define Sequential circuit.
ii. What is the binary equivalent of decimal 25?
iii. What is parity bit?
iv. Define fan-out.
v. Define exception.

Q. 2 Attempt the following (Any THREE)(Each of 5Marks) **(15)**
(a) Draw a neat basic block diagram of computer system.
(b) State& explain number systems used in computer system.
(c) What is the role of shift register? Explain with 4-bit shift register.
(d) What is gated S-R latch?
(e) Explain tristate buffers.
(f) Explain the concept of universal gate.

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Q. 3 Attempt the following (Any THREE) (Each of 5Marks) **(15)**

(a) Define terms: Memory word, word length, Address & address space.

(b) Explain How memory is used in read write operations.

(c) The HLL statement z=x*y when gets compiled what type of machine instructions will get used?

(d) Explain characteristics of CISC instruction set.

(e) What is pointer? Explain its use in indirection operation.

(f) Discuss the typeof machine instructions.

Q. 4 Attempt the following (Any THREE) (Each of 5Marks) **(15)**

(a) Explain arithmetic, logic & Load instructions with example.

(b) Discuss the conceptual view required for computing.

(c) How data movement & manipulation operations performed using Data Path.

(d) With neat diagram explain organisation of instruction fetch section of the processor.

(e) What is an exception? Give example.

(f) Explain program controlled I/O.

Q. 5 Attempt the following (Any THREE) (Each of 5Marks) **(15)**

(a) Explain implementation of AND, NOT GATES using NOR.

(b) Explain the use of Stacks in computer operations with example.

(c) What are the components of processor?

(d) Convert decimal number 356 to binary & octal form.

(e) Explain instruction execution & straight line dsequencing.