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M.Sc. 1st Semester (NEW/ATKT) Computer Science Examination December, 2017

COMPUTER ORGANISATION & ARCHITECTURE

Paper : III

Time Allowed : Three Hours] ***[Maximum Marks : 85***

Note : Attempt all the questions.

Section - 'A'

(Objective Type Questions)

10×1=10

Q.1. Choose the correct answer :

i) _____ is a combinational logic circuit which performs arithmetic addition of two bits.

(a) Half adder (b) Full adder

(c) Binary adder (d) None

ii) Flip Flop can store _____ bit of information.

(a) one (b) eight

(c) two (d) None

iii) The base of octal number system is _____

(a) 7 (b) 8

(c) 16 (d) None

iv) 2's complement of binary number 101100 is

(a) 110011 (b) 101011

(c) 010100 (d) none

v) Register Symbol IR stands for _____

(a) Input register (b) Instruction register

(c) Interrupt (d) None

vi) _____ Register holds address for memory.

(a) Address (b) Temporary

(c) Data (d) None

vii) A stack is a storage devices which stores information in _____ manner.

(a) LIFO (b) FIFO

(c) SILO (d) None

viii) In this addressing mode operand is specified in the instruction _____ .

(a) Register mode (b) Immediate mode

(c) Direct mode (d) None

ix) DMA stands for. Data Management Administrator

(a) True

(b) False

x) The strobe control is _____ data transfer method.

(a) Synchronous (b) Asynchronous

(c) Interrupt (d) None

Section - 'B'
(Short Answer Type Questions)

5x5=25

Q.2. What is combinational circuits? Explain Half Adder with logic diagram and Truth Table.

OR

What is excitation Table? Explain in detail with example.

Q.3. What is number system? Explain.

OR

Explain floating point representation of number.

Q.4. What is computer register? Explain in detail.

OR

Discuss computer instructions in detail.

Q.5. What is RISC? Explain.

OR

What is instruction format? Explain in detail.

Q.6. What is Asynchronous Data Transfer? Explain.

OR

What is Input / Output interface? Explain

Section - 'C'
(Long Answer Type Questions)

5x10=50

Q.7. Explain following combinational circuit with suitable diagram.

a) SR Flip Flops

b) JK Flip Flop

OR

What is maps? Simplify the following Boolean function to find the POS solution using k-map.

$F(A, B, C, D) = \Sigma (0, 1, 2, 6, 8, 9, 10)$

Q.8. What is complements? What are its types? Explain with example.

OR

Convert following decimal numbers to the base indicated.

a) $(7562)_{10}$ _____ (?) 8

b) $(1938)_{10}$ _____ (?) 16

c) $(175)_{10}$ _____ (?) 2

Q.9. Explain Design of Basic Computer with suitable diagram.

OR

Explain following terms :

a) Memory reference instruction

b) Interrupt

c) Timing and Control

Q.10. What is addressing modes? Explain in detail.

OR

Discuss Data Transfer and manipulation instruction in detail.

Q.11. What is DMA? Explain various types of Data transfer mode in detail.

OR

What is Priority Interrupt? Discuss its various type in detail.

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