

MCA-05/PGDCA-05/MSc.IT-05

Computer Organization and Architecture

Master of Computer Applications/P.G. Diploma in
Computer Application/

Master of Science in Information Technology

(MCA-11/16,PGDCA-11/16,M.Sc.(IT)-12/16)

Second Semester Examination 2019

Time : 3 Hrs

Maximum Marks : 80

Note : This paper is of Eighty (80) marks divided into three (03) sections A, B and C. Attempt the questions contained in these sections according to the detailed instructions given therein.

Section –A

(Long Answer Type Questions)

Note : Section 'A' contains four (04) long answer type questions of nineteen (19) marks each. Learners are required to answer any two (02) questions only. (2 x 19 = 38)

1. (a) what is the difference between a branch instruction, a call subroutine instruction, and program interrupt?
(b) What are the major difficulties that cause the instruction pipeline to deviate from its normal operation? Also discuss the solution for them.
2. (a) An arithmetic operation $(A_i+B_i) (C_i+D_i)$ with a stream of number has to be computed. specify a pipeline configuration to carry out this task. list the content of all the registers in the pipeline for $i=1$ to 10 Draw the space diagram for this scheme.

- (b) What is Micro program sequence ? How is it different from Hardwired control ?
3. (a) Explain the the direct memory access (DMA) and why it is desirable in some cases.
(b) Define the term pipelining ? Explain Arithmetic Pipelining.
4. (a) Explain how the mapping from an instruction code to a microinstruction address can be done by ROM.
(b) Explain the various addressing modes of Computer. Explain.

Section – B

(Short Answer Type Questions)

Note : Section 'B' contains eight (08) short answer type questions of Eight (08) marks each. Learners are required to answer any four (04) questions only. (4 x 8 =32)

1. What is input output processor (I/O)? Explain.
2. What are Mod 8 counters ? Explain.
3. Differentiate between Computer Organisation and Computer Architecture.
4. What is Multiplexer? explain the arithmetic pipeline for floating point addition and subtraction.
5. Design the control unit of basic computer.
6. What is instruction cycle?How is it different from execution cycle? Explain.
7. What are the different storage technologies ? Explain memory array organization?
8. What is programmed I/O? Explain.

Section –C

(Objective Type Questions)

Note : Section 'C' contains ten objective type questions of one (01) mark each. All questions of this section are compulsory. (10 x 1 = 10)

1. Which among following can be considered as most advanced ROM?
 - a) DRAM
 - b) EEPROM
 - c) RAM
 - d) PROM
2. Which determines the address of I/O interface ?
 - a) Register select
 - b) Chip select
 - c) Both of above
 - d) None of above
3. Whenever CPU detects an interrupt, what it do with current state ?
 - a) Save it
 - b) discard it
 - c) depends system to system
 - d) first finish it
4. I/O processor has direct access to?
 - a) Main Memory
 - b) Secondary Memory
 - c) Flash Memory
 - d) ROM
5. RISC Stands for ?
 - a) Risk instruction source computer
 - b) Reduced instruction set computer

- c) Risk instruction set computer
 - d) Risk instruction set computing
6. _____ read the data by reflecting pulses of laser beams on the surface ?
- a) Magnatic disk
 - b) Optical disk
 - c) Floppy disk
 - d) ROM
7. What is meaning of DMAC?
- a) Dual memory access controller
 - b) Direct memory access controller
 - c) Direct memory access computer
 - d) Direct memory accumulator controller
8. Which register is memory pointer ?
- a) Source Index
 - b) Instruction register
 - c) Stack Pointer
 - d) Program counter
9. Instruction that are used for reading from memory by an IOP called?
- a) Commands
 - b) Pulses
 - c) blocks
 - d) Interrupt
10. Cache memory is a?
- a) Fastest Memory
 - b) Slowest Memory
 - c) Operational Register
 - d) None of these
