

Roll No.

PGDCA-101

P. G. D. C. A. EXAMINATION, 2017

Paper First

COMPUTER FUNDAMENTAL AND ORGANIZATION

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt questions from all Sections as directed.

Inst : The candidates are required to answer only in serial order. If there are many parts of a question, answer them in continuation.

Section—A

(Short Answer Type Questions)

Note : All questions are compulsory. Each question carries 4 marks.

1. (A) Draw a block diagram of a computer system.
- (B) Explain some of the important characteristics of a computer.
- (C) Find Binary, Hexadecimal, Octal of 3628.
- (D) What is meant by 'Generation' of computer ?
- (E) Give the full form of the following :
EEPROM, EPROM, CMOS, DRAM.
- (F) Discuss the various codes for character representation BCD code.

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- 19/10
- (G) Difference between primary and secondary memory.
 - (H) What do you understand by optical scanners OCR, OMR ?
 - (I) Differentiate between micro and mini computer.
 - (J) Explain *four* input and output devices.

Section—B

(Long Answer Type Questions)

Note : Attempt any *two* questions. Each question carries 15 marks.

- 2. (i) Explain the CPU organization architecture.
- (ii) Write a program to evaluate the arithmetic statement :
$$X = (A + B) * (C - D)$$
 - (a) Using a general register computer with three address instructions.
 - (b) Using a general register computer with two address instructions.
- 3. (i) What is the need of memory hierarchy ? How is the performance of memory system improved using cache memory ?
- (ii) What do you mean by firmware ? How is it similar and different from software ?
- 4. (i) Explain in detail the architecture of Cache memory and describe the various mapping techniques.
- (ii) Explain the working of Harddisk.

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5. (i) Discuss the working of three secondary storage devices and describe the difference between sequential and direct organization method of storing data.
- (ii) Represent the number $(+46.5)_{10}$ as a floating point binary number with 24 bits. The normalized fraction mantissa has 16 bits and the exponent has 8 bits.

Section—C

(Long Answer Type Questions)

Note : Attempt any *two* questions. Each question carries 15 marks.

6. (i) Explain the concept of Bus arbitration.
- (ii) Explain in detail virtual memory.
7. (i) Explain how an ALU is constructed. Also explain the various arithmetic and logical operations performed by ALU.
- (ii) What do you mean by software ? Also define type of software.
8. (i) Write a short note on compiler and interpreter.
- (ii) What do you mean by addressing mode ? Explain the various address modes.
9. Write short notes on any *three* of the following :
- (a) Differentiate between DRAM and SRAM
- (b) CD-ROM
- (c) Bus Arbitration
- (d) DMA

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