1. One Megabyte (MB) is……..
   A. 1024 x 8 bits
   B. 1024 x 1024 x 1024 x 8 bits
   C. 1024 x 1024 x 1024 x 1024 x 8 bits
   D. None of the above

2. The third generation of computers consists of…….
   A. vacuum tubes
   B. IC chips
   C. Transistors
   D. Firmware

3. _____ is not a mobile operating system
   A. Android
   B. ios
   C. Symbian
   D. Vista

4. _____ is not processor developed by Intel corporation
   A. Celeron
   B. Core i5
   C. Athlon
   D. Pentium I

5. Which of the following best describes nonvolatile memory?
   A. memory that loses stored information when electrical power is removed
   B. nonmagnetic memory
   C. memory that retains stored information when electrical power is removed
   D. magnetic memory

6. Central Processing Unit (CPU) consists of
   A. control unit
   B. arithmetic and logic unit
   C. main store
   D. all of above

7. The physical connection that makes it possible for data transfer in a computer systems is called the …….
   A. bus
   B. interface
   C. register

D. control unit

8. The computer component that controls the actions of other components in order to execute instructions (the program) in the correct sequence is the……..
   A. I/O interface
   B. Arithmetic Logic Units
   C. Registers
   D. Control unit

9. The typical unit of measure for temporary storage is _____.

   A. MHz
   B. MB
   C. GB
   D. GHz

10. When adding an even parity bit to the code 110010, the result is _____.
    A. 1110010
    B. 1111001
    C. 110010
    D. 001101

11. _____is not a processor used in mobile phones or tablet PCs
    A. Qualcomm Snapdragon S4
    B. Intel Atom
    C. Pentium I- MMX
    D. Nvidia Tegra

Section B

Q1

a) What is Cache Memory and Split Cache?

(4 Marks)

b) Briefly explain Hit Ratio and Miss Ratio.

(2 Marks)

c) What is "Pipelining"? What are the problems of pipelining system and what are the solutions for those problems?

(6 Marks)

d) Describe the operations of a register.

(4 Marks)

e) List the two (2) types of registers and explain each of their functions.

(4 Marks)

Q2

a) Show how the following numbers are converted from
   i. 482_{10} to binary
   ii. 768_{10} to hexa decimal
   iii. 1011101001_2 to octal
   iv. 10111010101001 to hexa decimal
   v. $7B4_{16}$ to decimal

(5 marks)

b) Define following standards that used to represent alphanumeric data
   a. ASCII
   b. EBCDIC

(4 marks)

c) How many **bits** of memory are contained in a memory unit with memory capacity of:

   i. 48 MB
   ii. 128 KB
   iii. 512 GB

(3Marks)

d) What are buses in the context of computer architecture?

(4 Marks)

e) List two(2) types of bus topologies that are found in a typical computer system.

(4 Marks)

Q3

a) Draw a labelled block diagram of the Memory hierarchy. How the size, cost and speed change from top to bottom.

(4 marks)

b) Discuss the data storage mechanism of following secondary storage devices.
   A. Magnetic disks
   B. CD ROMs

(6 marks)

c) Draw a labeled block diagram of a Central Processing Unit and write the meaning of each abbreviation you used in the diagram.

(6 marks)

d) Match A and B

A	**B**
Vacuum Tubes	Object Images
Unicode	ENIAC
Photoshop	Raster Images
CorelDraw	Alpha Numeric

(4 marks)