Name :	(Alega)
Roll No.:	As Annual Of Exemplate 2nd Exemplate
Invigilator's Signature :	

CS/B.OPTM/SEM-2/BO-205/2013 2013

COMPUTER FUNDAMENTALS & PROGRAMMING

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP - A

(Multiple Choice Type Questions)

- 1. Choose the correct alternatives for the following : $10 \times 1 = 10$
 - i) ASCII stands for
 - a) American Standard Code for Information Interchange
 - b) American Scientific Code for International Interchange
 - c) American Standard Code for Intelligence Interchange
 - d) American Scientific Code for Information Interchange.
 - ii) Main storage is also called
 - a) accumulator b) control unit
 - c) register unit d) memory.

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- iii) Which is valid statement?
 - a) 1 kB = 1024 Bytes
- b) 1 MB = 1024 Bytes
- c) 1 kB = 1000 Bytes
- d) 1 MB = 1000 Bytes.
- iv) After coping the content how many times can you paste?
 - a) 1
 - b) 16
 - c) 32
 - d) Logically any number of times.
- v) Which is called brain of computer?
 - a) ALU

- b) CPU
- c) Memory
- d) None of these.
- vi) Which is not a valid memory?
 - a) RAM

b) NIC

c) ROM

- d) EEPROM.
- vii) Which of the following is not related to computer?
 - a) Mouse

- b) Cat
- c) Light pen
- d) Joystick.
- viii) CPU's processing power is measured in
 - a) nanorecords
 - b) minutes
 - c) million instructions per second
 - d) second.



- ix) One millisecond is
 - a) 1 second
- b) 10th of a second
- c) 1000th of a second
- d) 10000th of a second.
- x) An online backing storage system capable of storing larger quantities of data is
 - a) CPU

- b) memory
- c) mass storage
- d) secondary storage.

GROUP - B

(Short Answer Type Questions)

Answer any three of the following.

 $3 \times 5 = 15$

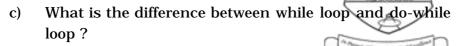
- 2. Which are universal gates and why?
- 3. Convert the following:
 - a) $4706_8 = ?_{16}$
 - b) $1AC_{16} = ?_2$
- 4. a) 1000011 + 11111 = ?
 - b) 1011001 100001 = ?
- 5. A logic circuit has 3 inputs *A*, *B* and *C*. It generates output 1 only when *A* and *B* both take value 1. Draw the logic circuit.
- 6. Explain different types of memory chips.

GROUP - C (Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

- 7. a) What are the different types of operators in C? Explain with example.
 - b) Write a program in *C* to swap the values of two integer variables without using third variable.

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- d) What is pre-processor? How does it work? Give an example of pre-processor. 3 + 6 + 3 + (1 + 1 + 1)
- 8. a) Explain the function of a full adder. Also generate the equations of the sum and carry for the full adder.
 - b) Create a full adder circuit using two half-adder circuits.
 - c) Write a program in C to check whether a user given number is prime or not. 6 + 4 + 5
- 9. a) Draw the Von Neumann architecture of a digital computer.
 - b) Differentiate between software and hardware.
 - c) What are the basic jobs of an operating system?
 - d) Differentiate between a ROM and a RAM. 5 + 3 + 5 + 2
- 10. a) Prove that $(X + Y) \cdot (X + Z) \cdot (Y + Z) = XZ + YZ + XY$ by postulates of Boolean algebra.
 - b) Define an array. Write a *C* program to find out the greatest element of an integer array of size 5.

$$5 + (2 + 8)$$

- 11. Write short notes on any *three* of the following : 3×5
 - a) Loader
 - b) Firewall
 - c) Virtual memory
 - d) De Morgan's law
 - e) ALU.

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