

Department of Computer Science and Engineering
University of Barisal
Course Title: Introduction to Computer Systems
Course Code: CSE-1101
Class Test

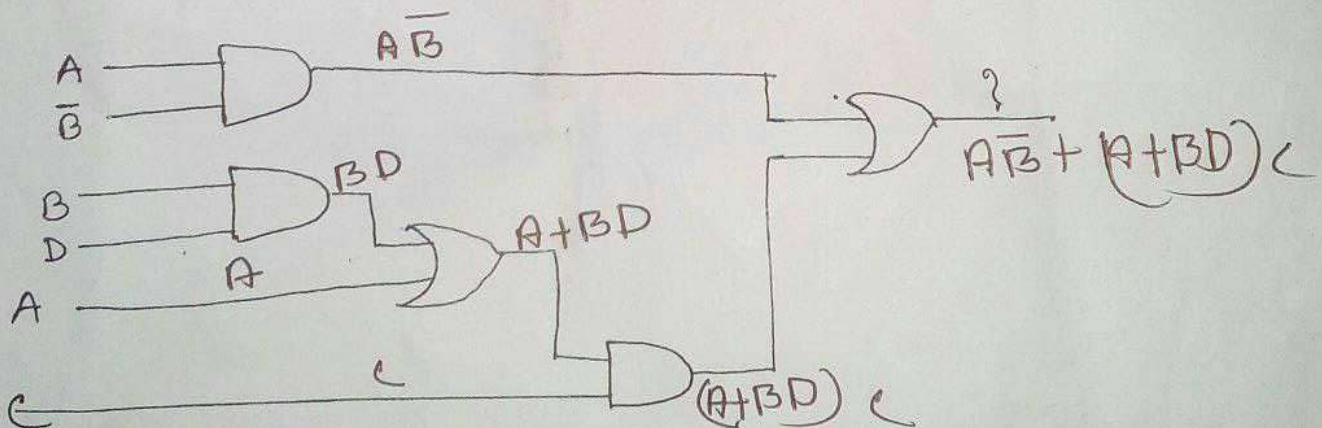
Time: 1 hour

Marks: 20

Name:

Roll:

1. "Computer is often referred to as a data processor", justify the statement. What are the basic functions performed by a computer system? Explain. [5]
2. A, B, C and D are four friends. They want to buy some computers for the purpose of learning computer technology. They know one of four number formats. Suppose they send you an email to let you know their contributions to buy computers. A can contribute $(110101111)_2$ taka, B can contribute $(7BCF)_{16}$ taka, C can contribute $(7752)_8$ taka and D can contribute $(35000)_{10}$ taka. Now answer the following questions. [2*2.5]
 - I. Find the total amount of A and C's contribution in binary format.
 - II. Find out the highest contribution among them.
3. a) Explain the principle of duality in Boolean algebra. How is it helpful? [2+3]
 b) A logic circuit has three inputs A, B and C. It generates an output 1 only when $A=0, B=1, C=0$ or $A=1, B=1, C=0$. Design a combinational circuit for this system.
4. Consider the following diagram. [2+3]



- a) Write down the Boolean expression from the diagram.
- b) Construct a logic diagram for the expression or the diagram using NOR gates only.

GOOD LUCK!!!