



UNIVERSITY OF BARISHAL
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

1st Year, 1st Semester Final Examination, Session: 2019-20

Course Title: Introduction to Computer Systems
Course Code: CSE-1101

Time: 3 hours

Marks: 60

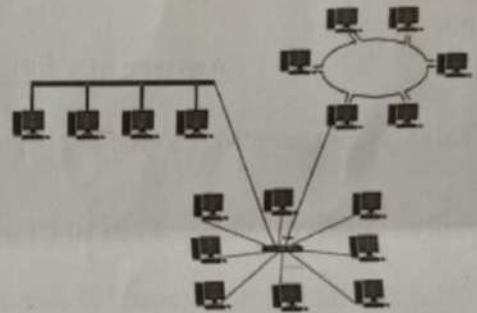
Answer any five Questions from the followings.

1. a) What is a Computer? Describe the basic organization of a computer system. [4]
b) Briefly explain the Generations of Computer [4]
c) What is Artificial Intelligence? Difference between a Human being and a Computer System. [4]
2. a) Describe the various types of computers on the basis of size and capability. [5]
b) What are the different components of a computer? Explain each of them. [5]
c) Differentiate between hardware and software of a computer. [2]
3. a) Why are binary codes used by computer systems? [2]
b) Do the following conversions: [6]
 - i. $(786.25)_{10} = (?)_8$
 - ii. $(2A3B.5F)_{16} = (?)_2$
 - iii. $(2753.35)_8 = (?)_4$
- c) Perform the binary subtraction of the following using 2's complement method. [2]
 $(-64)_{10} - (128)_{10} = (?)_2$
- d) Explain the principal of duality in Boolean algebra. [2]
4. a) State the De Morgan's Theorem. Prove that NAND and NOR gates are universal gate. [4]
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. [3]
c) Consider the following Boolean Expression: [5]
$$A.B + (\bar{A}.\bar{B}).(B.C + \bar{B}.\bar{C})$$
 - (i) Find the complement of the expression.
 - (ii) Construct a logic diagram for the Boolean expression.
5. a) Explain the concept of Cache Memory with diagram. What are the different types of cache memory found in a computer system? [4]
b) Write down the name of five pointing devices. What are the differences between Mechanical and Optical mouse? [3]
c) What do you understand by computer architecture? Is it same as computer organization? If no, explain the difference between the two. [3]
d) Write down the differences between hard disk and floppy disk. [2]
6. a) What is a debugger? Differentiate among a compiler, an assembler and an interpreter. [4]
b) Define Software Engineering. Describe the major steps of software development life cycle. [4]
c) Develop an algorithm for finding the prime number. [4]

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7. a) What do you understand by the term Software? Critically discuss the classification of Software. [4]
 b) What is an Operating System? Discuss the main task of an Operating System. [4]
 c) What are the different characteristics of a good programming language? [2]
 d) Explain the term syntax and semantics. [2]
8. a) What are the different types of computer networks? Explain CSN architecture. [4]
 b) The figure shows a network topology. It is a combination of two or more different basic network topologies. Now, [6]
 i. Write the name of the network topology with advantages and disadvantages.
 ii. The figure contains three different types of network topology. Write the name and briefly explain each of the network topology. [(From left to right)].
 c) What are the differences between internet and intranet? [2]



Good Luck!!!