

Paper B



National University of Computer & Emerging Sciences, Karachi  
MID –Programming Fundamentals (Lab) CS-Department



Course Code:	Course Name:
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Instructions:

- Return the question paper.
- Read each question completely before answering it. In case of any ambiguity, you may make assumption. But your assumption should not contradict any statement in the question paper.
- All the answers must be solved according to the sequence given in the question paper.

Max Marks 30 points

Time: 40 minutes.

EACH QUESTION CARRY 10 POINTS

Question 01:

Brand ABC is having a five-day sale. Each day, starting on Monday, the price will drop 10% of the previous day's price. For example, if the original price of a product is 2000, the sale price on Monday would be 1800. On Tuesday the sale price would be 1620 and so on till the last day write a program that will calculate and print the price of an item for each of the five days, given the original price.

Question 02:

Write a program that will perform multiplication of two given numbers using the following method:

- Input two numbers such as n1 and n2
- Divide the smallest number by 2 till the quotient is 1
- Multiply the larger number by 2.
- Declare a variable total. Add to a total only those multiples of the larger number which correspond to an odd quotient of the smaller number.

FOR EXAMPLE:

SAMPLE OUTPUT:

Multiply: 42 \* 35

35	42
17	84
8	168
4	336
2	672
1	1344

Then the total is  $42+84+1344 = 1470$

**Question 03:**

Write a program that calculates and prints the bill for rent a car. Package includes two types of service: regular and luxury. Its rates vary, depending on the type of service. The rates are computed as follows:

- Regular service: \$50.00 per hour plus first 1 hour of use are free. Charges for over 10 hours includes further taxes which are \$10 per hour.
- luxury service: \$60.00 plus:

a. For rental car used from 6:00 a.m. to 6:00 p.m., the first 1 hour is free; charges for more than 10 hours are \$20.5 per hour.

b. For rental car used from 6:00 p.m. to 6:00 a.m., the first 2.5 hours are free; charges for more than 2.5 hours are \$7.4 per hour.

Your program should prompt the user to enter an account number, a service code (type char), and the number of hours the service was used.

A service code of **r or R** means regular service; a service code of **L or l** means luxury service. Treat any other character as an error. Your program should output the account number, type of service, number of hours rental car was used, and the amount due from the user.

For the Luxury service, the customer may be using the service during the day and the night. Therefore, to calculate the bill, you must ask the user to input the number of hours the service was used during the day and the number of minutes the service was used during the night.