BT MRE-II(R/S)-06-24-3237 Reg. No. | | | | | | | | | B

# *B.Tech. Degree II Semester Regular/Supplementary Examination in Marine Engineering June 2024*

## 19-208-0205 COMPUTER PROGRAMMING

*(2019 Scheme)*

Time: 3 Hours Maximum Marks: 60

Course Outcome
On successful completion of the course, the students will be able to:

CO1: Write algorithms for problems.
CO2: Acquire knowledge of the syntax and semantics of C programming language for solving problems.
CO3: Code a given logic in C language using arrays.
CO4: Handle data using SQL and understand basics of OOP.
CO5: Write programs involving structures and do file management.
Bloom's Taxonomy Levels (BL): L1 – Remember, L2 – Understand, L3 – Apply, L4 –Analyze, L5 – Evaluate, L6 – Create
PI – Programme Indicators

Answer *ALL* questions (5 × 15 = 75)

| | | | Marks | BL | CO | PI |
|---|---|---|---|---|---|---|
| I. | (a) | What is an Operating System? What are its functions? | 7 | L1 | 1 | 1 |
| | (b) | What are the various types of memories? Explain the tiering of memory in a computer system. | 8 | L1 | 1 | 1 |
| | | **OR** | | | | |
| II. | | Explain the following terms:<br>(i) Bus Topology<br>(ii) Cache<br>(iii) Compiler<br>(iv) WAN<br>(v) Machine language. | 15 | L1 | 1 | 1 |
| III. | (a) | Write a program to find the HCF of two given numbers. | 8 | L2,L3 | 2 | 2 |
| | (b) | What is a switch? What are its drawbacks? Using switch, check if the entered alphabet is a vowel or a consonant. | 7 | L2 | 2 | 3 |
| | | **OR** | | | | |
| IV. | (a) | What is an external storage class? Using external storage class, write a program to find the power $x^n$. | 7 | L2 | 2 | 1 |
| | (b) | What is a recursive function? Using recursive function find the factorial of a given number. | 8 | L2,L3 | 2 | 3 |

**(P.T.O.)**

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| | | | Marks | BL | CO | PI |
|---|---|---|---|---|---|---|
| V. | (a) | Write a program to search for a given number in a list of numbers using linear search method. What is the advantage of using linear search over binary search? | 8 | L3 | 3 | 4 |
| | (b) | Write a program for matrix multiplication. | 7 | L3 | 3 | 3 |
| | | **OR** | | | | |
| VI. | (a) | What are the various parameter passing mechanisms? Explain with examples. | 8 | L2 | 3 | 2 |
| | (b) | Write a program to copy a string from one array to another without using library function. | 7 | L3 | 3 | 4 |
| VII. | (a) | What are the main features of OOP? | 8 | L1 | 4 | 1 |
| | (b) | Briefly define the following with a suitable example. | | L4 | 4 | 2 |
| | | (i) LIKE | 2 | | | |
| | | (ii) ORDER BY | 2 | | | |
| | | (iii) COUNT () | 2 | | | |
| | | (iv) SELECT | 1 | | | |
| | | **OR** | | | | |
| VIII. | (a) | Define encapsulation in OOP. | 5 | L1 | 4 | 1 |
| | (b) | Write the SQL query for the following based on the table below. | | | | |

Sales

| S# | SName | City |
|---|---|---|

Products

| P# | PName | S# | Price |
|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| (i) | Display all the details in the table products in the descending order of the product names. | 2 | L3 | 4 | 4 |
| (ii) | Change the price of the product tennis ball to 599. | 2 | L3 | 4 | 4 |
| (iii) | Add a new sales man in the table sales with the information S#: 9, Sname: Javed and City: Guwahati. | 2 | L3 | 4 | 4 |
| (iv) | Display the P#, product name and price of all the products sold by Nithya | 2 | L3 | 4 | 4 |
| (v) | Display all the names of all the sales persons whose name starts with 'A'. | 2 | L3 | 4 | 4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| IX. | (a) | Write a program to store the numbers stored in an integer array into a data title. | 7 | L2 | 5 | 2 |
| | (b) | Analyse the difference between a structure and a union with a suitable example. | 8 | L4 | 5 | 1 |
| | | **OR** | | | | |
| X. | (a) | What is fgets()? Explain its working using a suitable example. | 7 | L2 | 5 | 1 |
| | (b) | Using an array of structure, store roll no, name, marks of physics, chemistry and maths of n students. Calculate average of each student. Display the details of all the students in a tabular format. | 8 | L3 | 5 | 3 |

Bloom's Taxonomy Levels
L1 - 27%, L2 - 31%, L3 - 31%, L4 - 11%.

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