**CYCLE TEST – I**

**Academic Year: 2023-2024 (ODD Semester)**

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| --- |
| **INSTRUCTIONS (Please READ) :**   * **MOBILE PHONES ARE STRICTLY NOT PERMITTED** * **Please DO NOT WRITE anything in the Question Paper (Except Reg. No.)** * **Rough Work is NOT PERMITTED to do in Question Paper. You can use last page of your answer Booklet for doing Rough Work.** * **Marking like .(dot), Tick mark (√ ) etc. is NOT PERMITTED in Question Paper. This will lead to Malpractice.** * **Discussion with Neighbors leads to MALPRACTICE, which results in ‘0’ Mark.** * **DO NOT BORROW anything (Like Calculator, Pen, Pencil, Eraser etc.) from others.** * **Follow Dress Code** * **Question Paper should be submitted along with Answer Booklet.** |

**Class: I Yr/ I Sem/B.Tech (SoC - All Branches) Max. Marks: 25**

**Date: 05/10/2023 Duration: 50 minutes**

**Course Code and Title: 21CSS101J: Programming for Problem Solving**

**Course Learning Rationale (CLR):**

**CLR-1:** Think and evolve with a logic to construct an algorithm and pseudocode that can be converted into a program.

**CLR-2:** Utilize the appropriate operators and control statements to solve engineering problems

**Course Learning Outcomes (CLO/CO):**

**CLO-1:** To solve problems through computer programming. Express the basic data types and variables in C

**CLO-2:** Use appropriate data types in simple data processing applications.

**COURSE ARTICULATION MATRIX (CAM)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** |
| **CLO1/CO1** | **2** | **3** |  |  |  |  |  |  |  |  |  |  |
| **CLO1/CO2** | **2** | **3** |  |  |  |  |  |  |  |  |  |  |

**Part A ( 3\*5=15 Marks) [Answer ANY 3 questions]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Q.No** | **Question** | **Marks** | **CO** | **PO** | **BL** | **PI Code** |
| 1 | Ganesh had taken the loan amount of Rs. 50000 for 3 years in the HDFC bank at 13.0% interest. He went to the bank to make the payment of his loan. Could you help him to pay the correct amount by writing a C program? | 5 | 1 | 2 | 3 | 2.6.3 |
| 2 | Draw the flowchart and write an algorithm to find the largest of three numbers. | 5 | 1 | 2 | 2 | 2.5.2 |
| 3 | Demonstrate the use of a *‘break’* statement with an appropriate scenario. | 5 | 2 | 2 | 3 | 2.6.3 |
| 4 | Differentiate entry controlled loop and exit controlled loop with a program. | 5 | 2 | 2 | 2 | 2.5.2 |

**Part B (1\*10=10 Marks) [Either OR]**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Q.No** | **Question** | **Marks** | **CO** | **PO** | **BL** | **PI Code** |
| 5 | **i)** Develop a C program that reads a number from the user and finds the resultant value by multiplying the last digit with the second last digit.  **ii**) Ramesh is playing with a rectangular box (cuboid). He knows the length, width, and height of the box. Help him to find the surface area of the box using a C program. | 10 | 1 | 2 | 3 | 2.6.3 |
|  | **(OR)** |  |  |  |  |  |
| 6 | a) What is the purpose of the *‘else if’* statement in programming? How does it differ from ‘*if’* and ‘*else’* statements?  b) Write a simple C program that uses *‘else if’* statements to categorize a student grade (A, B, C, D or F) based on their score. Check the validity of input. | 5  5 | 2  2 | 2  2 | 2  3 | 2.5.2  2.6.3 |

**Quality Alignment Matrix (QAM)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Qn. No.** | **L1** | **L2** | **L3** | **L4** |  |
| **1** |  |  | **5** |  |  |
| **2** |  | **5** |  |  |  |
| **3** |  |  | **5** |  | **L1+L2 = 15 Marks, 15/40 = 37.5%** |
| **4** |  | **5** |  |  | **L3+L4 = 25 Marks, 25/40 = 62.5%** |
| **5** |  |  | **10** |  |  |
| **6(i)** |  | **5** |  |  |  |
| **6(ii)** |  |  | **5** |  |  |
| **Total** | **0** | **15** | **25** | **0** |  |

**Course Outcome (CO) and Bloom’s level (BL) Coverage in Questions**

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