

Course Code and Course Name : BECE209E-Structured and Object Oriented Programming
Faculty Name(s) : Dr. Poongundran Selvaprabhu,
Class Number(s) : VL2025260102673
Date of Examination : 17-08-2025
Exam Duration : 90 minutes **Maximum Marks: 50**

General instruction(s):

- Answer All Questions
- M - Max mark; CO - Course Outcome; BL - Blooms Taxonomy Level (1 - Remember, 2 - Understand, 3 - Apply, 4 - Analyse, 5 - Evaluate, 6 - Create)
- Course Outcomes (Type the CO statements covered in this question paper. Use the CO number as per the syllabus copy)
 1. Implement branching and looping statements to handle 1D and 2D arrays.
 2. Realize the importance of pointers to manage the memory dynamically

Q. No	Question	M	CO	B L
1.	Demonstrate the types of variables in C in detail. In particular, explain external variables with proper syntax, an example program, and detailed explanation of how they work across multiple functions or files.	10	1	2
2.	Write a C program that uses Boolean type variables and demonstrates logical operators (&&, , !) in detail. Tasks: 1. Explain how Boolean values are stored in C. 2. Demonstrate the logical AND (&&), logical OR (), and logical NOT (!) operators using truth table examples. 3. Use a Boolean type variable to evaluate different logical expressions. 4. Take inputs from the user and evaluate conditions using the logical operators. 5. Display the results of each logical operation clearly. 6. C program explaining how each operator works and how the Boolean evaluation occurs.	10	1	1
3.	Explain Bitwise operators in detail. Specifically focus on Shift operators: ○ Shift Left → Use a = 57 as an example. ○ Shift Right → Use b = 83 as an example. Include a bit-level explanation showing how the binary representation changes after shifting. Provide the syntax, working mechanism, and example C programs demonstrating Shift Left and Shift Right operations.	10	1	3

**School of Electronics Engineering,
 CONTINUOUS ASSESSMENT TEST -I
 FALL SEMESTER 2025-2026**

SLOT: A2+TA2

4.	Write a C program using nested if statements to evaluate the voting eligibility of a person based on age and gender. The program should prompt the user to enter age and gender ('M' for male or 'F' for female, case-insensitive). If the age is below 0 or above 120, or the gender is not 'M' or 'F', print "Invalid input". If the age is below 18, print "Not eligible for voting (Underage)". If the age is 18 or above, print "Eligible Male for voting" or "Eligible Female for voting" based on gender. Additionally, if the age is above 65, append " - Senior Citizen Male" or " - Senior Citizen Female" to the message based on the gender.	10	2	4
5.	Implement a C program to recommend a student's preferred academic stream using nested switch statements. Tasks: 1. Input the preferred stream as a character: - E or e → Engineering, C or c → Computer Science and S or s → Pure Science 2. Based on the selected stream, take the required subject marks and recommend accordingly: - Engineering → If Maths ≥ 85 and Physics ≥ 80, print "Recommended for Engineering". - Computer Science → If Computer Science ≥ 85, print "Recommended for Computer Science". - Pure Science → If the average of Maths, Physics, and Computer Science marks is ≥ 70, print "Recommended for Pure Science". 3. If the marks do not meet the above criteria, print: "Eligible, but improvement needed for selected stream". - Show how many more marks are needed in the relevant subjects to meet the eligibility criteria. - Allow the program to be repeated for multiple students until the user chooses to exit.	10	2	4
