

# ARYA COLLEGE OF ENGINEERING

## GUESS PAPER

(B.Tech. I Semester 2025-2026)

### 1FY3\_06 PROGRAMMING FOR PROBLEM SOLVING (PPS)

#### UNIT-1

Short Answers: (2MarksEach)
<p><b>Q. 1</b> Compare compiler and interpreter and Assembler.</p> <p><b>Q. 2</b> Compare SRAM and DRAM.</p> <p><b>Q. 3</b> Differentiate between primary and secondary memory. What are the different kinds of memory</p> <p><b>Q. 4</b> What is computer? What are its various operations and applications?</p> <p><b>Q. 5</b> What is pseudo code? Write pseudo code/ flowchart to check if a number is even or not.</p> <p><b>Q. 6</b> Describe the purpose of random, direct, and sequential access methods in storage devices.</p> <p><b>Q. 7</b> Compare high-level languages and low-level languages. Provide examples.</p>



Descriptive Answers: (4 to 10Marks)
<p><b>Q. 1</b> Classify the types of languages of computer.</p> <p><b>Q. 2</b> Explain RAM, ROM and cache memory.</p> <p><b>Q. 3</b> Draw and explain flowchart to check if a number is prime or not.</p> <p><b>Q. 4</b> Explain secondary storage devices and its types</p> <p><b>Q. 5</b> Explain Stored Program Architecture with a neat diagram</p> <p><b>Q. 6</b> Differentiate between Primary and Secondary Memory with examples.</p> <p><b>Q. 7</b> What is flow chart explain all symbols of flow chart?</p>

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## Unit-2

Short Answers: (2MarksEach)	
Q. 1	What is type casting? Explain with example
Q. 2	WAP to swap two numbers.
Q. 3	What is scope of a variable?
Q. 4	What are macros? Give example
Q. 5	Elaborate data types, variables and constants.
Q. 6	What is typedef and enum data type?.

Descriptive Answers: (4 to 10Marks)	
Q. 1	Explain formatted and unformatted I/O with example.
Q. 2	What is a preprocessor? What are its directives?
Q. 3	Describe various operators in C.
Q. 4	What is the structure of a C program explain all?

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#### Unit-3

Short Answers: (2MarksEach)	
Q. 1	Write about switch case decision making statement with syntax.
Q. 2	Explain break, continue and goto statements.
Q. 3	Write a program factorial of a number?
Q. 4	Define arrays and its types with syntax.
Q. 5	WAP to check if a number is palindrome or not
Q. 6	What is for loop? Explain with syntax with example?



Descriptive Answers: (4 to 10Marks)	
Q. 1	WAP to find largest and smallest value in an array of 10 elements.
Q. 2	WAP to pass a matrix to a function as argument and display it in that function.
Q. 3	Describe iterative statements with example.
Q.4	Write the difference between for while and do while loop?
Q.5	What is an Array and explain types of Array(1D,2D Array)?

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### 1FY3\_06 PROGRAMMING FOR PROBLEM SOLVING (PPS)

#### Unit-4

Short Answers: (2MarksEach)	
Q. 1	Structures are heterogeneous and user defined. How?
Q. 2	How to access members of structure? Explain with example.
Q. 3	What is a file? Explain its types.
Q. 4	What are the various modes of file?
Q. 5	What is pointer in C.
Q. 6	What is use of arrow operator.
Q. 7	What is void and double pointer.
Q. 8	What is actual and formal parameters in function?
Q. 9	What is recursion. Explain advantage of recursion?



Descriptive Answers: (4 to 10Marks)	
Q. 1	Write a program to explain array of structure in detail.
Q. 2	How are pointers and array related? Explain
Q. 3	Discuss pointer to structure with example.
Q. 4	WAP to create a structure, read student details and print them.
Q. 5	Explain File handling Functions.
Q. 6	Explain call by value and call by reference with suitable examples.
Q. 7	What are functions? Explain its categories.
Q. 8	Write a C program to copy the content of one file to another

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### 1FY3\_06 PROGRAMMING FOR PROBLEM SOLVING (PPS)

#### Unit-5

Short Answers: (2MarksEach)	
Q. 1	What are character codes?
Q. 2	What are the most common system/ways to represent numbers? Discuss.
Q. 3	Perform: $(1011)_2 + (0011)_2$
Q. 4	What is radix?
Q. 5	What is one's complement of a binary number?
Q. 6	Represent the name "RAM" in ASCII values.

Descriptive Answers: (4 to 10Marks)	
Q. 1	Explain BCD and EBCDIC.
Q. 2	Explain ASCII.
Q. 3	Calculate r and r-1 complement of: $(24222)_{10}$
Q. 4	Convert: $(10100111)_2 = (?)_{16}$
Q. 5	Convert: $(534.22)_{10} = (?)_2$
Q. 6	Perform binary additions: a) $10110 + 1101$ b) $11101 + 1011$

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### **1FY3\_06 PROGRAMMING FOR PROBLEM SOLVING (PPS)**

#### **Programs**

1. Develop a program to find the largest of three numbers using a nested if statement.
2. Write a program to generate all prime numbers between 1 and 100 using a while loop.
3. Develop a program to calculate the sum of digits of a number using a do-while loop.
4. Create a program that reverses a given integer and checks if it is a palindrome using a while loop.
5. Write a program to print Fibonacci numbers up to n terms using a nested for loop.
6. Define arrays in C. Write a program to find the maximum and minimum element in an array.
7. Write a program to add two matrices of size 3x3.
8. Develop a program to sort an array in ascending order using the bubble sort algorithm.
9. Write a program to search for a given number in an array using the linear search algorithm.
10. Write a function to calculate the factorial of a number using recursion.
11. Write a program to find the sum of elements in an array using a function.

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**12. Write a program to create a structure for a student (roll number, name, marks in 5 subjects) and calculate the total marks and percentage of the student.**

**13. Develop a program to count the number of characters, words, and lines in a given text file.**

**14. Write a C program that reads a text file and counts the number of characters, words, and lines in it.**

**15. Write a C program to copy the contents of one file to another.**

**16. Write a C program to print the following pattern.**

**1.**

```
*  
**  
***  
****  
*****
```

**2.**

```
1  
12  
123  
1234  
12345
```

**3.**

```
A  
B B  
C C C  
D D D D  
E E E E E
```

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**(PPS)**

4.

1

2 3

4 5 6

7 8 9 10

5.

1 2 3 4 5

1 2 3 4

1 2 3

1 2

1