Faculty of Engineering / Science
End Semester Examination May 2025
EN3ES28 / BC3ES13 Advanced Programming With C

Programme	:	B.Tech. / B. Sc.	Branch/Specialisation	:	All
Duration	:	3 hours	Maximum Marks	:	60

Note: *All questions are compulsory. Internal choices, if any, are indicated. Assume suitable data if necessary. Notations and symbols have their usual meaning.*

Section 1 (Answer all question(s))	Marks	CO	BL

Q1. What will be the output of the following C code? — **1 1 1**

```
int a = 20;
int *p = &a;
*p = 10;
printf("%d",a);
```

- ○ 20
- ◉ 10
- ○ Throw an error
- ○ Address of a

Q2. How do you declare an array of pointers to int? — **1 1 1**

- ○ int *p;
- ◉ int* p[];
- ○ int &p[];
- ○ int p*[];

Q3. Which operator is used to access members of a structure? — **1 2 1**

- ○ And Operator (&)
- ◉ Dot Operator (.)
- ○ Asterisk Operator (*)
- ○ Left Shift Operator (<)

Q4. The size of the following union, where an int occupies 4 bytes of memory is- — **1 2 1**

```
union demo
{
 float x;
 int y;
 char z[10];
};
```

- ○ 8 byte
- ○ 4 byte
- ◉ 10 byte
- ○ 18 byte

Q5. What is the alternative way of allocating memory in C besides malloc? — **1 3 1**

- ◉ calloc
- ○ realloc
- ○ free
- ○ new

Q6. Which of the following directive is used to include conditional code in source program? — **1 3 1**

- ○ #if
- ○ #ifdef
- ○ #ifndef
- ◉ All of these

Q7. When fopen() is not able to open a file, it returns - — **1 4 1**

- ○ EOF
- ◉ NULL
- ○ Run_time error
- ○ None of the above

Q8. Which is the data type of file pointer? — **1 4 1**

- ○ int
- ○ double
- ○ void
- ◉ FILE

Q9. Which header file is included in C program to draw shapes?   **1   5   1**
   ⭘ stdlib.h   ⭘ string.h
   ◉ graphics.h   ⭘ math.h

Q10. Which function is used to set background color in graphics programming?   **1   5   1**
   ◉ setbkcolor()   ⭘ setcolor()
   ⭘ getbkcolor()   ⭘ setbkcolour()

Section 2 (Answer all question(s))   Marks CO BL

Q11. What is pointer to pointer? How it is declared and initialized?   **2   1   1**

Rubric	Marks
Define Pointer to pointer , its declaration and initialization	2

Q12. What is function pointer? Explain with an example.   **3   1   1**

Rubric	Marks
Define Function Pointer and its example	3

Q13. (a) Write a Program in C to find the sum and average of all elements of array using pointer.   **5   1   1**

Rubric	Marks
Program with Correct syntax and logic	5

(OR)

(b) Write a program in C to compare two strings using pointer.

Rubric	Marks
Program with correct syntax and logic	5

Section 3 (Answer all question(s))   Marks CO BL

Q14. Define union with its declaration.   **2   2   1**

Rubric	Marks
Define Union and its declaration	2

Q15. Differentiate between structure and union.   **3   2   1**

Rubric	Marks
1 mark for each difference(at least 3 differences)	3

Q16. (a) Explain structure within a structure with an example.   **5   2   1**

Rubric	Marks
Explain structure within structure and its example	5

(OR)

(b) How do you use a pointer to a structure? Demonstrate with an example.

Rubric	Marks
define pointer to a structure and its example	5

Section 4 (Answer all question(s))   Marks CO BL

Q17. What is preprocessor directives? Explain any three types of preprocessors.   **4   3   1**

Rubric	Marks
Explain Preprocessor directives (1 mark) and its types (3 marks)	4

Q18. (a) Write a program in C to demonstrate malloc, calloc and realloc function .   **6   3   1**

Rubric	Marks
For correct syntax of each function and logic	6

(OR)

(b) What is macro? Explain different types of macros with an example.

Rubric	Marks
Define Macro and its types with example	6

Section 5 (Answer all question(s))   Marks CO BL

Q19. What is file handling? How do we declare a file in a C program? Explain the opening modes of file.   **4   4   1**

Rubric	Marks
Define File Handling and its declaration and opening modes of file	4

Q20. (a) Write a program in C to create and read information from a text file.   **6   4   1**

Rubric	Marks
Create file logic and read file logic. 3 marks for each	6

(OR)

(b) Explain following functions with syntax:
- fgetc()
- fputc()
- fprintf()

Rubric	Marks
Explain each function with syntax (2 marks for each function).	6

Section 6 (Answer all question(s))   Marks CO BL

Q21. What is graphics programming in C ?   **2   5   1**

Rubric	Marks
Explain Graphics Programming	2

Q22. Explain the following functions with syntax:
- setcolor()
- closegraph()
- outtext()

     3   5   1

Rubric	Marks
Explanation and syntax (1 marks for each function)	3

Q23. (a) Write a program in C to draw a circle and fill blue color in it .   **5   5   1**

Rubric	Marks
Correct syntax and logic	5

<div align="center">(OR)</div>

(b) Write applications of graphics programming.

Rubric	Marks
Application of Graphics Programming minimum 5	5

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