C++ TEST-8 (POINTERS)

Total points 50/50

STUDENT NAME *

VIVA

✓ 1. **A pointer in C++ is a variable that stores:** * 1/1

- ○ A) A number
- ◉ B) Address of another variable ✓
- ○ C) Data value
- ○ D) Function value

✓ 2. **Which operator is used to get the address of a variable?** * 1/1

- ○ A) *
- ◉ B) & ✓
- ○ C) ->
- ○ D) %

✓ 3. **Which operator is used to access the value of the variable pointed by a pointer?** *1/1

- A) &
- B) * ✓
- C) ->
- D) %

✓ 4. **What is the correct syntax to declare a pointer to an integer?** * 1/1

- A) int ptr;
- B) int *ptr; ✓
- C) int &ptr;
- D) pointer int ptr;

✓ 5. **If int a = 10;, then int *p = &a; means:** * 1/1

- A) p holds the value 10
- B) p holds the address of a ✓
- C) p is undefined
- D) p is reference of a

✓ 6. **What does *p give if int *p = &a; and a = 10;?** * 1/1

- A) Address of a
- B) 10 ✓
- C) p
- D) Error

✓ 7. **The address of a pointer variable itself can be obtained using:** * 1/1

- A) &p ✓
- B) p
- C) *p
- D) None

✓ 8. **What is the output of the following code?** * 1/1

```
int a = 5;

int *p = &a;
cout << *p;
```

- A) 5 ✓
- B) Address of a
- C) Error
- D) Garbage

✓ 9. **What is the size of a pointer in a 64-bit system?** * 1/1

- A) 2 bytes
- B) 4 bytes
- (●) C) 8 bytes ✓
- D) Depends on variable type

✓ 10. **Which of the following is the correct way to initialize a pointer to NULL?** *1/1

- A) int *p = 0;
- B) int *p = NULL;
- C) int *p = nullptr;
- (●) D) All of the above ✓

✓ 11. **Which keyword is used for dynamic memory allocation in C++?** * 1/1

- A) malloc
- (●) B) new ✓
- C) allocate
- D) create

✓ 12. **Which keyword is used to free dynamically allocated memory in C++?** *1/1

- A) free
- B) delete ✓
- C) remove
- D) erase

✓ 13. **What is wrong with this code?** * 1/1

```
int *p;

*p = 10
```

- A) Syntax error
- B) p is uninitialized ✓
- C) Memory leak
- D) None

✓ 14. **What is a dangling pointer?** * 1/1

- A) Pointer initialized to NULL
- B) Pointer pointing to invalid or deleted memory ✓
- C) Pointer not declared
- D) Pointer to constant

✓ 15. **Which pointer always points to the current object?** * 1/1

- A) self
- B) super
- C) this ✓
- D) current

✓ 16. **What is output?** * 1/1

```
int x = 5;

int *p = &x;

*p = 10;

cout << x;
```

- A) 5
- B) 10 ✓
- C) Address of x
- D) Error

✓ 17. **Which of the following statements is true?** * 1/1

- A) Pointer arithmetic is allowed on void pointers
- B) You can assign any type address to a void pointer ✓
- C) Void pointer cannot hold any address
- D) None

✓ 18. **Which of the following declares a pointer to pointer to int?** * 1/1

- (●) A) int ptr; ✓
- ( ) B) int ptr;
- ( ) C) int ptr;
- ( ) D) pointer **ptr;

✓ 19. **What is the output?** * 1/1

```
int x = 10;

int *p = &x;

int **q = &p;

cout << **q;
```

- (●) A) 10 ✓
- ( ) B) Address of x
- ( ) C) Address of p
- ( ) D) Error

✓ 20. **Pointer arithmetic works on:** * 1/1

- ( ) A) Integers only
- (●) B) Data type of pointer ✓
- ( ) C) Random values
- ( ) D) None

✓ 21. **What is p++ in pointers?** * 1/1

- A) Increment pointer value
- B) Moves pointer to next memory location ✓
- C) Adds 1 to address
- D) All of these

✓ 22. **Which of the following expressions is invalid?** * 1/1

- A) p++
- B) ++p
- C) p--
- D) ++(*p)++ ✓

✓ 23. **What will p+1 do if p is an int pointer?** * 1/1

- A) Add 1 byte
- B) Add 2 bytes
- C) Add 4 bytes (assuming int=4 bytes) ✓
- D) Add 8 bytes

✓ 24. **What is a null pointer?** * 1/1

- (●) A) Pointer pointing to address 0 ✓
- ( ) B) Pointer without data type
- ( ) C) Pointer to integer
- ( ) D) Pointer to 1

✓ 25. **What happens when you dereference a NULL pointer?** * 1/1

- ( ) A) Returns 0
- ( ) B) Segmentation fault
- ( ) C) Prints NULL
- (●) D) Undefined behavior ✓

✓ 26. **Which statement is used to dynamically allocate an array?** * 1/1

- (●) A) int *p = new int[10]; ✓
- ( ) B) int p = new int(10);
- ( ) C) int p = malloc(10);
- ( ) D) int p[10] = new;

✓ 27. **Which statement correctly releases memory allocated by new?** * 1/1

- A) delete p;
- B) free(p);
- C) delete[] p; ✓
- D) release(p);

✓ 28. **What is a wild pointer?** * 1/1

- A) Pointer declared but not initialized ✓
- B) Pointer pointing to 0
- C) Pointer to deleted memory
- D) None

✓ 29. **Which of the following correctly declares a pointer to a function?** * 1/1

- A) int (ptr)(int, int); ✓
- B) int ptr(int, int);
- C) int ptr(int, int);
- D) pointer(int, int);

✓ 30. **What is the output?** * 1/1

```
int a = 10;

int *p = &a;

int *q = p;

cout << *q;
```

- (●) A) 10 ✓
- ( ) B) Address of a
- ( ) C) 0
- ( ) D) Error

✓ 31. **What will be the result of:** * 1/1

```
int arr[3] = {10,20,30};

int *p = arr;

cout << *(p+2);
```

- ( ) A) 10
- ( ) B) 20
- (●) C) 30 ✓
- ( ) D) Error

✓ 32. **A pointer to a constant means:** * 1/1

- (●) A) The pointer cannot change the value it points to ✓
- ( ) B) The pointer cannot change its address
- ( ) C) Both A and B
- ( ) D) None

✓ 33. **A constant pointer means:** * 1/1

- (●) A) The pointer cannot point to another variable ✓
- ( ) B) The value cannot be modified
- ( ) C) Both
- ( ) D) None

✓ 34. **What is the output?** * 1/1

```
int x=5, *p=&x;

*p += 5;

cout << x;
```

- ( ) A) 5
- (●) B) 10 ✓
- ( ) C) Address of x
- ( ) D) Error

✓ 35. **Which of the following is true about pointer and array relationship?** * 1/1

- (●) A) Array name acts as pointer to first element ✓
- ( ) B) Both are same
- ( ) C) Array is stored as pointer
- ( ) D) None

✓ 36. **What is output?** * 1/1

```
int a[5] = {1,2,3,4,5};

int *p = a;

cout << *(p+3);
```

- A) 2
- B) 3
- C) 4 ✓
- D) 5

✓ 37. **Which of the following is not valid pointer type?** * 1/1

- A) void *p;
- B) int *p;
- C) string *p;
- D) int &p; ✓

✓ 38. **Pointers can be used with:** * 1/1

- A) Arrays
- B) Functions
- C) Classes
- D) All of these ✓

✓ 39. **Which of these is used to access class members using pointers?** * 1/1

- ○ A) *
- ○ B) .
- ◉ C) -> ✓
- ○ D) ::

✓ 40. **The expression *(arr + i) is equivalent to:** * 1/1

- ◉ A) arr[i] ✓
- ○ B) arr(i)
- ○ C) &arr[i]
- ○ D) arr+i

✓ 41. **What is the output?** * 1/1

```
int arr[3] = {1,2,3};

cout << &arr[0];
```

- ○ A) 1
- ◉ B) Address of first element ✓
- ○ C) Error
- ○ D) 0

✓ 42. **Pointer to pointer means:** * 1/1

- (●) A) Pointer that stores another pointer's address ✓
- ( ) B) Pointer to integer
- ( ) C) Pointer to void
- ( ) D) None

✓ 43. **Which of the following is not a valid operation on pointers?** * 1/1

- ( ) A) Addition
- ( ) B) Subtraction
- (●) C) Multiplication ✓
- ( ) D) Comparison

✓ 44. **What happens if delete is used twice on the same pointer?** * 1/1

- ( ) A) Program crash
- (●) B) Undefined behavior ✓
- ( ) C) Normal execution
- ( ) D) Compilation error

✓ 45. **Which of these is a pointer to a string literal?** * 1/1

- (●) A) char *p = "Hello"; ✓
- ( ) B) string p = "Hello";
- ( ) C) char p = 'H';
- ( ) D) None

✓ 46. **What is output?** * 1/1

```
int a = 10;

int *p = &a;

cout << p;
```

- ( ) A) 10
- (●) B) Address of a ✓
- ( ) C) Error
- ( ) D) Garbage

✓ 47. **What does delete[] do?** * 1/1

- ( ) A) Deletes single object
- (●) B) Deletes array allocated with new[] ✓
- ( ) C) Deletes variable
- ( ) D) None

✓ 48. **What is a pointer constant?** * 1/1

- (●) A) A pointer whose value (address) cannot change ✓
- ( ) B) A pointer that points to constant data
- ( ) C) Both A and B
- ( ) D) None

✓ 49. **Can we have a pointer to a function in C++?** * 1/1

- (●) A) Yes ✓
- ( ) B) No

✓ 50. **Which of the following correctly deletes dynamically allocated memory?** *1/1

int *p = new int;

- (●) A) delete p; ✓
- ( ) B) delete &p;
- ( ) C) free(p);
- ( ) D) remove(p);