

GATE 2015 – Question 11

Quick Reading Notes – C Character Arrays & Pointers

📌 Key Points to Remember

- `char s1[7] = "1234";` — declares a 1-D character array with 7 elements.
- `s1[0]` to `s1[6]` — are the seven individual array elements.
- `"1234"` — contains four characters; the string also needs a terminating null character `\0`.
- `s1[4]`, `s1[5]`, `s1[6]` — contain zero because the array is only partially initialized; for char, zero is represented as `\0`.
- `s1` — is the array name. In an expression, it represents the address of the first element, `s1[0]`.
- `p = s1 + 2;` — makes p point to `s1[2]`.
- `*p = '0';` — changes the character stored in `s1[2]` from '3' to the character '0'.
- `0` vs. `'0'` vs. `'\0'` — `0` is integer zero; `'0'` is the character zero (ASCII value 48); `'\0'` is the null character with value zero.
- `printf("%s", s1);` — prints characters from `s1` starting at `s1[0]` until the first `\0` is encountered.
- **Important** — `'0'` is an ordinary printable character; it is NOT the same as `'\0'`.

🔍 Quick Comparison: `0`, `'0'` and `'\0'`

Expression	Meaning	Value
<code>0</code>	Integer zero	<code>0</code>
<code>'0'</code>	Character zero	48 (ASCII)
<code>'\0'</code>	Null character	<code>0</code>

✅ Final Takeaway

After the pointer operation, the character array represents the string **"1204"**. The remaining array elements are not part of the printed string because the first `'\0'` terminates the string.

Focus: array initialization → pointer arithmetic → dereferencing → `%s` → `'\0'`



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