State Exam Topics

Embedded Computer Programming, Autonomous Intelligent Systems

For Embedded Microcomputer Systems Specialization

1. Explain the following terms: NULL pointer, dangling pointer, wild pointer, null safe programming!
2. How can we pass parameters in C? What is the difference between these mechanics?
3. What is the scope, visibility and lifetime of a variable in C?
4. What is a stack? How is it being used in C?
5. What is a macro? What is Macro Preprocessing? How does it work? Explain its mechanics with an example!
6. What is a function? How does function calling work? Explain function execution with an example!
7. What is the Git system? What problems can be solved with Git? Explain its core commands!
8. What is the Make tool? How does it work? Explain its basic usage! What is the structure of a Makefile?
9. What is Doxygen? How does it work? Explain its basic usage!
10. Define the term Cross Compiling! What are the basic tools for an embedded project development?
11. What is an RTOS? What are the basic components of an RTOS?
12. What is a Scheduler? What is the difference between cooperative and preemptive multitasking?
13. Define the term Thread! What is thread-safe programming and how can we implement it?
14. What is a semaphore? Where and how do we use it?
15. Define the term Hardware Abstraction Layer!