UNIT V

EMBEDDED SYSTEM APPLICATION DEVELOPMENT

5 REAL TIME OPERATING SYSTEM PROGRAMMING-I:μC/OS-II And V x Works

Kernel of an RTOS

• Used for real-time programming features to meet hard and soft real time constraints,
• Provides for preemption points at kernel user controlled dynamic priority changes fixed memory Block a synchronous IO s , user processes in kernel space and other functions for a system.

Common options available for selecting an RTOS

Complex multi tasking embedded system design requirements

- Integrated Development Environment,
- Multiple task functions in Embedded C or Embedded C++,
- Real time clock ─ hardware and software timers,
- Scheduler,
- Device drivers and device manager,
- Functions for inter-process communications using the signals event flag group , semaphore - handling functions for the queues , mail boxes , pipe and sockets,
- Additional functions for example, TCP/IP or USB port, other networking functions,
- Error handling functions and Exception handling functions ,and
- Testing and system debugging software for testing RTOS as well as developed embedded