

Embedded Systems based Questions and Answers

Q1. What is an embedded system?

Ans. An embedded system is a special purpose computer system which is completely encapsulated by device it controls. It is a programmed hardware device in which the hardware chip is programmed with specific function. It is a combination of hardware and software.

Q2. What are the characteristics of embedded system?

Ans. The Characteristics of the embedded systems are as follows-

1. Sophisticated functionality
2. Real time behavior
3. Low manufacturing cost
4. Low power consumption
5. User friendly
6. Small size

Q3. What are the types of embedded system?

Ans. They are of 4 types

1. General computing
2. Control System
3. Signal Processing
4. Communication and network

Q4. What is digital signal controller ?

Ans. DSC is 16 bit RISC machine that combines control advantages of micro-controller and digital signal processing to produce tightly coupled single chip-single instruction stream solution for embedded system design.

Q5. What are the components of embedded system?

Ans. Microcontroller, microprocessor, DSC, DSP, busses, system clock, Read only Memory(ROM), RAM, Real time clock these are the components of embedded system.

Q6. Why we use embedded systems?

Ans. Embedded systems avoid lots of electronic components and they have rich built in functionality. They reduces the cost and maintenance cost and the probability of failure of embedded system is less so embedded system are in very much use now a days.

Q7. What are the languages used in embedded system?

Ans. Assembly language and C are basically used for embedded system. Java and ADA are also preferred.

Q8. How does combination of functions reduce memory requirement in embedded system?

Ans. By using functions the amount of code that has to be dealt with is reduced thus redundancy is eliminated for everything common in function.

Q9. What is the significance of watchdog timer in ES?

Ans. It is a timing device which is set to predefined time interval and some task is to be performed at that time. It is used to reset original state when an inappropriate event take place.It is usually operated by counter device.

10. What is the difference between mutexes and semaphores?

Ans. Semaphores are the synchronization tool to overcome critical section problem. Mutex is also a tool that is used to provide deadlock free mutual exclusion.It protects access to every critical data item, if the data is locked and is in use,it either waits for the thread to finish or awakened to release the lock from its inactive state.

