Assignment-1

The due date for submitting this assignment has passed. As per our records you have not submitted this assignment.

Due on 2018-08-15, 23:59 IST.

1) An embedded system is a:

- [ ] Physical system enclosed within a computing system
- [ ] Physical system enclosed within a memory system
- [ ] Memory system enclosed within a physical system
- [ ] Computing system enclosed within a physical system

No, the answer is incorrect.

Score: 0

Accepted Answers:
- Computing system enclosed within a physical system

2) A real-time system must:

- [ ] Always produce correct outputs within a short time
- [ ] Sometimes produce correct outputs within a stipulated time
- [ ] Always produce correct outputs within a stipulated time
- [ ] Sometimes produce correct outputs within a short time

No, the answer is incorrect.

Score: 0

Accepted Answers:
- Always produce correct outputs within a stipulated time

3) Which of the following systems could reasonably be considered to be safety-critical?

- [ ] Video-editing software
- [ ] The software that controls traffic lights

1 point
4) Consider an embedded system with an aperiodic control task which arrives at time instant 2 (from system start) and requires 4 time units to complete execution. The processor starts executing this job 2 time units subsequent to its arrival. What is the response time for this job?

- 2
- 4
- 6
- 8

No, the answer is incorrect.
Score: 0
Accepted Answers: 6

5) Design a mealy-type FSM to check whether a given integer is divisible by 3. What is the minimum number of states required for this design?

- 1
- 2
- 3
- 4

No, the answer is incorrect.
Score: 0
Accepted Answers: 3

6) A mealy-type FSM associates outputs to:

- States
- Transitions
- Both states and transitions
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers: Transitions

7) The statechart language can be used to represent:

- FSM
- FSMD
- HCFSM
- PSM

No, the answer is incorrect.
Score: 0
Accepted Answers: FSM, FSMD, HCFSM

8) In a HCFSM, AND-decomposition is used to model:
9) Accurate estimates on execution times are difficult to obtain in embedded systems due to:

- Micro-architectural intricacies such as pipeline stalls
- Contention for shared caches
- External inputs/outputs
- Contention among programs running on a set of processors

No, the answer is incorrect.
Score: 0
Accepted Answers:
- Micro-architectural intricacies such as pipeline stalls
- Contention for shared caches
- External inputs/outputs
- Contention among programs running on a set of processors

10) A hard real-time safety-critical embedded system should:

- Be verifiable and testable
- Exhibit guaranteed worst-case performance
- Exhibit high average-case performance
- Be predictable and reliable

No, the answer is incorrect.
Score: 0
Accepted Answers:
- Be verifiable and testable
- Exhibit guaranteed worst-case performance
- Be predictable and reliable