Week 2 : Assignment 2

The due date for submitting this assignment has passed.

Due on 2021-08-18, 23:59 IST.

As per our records you have not submitted this assignment.

1) Which of the following are true about the timing constraints in an embedded real-time system? *1 point*

a. Performance constraints are imposed on the response of the system.
b. Performance constraints are imposed on the stimuli generated by the environment.
c. Behavioral constraints are imposed on the stimuli generated by the environment.
d. Behavioral constraints are imposed on the response of the system.
e. Behavioral constraints are imposed on both the stimuli generated by the environment and the response of the system.

a
b
c
d
e

No, the answer is incorrect.
Score: 0

Accepted Answers:
a
c

2) Which of the following are true of the delay constraint of an events e1 from another event e2? The result produced by the task is discarded if produced after deadline *1 point*

a. It expresses minimum time delay permitted for the occurrence of the events e1 from the occurrence of e2
b. It expresses maximum time delay permitted for the occurrence of the event e1 from the occurrence of e2
c. It expresses the maximum separation of the occurrence of e2 from the occurrence of e1
d. It expresses the minimum separation of the occurrence of e2 from the occurrence of e1

a
b
c
d

No, the answer is incorrect.
Score: 0

Accepted Answers:
d

3) Consider the following statement concerning a telephone system: "Once the dial tone appears, the first digit must be dialed within 30 seconds, Otherwise the system enters an idle state and an idle tone is produced." Which of the following can be said of this statement? *1 point*

a. A behavioral constraint.
b. A performance constraint
c. An S-S (Stimulus-Stimulus) type deadline constraint
d. An S-S (Stimulus-Stimulus) type delay constraint
e. An R-S (Response-Stimulus) type deadline constraint
f. An R-S (Response-Stimulus) type delay constraint
g. An R-R (Response-Response) type deadline constraint
h. An R-R (Response-Response) type delay constraint
i. An S-R (Stimulus-Response) type deadline constraint
j. An S-R (Stimulus-Response) type delay constraint

a
b
c
d
e
f
g
h
i
j

No, the answer is incorrect.
Score: 0

Accepted Answers:
a
e

4) Consider the following statement concerning a telephone system: "Once the receiver of the hand set is lifted, the dial tone must be produced by the system within 2 seconds, otherwise a beeping sound is produced until the handset is replaced." Which of the following can be said of this statement? *1 point*

a. A behavioral constraint.
b. A performance constraint
c. An S-S (Stimulus-Stimulus) type deadline constraint
d. An S-S (Stimulus-Stimulus) type delay constraint
e. An R-S (Response-Stimulus) type deadline constraint
f. An R-S (Response-Stimulus) type delay constraint
g. An R-R (Response-Response) type deadline constraint
h. An R-R (Response-Response) type delay constraint
i. An S-R (Stimulus-Response) type deadline constraint
j. An S-R (Stimulus-Response) type delay constraint

a
b
c
d
e
f
g
h
i
j

No, the answer is incorrect.
Score: 0

Accepted Answers:
b
i

5) Consider the following statement concerning a telephone system: "When the temperature of a chemical reactor is sensed to rise above 200°C, the heater needs to be shut-off within 10mSec." Which of the following can be said of this statement? *1 point*

a. A behavioral constraint.
b. A performance constraint
c. An S-S (Stimulus-Stimulus) type deadline constraint
d. An S-S (Stimulus-Stimulus) type delay constraint
e. An R-S (Response-Stimulus) type deadline constraint
f. An R-S (Response-Stimulus) type delay constraint
g. An R-R (Response-Response) type deadline constraint
h. An R-R (Response-Response) type delay constraint
i. An S-R (Stimulus-Response) type deadline constraint
j. An S-R (Stimulus-Response) type delay constraint

a
b
c
d
e
f
g
h
i
j

No, the answer is incorrect.
Score: 0

Accepted Answers:
b
i

6) Consider the following statement concerning a telephone system: "Once a digit is dialed, the next digit should be dialed after at least 1 second, otherwise, a beeping sound is produced until the call initiator replaces the handset." Which of the following can be said of this statement? *1 point*

a. A behavioral constraint.
b. A performance constraint
c. An S-S (Stimulus-Stimulus) type deadline constraint
d. An S-S (Stimulus-Stimulus) type delay constraint
e. An R-S (Response-Stimulus) type deadline constraint
f. An R-S (Response-Stimulus) type delay constraint
g. An R-R (Response-Response) type deadline constraint
h. An R-R (Response-Response) type delay constraint
i. An S-R (Stimulus-Response) type deadline constraint
j. An S-R (Stimulus-Response) type delay constraint

a
b
c
d
e
f
g
h
i
j

No, the answer is incorrect.
Score: 0

Accepted Answers:
a
d

7) Suppose three periodic hard real-time tasks T1, T2, and T3 have periodicity of 100 milliSeconds, 150 milliSeconds, and 200 milliSeconds respectively. These three tasks are to be scheduled using a table-driven scheduler. How many entries does the schedule table have? *1 point*

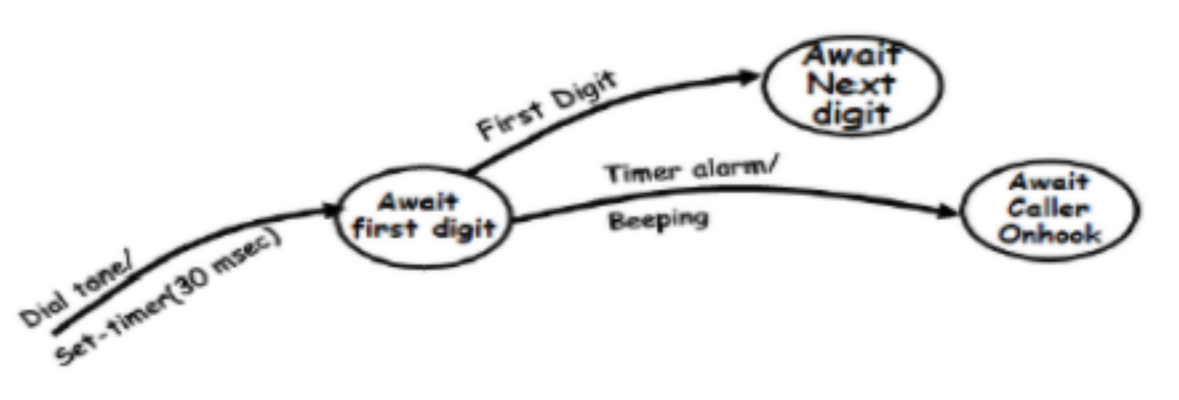
a. 10
b. 12
c. 13
d. 16
e. 20

a
b
c
d
e

No, the answer is incorrect.
Score: 0

Accepted Answers:
c

8) Consider the following model of a time constraint. What does it model? *1 point*



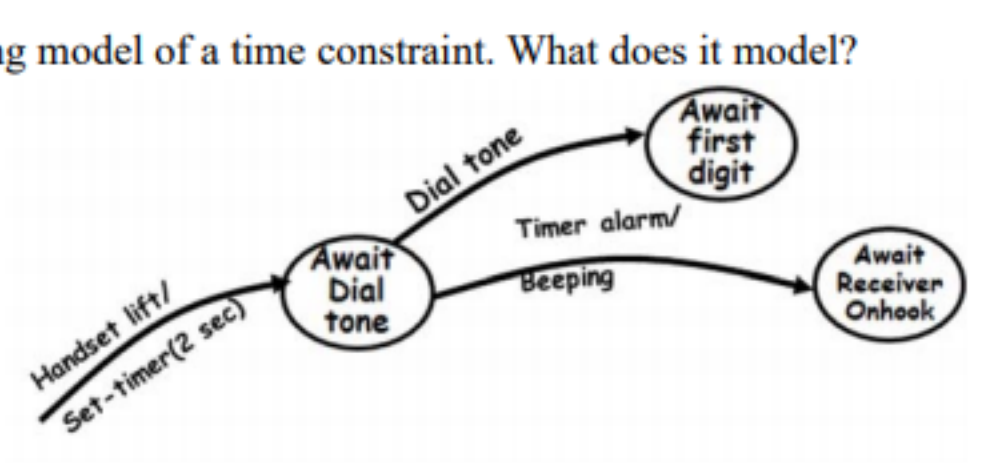
a. An R-S deadline constraint
b. An R-S delay constraint
c. An S-S deadline constraint
d. An S-S delay constraint
e. An R-R deadline constraint
f. An R-R delay constraint
g. An S-R deadline constraint
h. An S-R delay constraint

a
b
c
d
e
f
g
h

No, the answer is incorrect.
Score: 0

Accepted Answers:
a

9) Consider the following model of a time constraint. What does it model? *1 point*



a. An R-S deadline constraint
b. An R-S delay constraint
c. An S-S deadline constraint
d. An S-S delay constraint
e. An R-R deadline constraint
f. An R-R delay constraint
g. An S-R deadline constrain
h. An S-R delay constraint

a
b
c
d
e
f
g
h

No, the answer is incorrect.
Score: 0

Accepted Answers:
g

10) Which one of the following is a satisfactory definition of the response time of a job? *1 point*

a. The time between a job becoming ready and the job completing
b. The time between a job starting to execute and the job completing
c. The time between a job becoming ready and the job being taken up for execution
d. The total time a job waits before becoming ready
e. The total amount of time a job spends in the ready queue

a
b
c
d
e

No, the answer is incorrect.
Score: 0

Accepted Answers:
a

11) Given that two tasks in a system have different phases, which of the following can be possible in this system? *1 point*

a. They have different periods
b. They have different execution times
c. Some of the instances of the two tasks may arrive exactly at the same time
d. They have different deadlines
e. Some of the instances of the two tasks may arrive at different time instants

a
b
c
d
e

No, the answer is incorrect.
Score: 0

Accepted Answers:
c
e

12) Suppose three periodic tasks with execution times of 20 milliseconds, 30 milliseconds, and 40 milliseconds, and periods of 150 milliseconds, 250 milliseconds, and 350 milliseconds are to be run using a basic table-driven scheduler. What is the minimum time period for which the task schedule should be stored in a schedule table? *1 point*

a. 80 milliseconds
b. 120 milliseconds
c. 350 milliseconds
d. 750milliseconds
e. 5250milliseconds.

a
b
c
d
e

No, the answer is incorrect.
Score: 0

Accepted Answers:
e