

## Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

Week 4

Week 5

Week 6

Week 7

Week 8

Week 9

Week 10

Week 11

Week 12

● Lecture 57 : Review of Basic Database Concepts

● Lecture 58 : Applications and Issues of Real-Time Database

● Lecture 59 : Characteristics of Temporal Data

● Lecture 60 : Locking-Based Concurrency Control In Real-Time Databases

● Lecture 61 : Concurrency Control In Real-Time Databases and Commercial RT Databases

● Lecture Materials

○ Quiz: Week 12 : Assignment 12

● Feedback Form of Week 12

Assignments Solution

Download Videos

Live Interactive Session

# Week 12 : Assignment 12

The due date for submitting this assignment has passed.

Due on 2021-10-20, 23:59 IST.

As per our records you have not submitted this assignment.

- 1) Which one of the following properties requires all changes made by a committed transaction to become permanent in the data base, surviving any subsequent failures?

1 point

- a. Atomicity
- b. Consistency
- c. Isolations
- d. Durability
- e. All of the above.

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 2) Which of the following protocols are used to ensure isolation of transactions?

1 point

- a. Clock synchronization protocols
- b. Roll back protocols
- c. Locking protocols
- d. Resource sharing protocols
- e. Real-time communication protocols
- f. Routing protocols

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.
- ☐ f.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

c.

- 3) The Service Management System (SMS) deployed in Internet Service Providers, manages which of the following items?

1 point

- a. Session status.
- b. Network Information.
- c. Subscriber Information.
- d. Policies.
- e. All of these

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

e.

- 4) The periodic data generated by a temperature sensor in a blast furnace is an example of which of the following?

1 point

- a. Absolute data
- b. Relative data
- c. Temporal data
- d. Invalid data
- e. Temporary data

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

- 5) Which of the following is a temporal data in the example of Anti-missile system?

1 point

- a. Current position of missile
- b. Current velocity of missile
- c. Current acceleration of missile
- d. All of these

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 6) Suppose, temporal data are denoted using triplets of the form {value, avi, timestamp} and the different components of the temporal data have their usual meanings. Assume that, current time = 2700msec. Which of the following temporal data items are absolutely valid?

1 point

- a. d1=(10, 100mSec, 2300mSec)
- b. d2=(10, 200mSec, 2400mSec)
- c. d3=(10, 100mSec, 2500mSec)
- d. d4=(20, 200mSec, 2500mSec)
- e. d5=(20, 200mSec, 2600mSec)

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

e.

- 7) Suppose, temporal data are denoted using triplets of the form {value, avi, timestamp} and the different components of the temporal data have their usual meanings. Assume that the relative consistency set  $R = \{\text{temp, pressure}\}$  and the relative validity interval associated with  $R$  ( $R_{vi}$ ) = 2mSec. Which of the following temporal data sets are relatively consistent?

1 point

- a. d1=[temp = {347 C, 5 mSec, 95 mSec}, press = {50 bar, 10 mSec, 97 mSec}]
- b. d2=[temp = {347 C, 5 mSec, 95 mSec}, press = {50 bar, 10 mSec, 92 mSec}]
- c. d2=[temp = {347 C, 5 mSec, 95 mSec}, press = {50 bar, 10 mSec, 91 mSec}]
- d. d2=[temp = {347 C, 5 mSec, 95 mSec}, press = {50 bar, 10 mSec, 98 mSec}]
- e. d2=[temp = {347 C, 5 mSec, 95 mSec}, press = {50 bar, 10 mSec, 96 mSec}]

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

a.

e.

- 8) In which of the following concurrency control protocols, when a transaction requests a lock held by a lower priority transaction, the lock holding lower priority transaction is aborted?

1 point

- a. 2PL
- b. Strict 2PL
- c. 2PL-WP
- d. 2PL-HP
- e. PCP

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 9) Which of the following values is defined dynamically at run time, in priority ceiling protocol?

1 point

- a. Read-Ceiling
- b. Write-Ceiling
- c. Absolute-Ceiling
- d. Read-Write Ceiling
- e. All of the above

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

d.

- 10) In Forward OCC protocol, the serialization order is which of the following?

1 point

- a. The order in which the transactions are aborted
- b. The order in which the transactions commit
- c. The order in which the transactions are rejected
- d. None of these

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.

- 11) In which of the following concurrency control protocols, once a transaction reaches its validating phase, it is guaranteed commitment?

1 point

- a. PCP
- b. Forward-OCC
- c. OCC-BC
- d. OCC-Sacrifice
- e. SCC

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

c.

- 12) The hard real-time database system MDARTS is a library of which of the following data management classes?

1 point

- a. C
- b. C++
- c. C#
- d. Java
- e. Perl

- ☐ a.
- ☐ b.
- ☐ c.
- ☐ d.
- ☐ e.

No, the answer is incorrect.

Score: 0

Accepted Answers:

b.