Class/ Semester/ Subject Code: S.Y.B.Sc.(C.S.) / III /-USCS304 -Database Management Systems

Date : 07.10.2019   Time : (2½ Hours)   Total Marks: 75

N.B.   (1)   All questions are compulsory.
       (2)   Figures to the right indicate marks for respective sub questions.
       (3)   Figures to the right indicate marks.
       (4)   Illustrations, in-depth answers and diagram will be appreciated.
       (5)   Mixing of sub-question is not allowed.

Q.1)   Attempt all. (Each of 5 marks)   (15)
       (a)   Multiple Choice Questions (Choose the correct alternative.)   (5)
        (i)   Which parameter acts like a return variable inside the subprogram?
              (a)   IN   (b)   OUT
              (b)   Both a and b   (d)   None of above
       (ii)   Which of the following scenarios ends an Oracle transaction?
              (a)   COMMIT or ROLLBACK is   (b)   User disconnects from
                    issued   Oracle
              (c)   User process terminates   (d)   All of the above
                    abnormally
      (iii)   Which of the following object types cannot be replicated?
              (a)   Data   (b)   Trigger
              (c)   View   (d)   Sequence
       (iv)   _____ of the following returns the next value in a specified
              sequence.
              (a)   CURRVAL   (b)   NEXTVAL
              (c)   Both A & B   (d)   None of the above
        (v)   Which statement chooses from a sequence of conditions, and executes a
              corresponding statement?
              (a)   CASE Statement   (b)   CLOSE Statement
              (c)   COMMIT Statement   (d)   None of the above

       (b)   Fill in the blanks. (IF-THEN-ELSIF, RETURN, GOTO, START   (5)
              WITH, EXIT, WHILE)
        (i)   _____ Specify the first sequence number to be generated.
       (ii)   In a function, the _____ statement assigns a specified value to the
              function identifier and returns control to the invoker.
      (iii)   The _____ statement causes the code to branch to the label after the
              statement executes.
       (iv)   The Oracle PL/SQL uses _____ statement to skip the current block.
        (v)   The _____ statement allows you to choose between several
              alternatives.

       (c)   Short Answers Write answers in one or two lines.   (5)
        (i)   What is Durability in transaction management?
       (ii)   Define the term schedule in Transection management.
      (iii)   What Heap file organization?
       (iv)   When is a EXCEPTION statement required?
        (v)   What is nested procedure?

Q.2) Attempt the following:(ANY THREE) (Each of 5 marks) (15)
  (i) What is PL/SQL Engine? Draw PL/SQL BLOCK structure. Explain each block.
  (ii) What are the main characteristics of the database approach over file processing approach?
  (iii) Compare between statement level and row level trigger.
  (iv) Create simple procedure to find minimum number from two numbers using IN and OUT parameters.
  (v) Describe use of indexing in DBMS. What are its advantages?
  (vi) Write a row trigger to insert the existing values of the salary table in to a new table when the salary table is updated.

Q.3) Attempt the following:(ANY THREE) (Each of 5 marks) (15)
  (i) With the help of an example, explain use of GOTO statement. What is the role of NULL value in PL/SQL?
  (ii) Explain different comparison and logical operators used in PL/SQL.
  (iii) Write a short note on Conditional Control statement in PL/SQL.
  (iv) Write a short note on: CASE WHEN statement and EXIT WHEN statement.
  (v) State the data types in PL/SQL with example and explain how variables can be declared in PL/SQL.
  (vi) Write a PL/SQL code to print largest number from three numbers (accept three numbers from user).

Q.4) Attempt the following:(ANY THREE) (Each of 5 marks) (15)
  (i) What is deadlock? Briefly explain deadlock prevention mechanism.
  (ii) State and explain 2PL protocol.
  (iii) Explain Commit, Rollback and Savepoint in PL/SQL transaction.
  (iv) What is Log file? State purpose and importance of it.
  (v) State and explain rules of strict Two – phase locking protocol.
  (vi) Explain the three phases of the ARIES recovery model.

Q.5) Attempt the following:(ANY THREE) (Each of 5 marks) (15)
  (i) State and explain the types of parameters we can use in a stored procedure.
  (ii) Write a PL/SQL code to calculate the total salary of first n records of emp table. The value of n is passed to cursor as parameter.
  (iii) Write a short note on: i) FOR loop   ii) While Loop in PL/SQL
  (iv) Explain %ROWTYPE attribute with any one example.
  (v) What is serializability? Define serial schedule and serializable schedule.
  (vi) State and explain how transaction and dirty page table are used in recovery.

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