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| IT_Logo  **ITEC224**  **Database Programming**  **Spring 2015-2016** | **EASTERN MEDITERRANEAN UNIVERSITY**  **School of Computing and Technology**  **Department of Information Technology**  **Final 06/06/2016 🕘90 minutes** |

Student Id : ………………… Name :……………………………………Signature: ..……………….

1. List and discuss the levels of process and data distribution 3x3=9

*(6 pts)*

1. List and briefly describe technical responsibilities of DBA (technical role) 6x2=12

*(6 pts)*

Takes(studentId, CourseCode, Mark)

Course(CourseCode, Title, credits,deptno)

Student(studentId, Name, Deptno)

1. Use the tables given above to write a function that performs the following actions:

* Accept s one parameter: studentId.
* Print CourseCode of all courses taken by the student with the student id that was passed as parameter.
* If there is no error return the total number of courses taken by that student
* Handle the following error conditions as exception
  + Return -1 if any one relevant predefined oracle exception is raised.
  + Return -2 if the non-predefined oracle exception with error number -123 is raised
  + Return -3 if the user defined exception that student id cannot start with 0 (zero) is raised
  + Return Oracle Error number in case of any other exception.

*(9 pts)*

1. Use the following table to write a procedure that increases the mark of students in a given course. The procedure will accept a courseCode and a extramark as input parameter. Marks of all students of the course, that matches the coursecode parameter , will be increased by adding extramark to the mark. Make sure that the final value of mark (after the addition) does not exceed 100.

*(9 pts)*

1. Write a trigger that prints a message as shown below whenever someone modifies the contents of the take table

Takes table was modified on <the current date>

*(5 pts)*

1. Convert the conceptual ERD shown below to logical ERD. *(18 pts)*

Consider the following additional requirements

A task can be assigned to multiple employees even for the same project. Each project must have between 1 and 3 project managers who have to be engineers. Interns are also employees and they may be assigned tasks. Each project may have as many requirements as needed. We need to know the number of requirements.

