Program**: B.Tech**   **Semester: 5th**   **Department:** CSE
Course Code: CS5401   **Full Marks: 10 Course Name:** Database Management Systems

Answer all the Questions

Q1)   [6]

   a) Consider the table **ODIPlayers(PID, Lname, Country, Team1, Team2, MID, Date, Ground, Nruns,
      Nwickets, Yborn, Place)** and the functional dependencies are as follows:
      PID->Lname, PID->Country, MID->Team1, MID->Team2, PID->Yborn, PID->Place, MID->Date,
      MID->Ground, (PID, MID) ->Nruns, (PID, MID) ->Nwickets
      i.   What are the candidate keys?
      ii.   Normalize the above relation in 2NF.

   b) Normalize the below relation to the highest normal form.
      Employee (Name, ProjectNo, EmpId, Marks) and the functional dependencies are as follows:
      (Name, ProjectNo) -> Marks
      (EmpId, ProjectNo) ->Marks
      Name->EmpId
      EmpId->Name

Q2)   Consider the below relations: [4]
        Vehicle (reg_no, make, colour)
        Person (eno, name, address)
        Owner (eno, reg_no)

        For the given query:
        Select eno, name, reg_no
        From Person, Owner
        Where Person.eno = Owner.eno and Person.name = 'Hari';

        a) Construct the initial query tree for the above query.
        b) Show how the query tree may be transformed to process the query efficiently using heuristic
        approach.
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