INFO20003 Mid-Semester Test SAMPLE

School of Computing and Information Systems
The University of Melbourne

Subject Number:	INFO20003
Subject Title:	Database Systems
Reading + Writing Time:	40 minutes
Number of Questions/Grading Scheme:	2 questions, a total of **10** marks. This forms **10**% of your overall grade for the subject.
Authorised Materials:	None

Write your **student id** here: _____

Use **only** the given space for each question to write down your answers

You may (and probably should) use PENCIL to answer this test!

This page is intentionally left blank.

Section A: Database Design

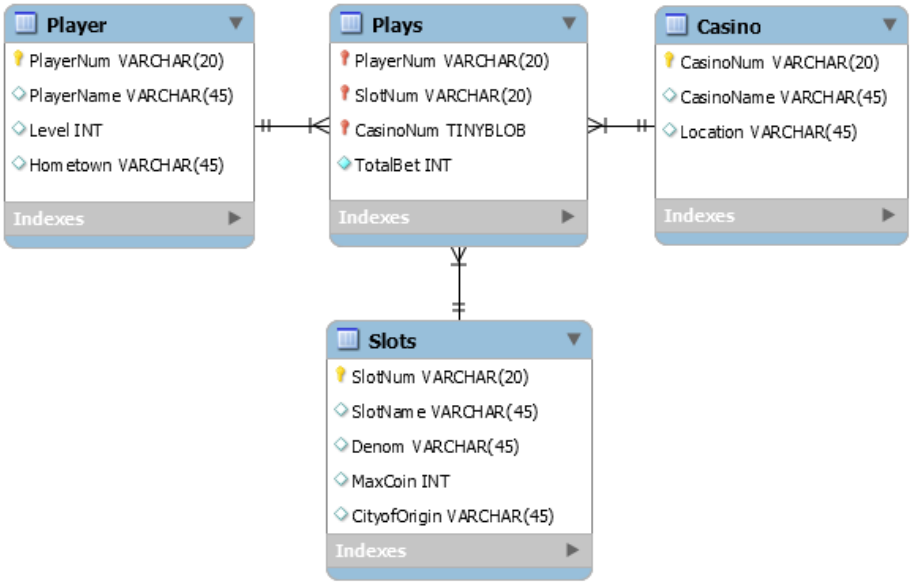
A sports league wants to maintain data about a set of teams that play in the league and the players within the teams. Each player can at one point in time play only for one team but, naturally, each team has multiple players. Players move frequently from one team to another and therefore, the league needs to know when a player started to play for a particular team and when their contract with that team ended or is scheduled to end. Teams have multiple coaches, each of whom has a specific role within the team. Each team belongs to a division. The league has to also keep track of the games that the teams play; relevant data about a game include its date, city it is played in, home team/visitor roles, and the score.
For this task you are requested to draw a **Conceptual** ER/EER model of the sports league using either Chen's notation or Crow's foot notation. Make sure that each entity has at least two attributes. State any assumptions deemed appropriate.

A1) Draw a **Conceptual** Model (ER / EER) for the scenario described above. Write comments and reasoning in the space provided on the next page. (4 marks)

A2) ASSUMPTIONS, COMMENTS, EXPLANATIONS relating to answer to 1a.
(1 mark – based on statement explanation and appropriateness)

Section B: SQL and Relational Algebra

Use the schema and data tables below to write queries for questions B1-B5.



Player

PlayerNum	PlayerName	Level	Hometown
P10	Sheldon	20	LasVegas
P20	Leonard	10	Philadelphia
P30	Raj	30	Philadelphia
P40	Penny	20	LasVegas
P50	Howard	30	AtlanticCity

Slots

SlotNum	SlotName	Denom	MaxCoin	CityOfOrigin
S100	WheelOfFortune	Penny	12	LasVegas
S200	TripleDiamonds	Quarter	17	Philadelphia
S300	GoldMountain	Dollar	17	Biloxi
S400	GoldMountain	Penny	14	LasVegas
S500	WildCherry	Dollar	12	Philadelphia
S600	LuckySeven	Penny	19	LasVegas

Casino

CasinoNum	CasinoName	Location
C1	Harrahs	Philadelphia
C2	Ceasers	Biloxi
C3	Bellagio	AtlanticCity
C4	MonteCarlo	AtlanticCity
C5	Tropicana	LasVegas
C6	TajMahal	OceanCity
C7	MoheganSun	LasVegas

Plays

PlayerNum	SlotNum	CasinoNum	TotalBet
P10	S100	C1	200
P10	S100	C4	700
P20	S300	C1	400
P20	S300	C2	200
P20	S300	C3	200
P20	S300	C4	500
P20	S300	C5	600
P20	S300	C6	400
P20	S300	C7	800
P20	S500	C2	100
P30	S300	C1	200
P30	S400	C2	500
P40	S600	C3	300
P40	S600	C7	300
P50	S200	C2	200
P50	S200	C4	100
P50	S500	C5	500
P50	S500	C7	100
P50	S600	C2	200
P50	S100	C4	100
P50	S300	C4	200
P50	S400	C4	800
P50	S500	C4	400
P50	S600	C4	500

This page is intentionally left blank.

B1. Get slotMachine numbers (using SlotNum Attribute) for slotMachines played at any casino by a player from the same city as that casino. (1 mark in total)

B1a. Write a relational algebra expression corresponding to this request (0.5 marks)

B1b. Write an SQL statement for this request (0.5 marks)

B2. Name the casinos that have been visited by Sheldon. (1 mark in total)

B2a. Write a relational algebra expression corresponding to this request (0.5 marks)

B2b. Write an SQL statement for this request (0.5 marks)

B3. Get the total sum of totalBets per slotMachine for player P50. (1 point)

B4. Name the slotMachines located in any casino in LasVegas. (1 point)

B5. Print all player numbers for players who are at least Level 20 and have bet more than 1000 Dollars. (1 point)

Your own workspace

These pages will NOT be marked!

Your own workspace

These pages will NOT be marked!

Your own workspace

These pages will NOT be marked

DO **NOT** TURN OVER THIS PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.

Place your student card on the desk in front of you.

Turn off all of your digital devices and place them under your desk.