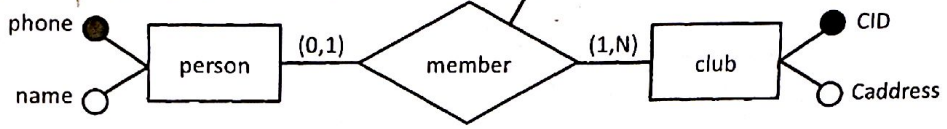
Question 10. [6 MARKS]

Consider the following ER diagram:

"Each person can be a member of 0 to 1 clubs"

"Each club can have 1 to +∞ people as members"



i.e. each club has AT LEAST 1 member!

Which of these cardinalities is possible? **Don't guess.** There is 1 mark for each correct answer and -0.5 for each incorrect answer. The minimum mark is 0.

From above interpretations, we need:

$|person| \geq |member|$

$|club| \leq |member|$

$\therefore 0 \leq |club| \leq |member| \leq |person| \leq +\infty$

|person|	|member|	|club|	Is it possible?
5	0	8	YES (No)
5	7	8	YES (No)
5	0	5	YES (No)
5	10	5	YES (No)
11	3	4	YES (No)
11	9	4	(YES) No

Question 11. [16 MA

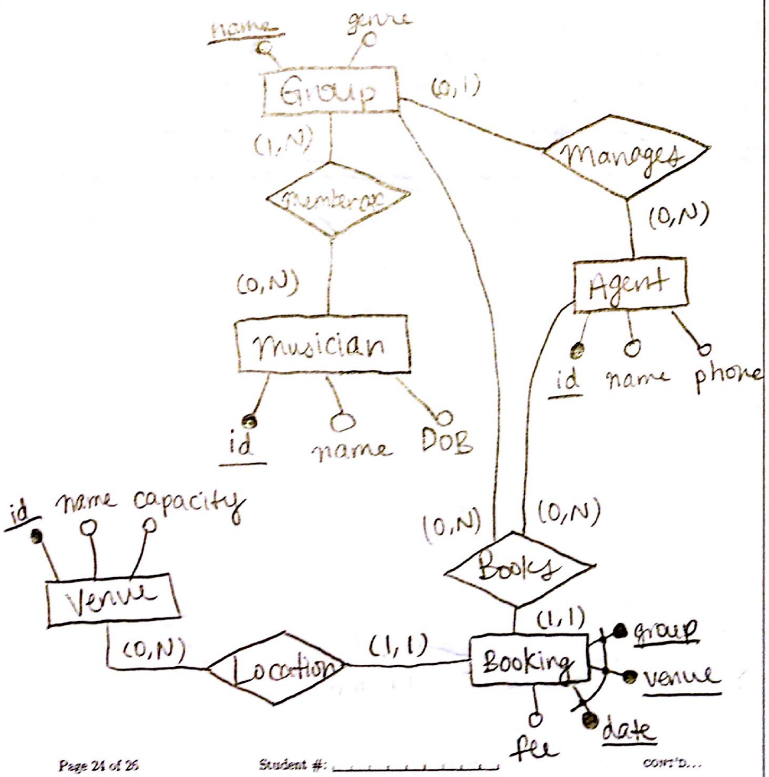
In this question you will desi
that needs to be represented:

- A musical group has a
and one or more musici
- A musician has an uniq
- A musical group may b
- An agent has unique I
groups, including none.
- A venue is a place whe
unique ID, a name, and
- Agents book musical gr
on a particular date, an

Note: A group can be booke
anything to prevent this.

Part (a) [5 MARKS]

Design an Entity-Relationship Model (ER Diagram) for this information. Clearly indicate primary keys by using solid circles, or by underlining attribute names, as the textbook does. Show the cardinalities with which an entity participates in a relationship with a pair of the form (minimum, maximum). Alternatively, you can use the arrow notation of the textbook.



Part (b) [8 MARKS]

Translate your Entity-Relationship Model (ER Diagram) into a logical model (DB Schema). For each relation in your schema, provide its name, attributes and keys (underlined attributes).

Group (name, genre)
MemberOf (group, musician) → where:
MemberOf[group] ⊆ Group[name]
MemberOf[musician] ⊆ Musician[id]
Musician (id, name, DOB)

Manages (agent, group) → Manages[agent] ⊆ Agent[id]
Agent (id, name, phone) Manages[group] ⊆ Group[name]

Booking (group, venue, date, fee, agent) → Booking[agent] ⊆ Agent[id]
Booking[group] ⊆ Group[name]
Booking[venue] ⊆ Venue[id]

Venue (id, name, capacity)