

**2<sup>nd</sup> SEMESTER EXAM : INTRODUCTION TO DATABASES**

**Time allowed : 2hrs**  
**Class : BA1**

**NB : No document allowed**

- 1- Define the following terms : Database, Information system, Primary key, Foreign key **4mks**
- 2- Case studies **16mks**
  - 1) The organisers of the EXAM 2022 international multi-conference need to keep track of a large collection of workshops associated with the event. Initial requirements analysis brings out the following information about what needs to be recorded.
    - Each workshop has a name, and happens on a particular date — or dates, as some workshops last more than one day.
    - There are several participants, each of which may sign up to one or more workshops.
    - For each participant, it is important to record their name, email address, and the workshops which they wish to attend.
    - There are a number of meeting rooms at the conference venue, each of a fixed capacity. Meetings rooms are identified by a floor and room number.
    - Every workshop needs an allocated meeting room; where a workshop lasts for two days, it will use the same room on both days.

Draw an entity-relationship diagram suitable for representing this information and derive the relational model

- 3- A calendar program that allows users to browse each other's calendars and to book common appointments shall be developed. The program has a database which keeps track of the users and their calendars. You use the calendar to store data concerning appointments. An appointment starts and ends at a given time on a given day and is described by a text. You may specify that you wish to be reminded of an appointment. Reminders are of different kinds: a signal in the computer's loudspeaker, a pop-up window with the description of the meeting, or an e-mail containing the description. You may, for each reminder, specify how long before the appointment that you wish to be reminded.

Develop an E/R model of the database and derive the relational model