



**UTHM**

Universiti Tun Hussein Onn Malaysia

**UNIVERSITI TUN HUSSEIN ONN MALAYSIA**

**FINAL EXAMINATION  
(ONLINE)  
SEMESTER II  
SESSION 2019/2020**

COURSE NAME : DATABASE SYSTEM  
COURSE CODE : BIT 20803  
PROGRAMME CODE : BIT  
EXAMINATION DATE : JULY 2020  
DURATION : 3 HOURS  
INSTRUCTION : 1. ANSWER ALL QUESTIONS.  
2. THE STUDENTS SHOULD  
UPLOAD THE ANSWER  
BOOKLET (PDF/ WORD  
FORMAT) WITHIN 30  
MINUTES AFTER  
EXAMINATION PERIOD

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

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TERBUKA

- Q1** (a) (i) Given a table structure shown in **Figure Q1(a)**. State the problem that you would encounter if you want to add or delete new city. (3 marks)

PROJECT CODE	PROJECT MANAGER	MANAGER PHONE	MANAGER ADDRESS	PROJECT BID PRICE
21-5Z	Holly B. Parker	904-338-3416	3334 Lee Rd., Gainesville, FL 37123	16833460.00
25-2D	Jane D. Grant	615-898-9909	218 Clark Blvd., Nashville, TN 36362	12500000.00
25-5A	George F. Doris	615-227-1245	124 River Dr., Franklin, TN 29105	92512420.00
25-9T	Holly D. Parker	904-330-7410	3334 Lee Rd., Gainesville, FL 37123	21663234.00
27-4Q	George F. Doris	615-227-1245	124 River Dr., Franklin, TN 29185	10314545.00
29-2D	Holly B. Parker	904-338-3416	3334 Lee Rd., Gainesville, FL 37123	25550000.00
31-7P	William K. Muce	904-445-2719	218 Marlon Rd., Stetson, FL 30155	50650000.00

**Figure Q1(a)**

- (ii) State a way you would solve **Q1(a)(i)** problem by altering the table structure (2 marks)
- (b) Answer **Q1(b)(i) – Q1(b)(iii)** based on a relational database management system **Figure Q1(b)**.

Hotel (hotelNo, hotelName, city)
Room (roomNo, hotelNo, type, price)
Booking (hotelNo, guestNo, dateFrom, dateTo, roomNo)
Guest (guestNo, guestName, guestAddress)

**Figure Q1(b)**

- (i) Identify a relations with composite key. (2 marks)
- (ii) Identify **THREE (3)** relations with cardinality 1: M accordingly. (6 marks)
- (iii) Identify **ONE (1)** relations with cardinality M: N. (2 marks)

**Q2** A database design has design an Entity Relationship Diagram (ERD) for a College at Parit Raja. The staffs are lecturer who need to do research and supervising student. The students need to register subject course and attend the course schedule.

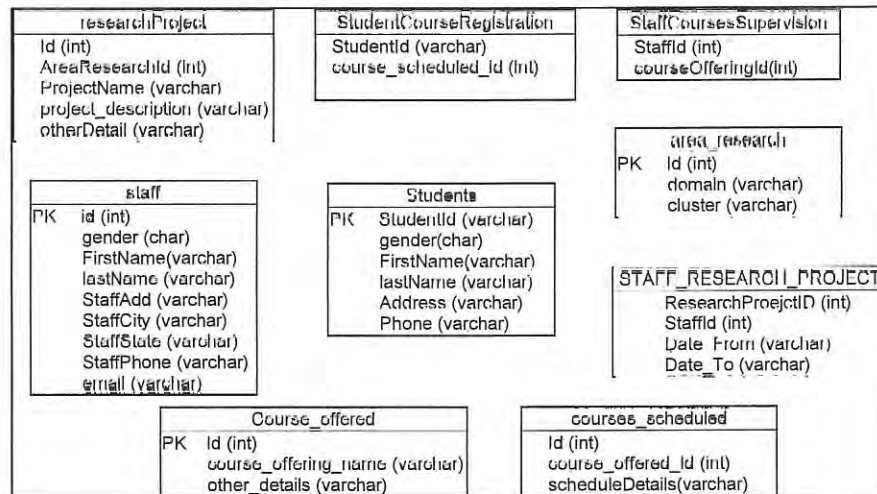


Figure Q2

- (a) Without adding new attributes, redraw a complete Entity Relationship Diagram (ERD) with identify keys and relationships based on **Figure Q2**. (16 marks)
- (b) **Figure Q2** does not follow **TWO (2)** best practices design of ERD. Identify the limitations and provide the best practice solutions. (4 marks)

- Q3** VideoStore database contains seven relations as shown in **Figure Q3**. Question **Q3(a)** until **Q3(e)** must be answered using SQL statement (s)

```
Movies (MovieNum, Title, YearReleased)
Stars (StarId, FirstName, LastName)
ActsIn (StarId, MovieNum)
Copies (BarCode, MovieNum, Format, RentalCode)
RentalRates (RentalCode, RentalPeriod, Rate)
Customers (CustNum, FName, LName, Address, HomePhoneNum,
MobileNum)
Rentals (CustNum, BarCode, DateDue, DateReturned)
```

**Figure Q3**

- (a) List all the columns of Parit Raja customers who do not have a home phone number. Note that "Parit Raja" may occur anywhere in their address.. (3 marks)
- (b) List the year-released and title of each movie that was released after the end of 2015 but before the end of 2019. List the information in ascending order of year-released, and then by alphabetical order of title whenever the year-released is the same. (3 marks)
- (c) List the number of copies for the movies that are recorded in the database, including the oldest YearReleased, the most recent YearReleased and the distinct YearReleased values. (4 marks)
- (d) List the titles and year released of all movies in which Brad Pitt is the actor. (5 marks)
- (e) List the name of the stars who act in at least four movies, including the number of movies for each star. (5 marks)



- Q4** (a) Consider the order form as shown in **Figure Q4**. Convert the order form into relation for a set of 1NF, 2NF, 3NF and 4NF relations. Show primary key and foreign key.

Order Form			
Order Number:	0001	Date:	01/01/2020
Customer Number:	C0001	Customer Name:	Maslan
Customer Address:	No 1, Jalan Parit Raja		
City:	Parit Raja, Malaysia		
Country:			
ProductNo	Description	Quantity	Unit Price
P123	Pencil	5	RM5.00
P234	Eraser	10	RM1.00
P345	Sharpener	20	RM10.00

**Figure Q4**

(25 marks)

- END OF QUESTION -