Rosary School
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Database Sample Questions with Mark Scheme

1 A manager of a computer store has created a relational database to keep track of its orders. She has created two tables that are linked together.

Table A stores the products.
Table B stores the order details.

The following data shows some records from the database.

Table A: products

Product_ID	Product_name	Unit_price
1232	PC Base unit	$300
1246	Monitor TFT	$250
1678	Mouse	$9
2314	Keyboard	$9
3214	Laser printer	$250

Table B: order details

Order_ID	Product_ordered	Quantity
1231	1232	1
1233	1246	10
1234	1678	15
1235	2314	4
1236	2314	16
1237	3214	20

(a) Name the most suitable primary key in the products table.

.....[1]

(b) Name a suitable foreign key in the order details table.

.....[1]

(c) On the data shown in the tables above, the following search is to be carried out:

(Unit_price>$250)

Write down the Order_ID resulting from this search.

.....[1]

(d) On the data shown in the tables at the start of question 11, the following search is to be carried out:

(Product_ID>2000) AND (Quantity<20)

Write down the Order_ID(s) resulting from this search.

.....[2]

(e) The store has created a report with a new field called total_price to be calculated at run time. This field will contain the number of units ordered multiplied by the price of each unit.

Write an expression to produce this result.

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.....[2]

2 The manager of a restaurant uses a database to store data about the food the restaurant uses. Part of the database is shown below.

Food_type	Packs_in_stock	Last_order_received	Re-order
Lentils	68	06/03/2017	N
Rice	54	10/03/2017	Y
Flour	19	01/02/2017	Y
Ghee	34	05/03/2017	Y

Below is a list of data types. Next to each one write down the field name which most closely matches that data type. Each answer must be different.

Date .....

Text .....

Boolean .....

Numeric .....

[4]

3 Part of a database report showing August temperatures in several cities in India is shown below.

Name of City	Max_temp	Min_temp
Kolkata	33	26
Chennai	34	26
Mumbai	31	26
Hyderabad	31	24
Allahabad	35	26

Describe how you would create a calculated field called temp_diff to show the difference between the maximum and minimum temperatures.

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.....[3]

4 The owner of a gardening company is planning to create a database to store the details of all his customers. He has the choice of using a flat file database or a relational database.

Discuss the advantages and disadvantages of using a relational database rather than a flat file database.

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.... [8]

1 **(a)** Product_ID [1]

(b) Product_ordered [1]

(c) 1231 [1]

(d) 1 mark for each correct answer
1235, 1236 [2]

(e) **Two** from:

(=)[Quantity]*[Unit_price]
1 mark for [Quantity] *
1 mark for [Unit_price] [2]

Question	Answer	Marks
2	Last_order_received	1
	Food_type	1
	Re-order	1
	Packs_in_stock	1

Question	Answer	Marks
3	One mark for creating a query/report **Two** from: [Max_temp]-[Min_temp] 1 mark for [Max_temp]– 1 mark for [Min_temp]	3

4	**Examples of answers written below** *Answers may make reference to, for example:* **Advantages of relational databases** Less data entry / data is stored only once / avoids duplication of data Less inconsistency of data Easier to edit data / records Easier to edit data / record format Easier to add / delete data / records More complex queries can be carried out Better security More ability to cater for future requirements / expansion **Disadvantages of relational databases** More complex than a flat file database as more tables are required Takes more time to set up More of a reduction in performance if many tables are needed Slower extraction of meaning from data Less robust due to broken keys and records / each table requires a key field and relationships to other tables More developer expertise / personnel to run the database: More expensive to create a relational database More processing power needed for complex queries. **Advantages of flat file databases** All records are stored in one place Easier to understand / use Sorting is simpler Filtering is simpler Can be used with a spreadsheet / single table DBMS	