KIND POSITIVE YOURSELF

Revision Questions 2 – Database Design & Development

1. Lyndsay and Jindra attend St Andrew's Primary School and Kerry attends Hillview Primary School.

(a) Draw an entity occurrence model to illustrate the relationship between primary school and pupil. 2

(b) State the *cardinality* of the relationship between primary school and pupil. 1

2. (a) Inverdon Electrical is a small company supplying electrical goods to a few shops in the local area. The structure of the data model they intend to use is shown below.

Customer	**Order**	**Supplier**	**Item**
Customer number	Item number*	Supplier name	Item number
Customer name	Order date	Supplier address	Item name
Customer address	Customer number*	Supplier telephone	Price
Customer telephone	Number ordered		Photo
			Supplier name*

Draw an *entity relationship diagram* to represent this data model. (6)

(b) The following data dictionary represents the Item entity. It has a number of missing entries which are highlighted as A, B, C, D and E. State a suitable entry for each of the missing values. (5)

Attribute	Data Type	Validation	Unique	Index	Key
Item number	A	>=1000 and <=9999	Y	Y	PK
Item name	Text		N	Y	
Price	B	>0·50 and <1000·00	N	N	
Photo	C		N	N	
Supplier name	Text	D	E	Y	FK

3. A health centre uses a single table database. Below is a record from this database. The primary key, Patient No, is created from the patient's initials and date of birth.

Patient No	HR270985
Name	Helen Robertson
Address	23 Gordon Road Perth PG3 6TY
Date of Birth	27/09/1985
Doctor's Name	Dr Ritchie
Doctor's Tel No	0845 5678348
Doctor's Room	5

(a) State two problems with using the meaningful identifier, Patient No, as a primary key. 2

(b) Explain why storing the address as a single attribute is not good database design. 2

(c) Define the term compound key. 2

4. Two entities, STUDENT and COURSE, are identified in the design of a college database. Anya, Ben, Carol and Dimitri are students. Leisure, Mathematics and Navigation are courses.

Anya takes Leisure and Navigation.
Carol takes Mathematics.
Dimitri takes Leisure and Mathematics.

(a) Draw an *entity occurrence* model to illustrate the relationship between STUDENT and COURSE. 2

(b) State the *cardinality* of the relationship between STUDENT and COURSE. 1