

Boolean logic – 2021/20 O Level 2210

1. **Nov/2021/Paper2/Paper_22/No.6**

A pet supplier uses the database table, STOCK, to keep records of its products for pets.

The fields are:

Field name	Description
ProductID	code to identify the product
ProductName	name of product
ProductDescription	information about the product
Animal	type of animal the product is for, e.g. cat, bird, horse
ProductType	type of product, e.g. food, toy, medicine
InStock	whether the product is in stock or not

(a) (i) Identify the field that could have a Boolean data type.

..... [1]

(ii) Identify the field that should be used as the primary key.

..... [1]

(b) Complete the query-by-example grid to output the products intended for a cat that are in stock. Display only the primary key and the name of the products. The output should be sorted by the primary key.

Field:					
Table:					
Sort:					
Show:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:					
or:					

[4]

2. June/2021/Paper2/Paper_21/No.6

A library uses a database table, GENRE, to keep a record of the number of books it has in each genre.

ID	GenreName	Total	Available	Loaned	Overdue
ABI	Autobiography	500	250	250	20
BIO	Biography	650	400	250	0
EDU	Education	20200	10000	10200	1250
FAN	Fantasy	1575	500	1075	13
GFI	General Fiction	35253	23520	11733	0
GNF	General Non-Fiction	25200	12020	13180	0
HFI	Historical Fiction	6300	3500	2800	0
HNF	Historical Non-Fiction	8000	1523	6477	0
HUM	Humour	13500	9580	3920	46
MYS	Mystery	26000	13269	12731	0
PFI	Political Fiction	23561	10523	13038	500
PNF	Political Non-Fiction	1823	750	1073	23
REF	Reference	374	374	0	0
ROM	Romance	18269	16800	1469	0
SAT	Satirical	23567	12500	11067	0
SCF	Science Fiction	36025	25000	11025	0
SPO	Sport	45720	32687	13033	3256
THR	Thriller	86000	46859	39141	0

(a) State the reason ID could be used as a primary key in the table GENRE.

.....
 [1]

(b) State the number of records in the table GENRE.

.....
 [1]

- (c) Complete the query-by-example grid to display any genres with overdue books. Only display the ID, GenreName and Overdue fields in order of the number of books overdue from largest to smallest.

Field:					
Table:					
Sort:					
Show:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:					
or:					

[4]

3. [June/2021/Paper2/Paper_22/No.6](#)

A database table, PLANT, is used to keep a record of plants sold by a nursery. The table has these fields:

- NAME – name of plant
- FLOWER – whether the plant flowers (True) or not (False)
- POSITION – shade, partial shade or sun
- SIZE – small, medium or large
- PRICE – price in \$
- NUMBERSOLD – how many sold

A query-by-example grid has been completed to display only the price, name and number sold of small plants that do not flower.

Field:	NAME	PRICE	NUMBERSOLD	SIZE	FLOWER	POSITION
Table:	PLANT					
Sort:						
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:						= "shade"
or:						

Identify the errors in the query-by-example grid.

.....

.....

.....

.....

.....

.....

Rewrite the corrected query-by-example grid.

Field:						
Table:						
Sort:						
Show:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:						
or:						

[5]

4. June/2020/Paper2/Paper_21/No.6

A garden centre sells garden tools and stores details of these in a database table named TOOLS. **Code** is the primary key in the TOOLS table.

Code	Description	Price (\$)	Quantity_Stock	Quantity_Ordered
GFLG	Garden Fork	50.00	1	50
GSLG	Garden Spade	50.00	11	0
GHLG	Garden Hoe	45.00	8	0
HFSM	Hand Fork	9.99	42	0
HSSM	Hand Spade	9.99	40	0
HWSM	Hand Weeder	9.99	11	0
HS20	Hose (20 metres)	45.00	10	0
HS35	Hose (35 metres)	60.00	2	0
HS50	Hose (50 metres)	75.00	20	60
YBLG	Yard Brush	24.99	100	0
LMHD	Lawn Mower	99.99	5	0
LMBT	Lawn Mower (Battery)	249.99	7	0
LMPT	Lawn Mower (Petrol)	349.99	10	25
TRBT	Edge Trimmer (Battery)	79.99	15	0
TRPT	Edge Trimmer (Petrol)	59.99	20	0
SHSM	Shears	40.00	40	0
HCSM	Hedge Clippers	40.00	45	0

(a) State the purpose of the primary key in the TOOLS table.

.....

.....

..... [1]

(b) List the output from the data shown in the table TOOLS that would be given by this query-by-example.

Field:	Code	Description	Price (\$)	Quantity_Stock	Quantity_Ordered
Table:	TOOLS	TOOLS	TOOLS	TOOLS	TOOLS
Sort:					Descending
Show:	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Criteria:			>40	>0	>0
or:					

.....

 [3]

(c) Complete the query-by-example grid to output the tools where the quantity in stock is below 25. Only show the Code, Description and Quantity_Stock fields in ascending order of Code.

Field:				
Table:				
Sort:				
Show:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:				
or:				

[3]

5. June/2020/Paper2/Paper_22/No.6

A database table, JUICE, is used to keep a record of cartons of fresh fruit juice available for sale.

Juice code	Fruit 1	Fruit 2	Size	Volume (ml)	Stock level
LMO10	Mango	Orange	Large	1000	18
MOO05	Orange	Orange	Medium	500	8
SAM02	Apple	Mango	Small	200	25
SAA02	Apple	Apple	Small	200	50
SPP02	Pineapple	Pineapple	Small	200	10
MMM05	Mango	Mango	Medium	500	12
LMM10	Mango	Mango	Large	1000	5
MGG05	Guava	Guava	Medium	500	5
SMO02	Mango	Orange	Small	200	7
MOP05	Orange	Pineapple	Medium	500	12
LAA10	Apple	Apple	Large	1000	32
SGO02	Guava	Orange	Small	200	10
LPP10	Pineapple	Pineapple	Large	1000	3
LOO10	Orange	Orange	Large	1000	25
SOO02	Orange	Orange	Small	200	40

(a) Identify a suitable field to use as the primary key. State a reason for your choice.

Field

Reason

.....

[2]

(b) Complete the query-by-example grid to display only the stock level and size of all cartons containing only apple juice.

Field:				
Table:				
Sort:				
Show:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:				
or:				

[4]

6. Nov/2020/Paper2/Paper_22/No.7

The table AUDIOPARTS stores the part number, description, cost and quantity in stock of the items sold by a music shop.

PartNum	Description	Cost	Quantity
A01	Compact Amplifier Case	50.00	15
A02	Deluxe Amplifier Case	75.00	1
A03	Amplifier Standard	79.99	48
A04	Amplifier Midrange	149.99	50
A05	Amplifier Megablaster	299.99	48
S01	Tweeter	59.99	10
S02	Midrange Woofer	99.99	0
S03	Subwoofer	139.99	16
S04	Tower Speaker Basic	159.99	25
S05	Tower Speaker Skyscraper	219.99	9
S06	Centre Speaker	149.99	25
S07	Soundbar	89.99	2
S20	Soundbar	129.99	0
S21	Ceiling Surround Speaker	75.00	15
S22	Ceiling Full Range Speaker	100.00	1
S25	Surround Speaker	100.00	60
T19	Speaker Stands (Pair)	75.00	60

(a) State the number of records in the table AUDIOPARTS

..... [1]

(b) Identify the field that is most suitable to be a primary key and give a reason for your choice.

Fieldname

Reason

.....

.....

[2]

(c) Complete the query-by-example grid to show the items where the quantity in stock is fewer than 10. Show all the fields from the database table in descending order of cost.

Field:				
Table:				
Sort:				
Show:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Criteria:				
or:				

[4]