G.C.E. O/L Grade 10 ICT · Lesson 9

Lesson 9 O/L Exam Practice: Questions and Answers

These questions are in the style of the O/L ICT exam. Paper I has multiple choice questions. Paper II has structured questions with parts, model answers and marking points. They cover all of Lesson 9 (9.1 to 9.8): database concepts and features, planning a table, converting manual records, primary and foreign keys, relationships, creating a database in a DBMS, forms, queries and reports. All answers use the school database (tblClass, tblStudent, tblBook, tblBorrow). Try them first, then check the answers.

Paper I – Multiple choice questions (25)

1. A collection of related data organised for easy access is a

A. Operating system
B. Database
C. Spreadsheet chart
D. Word document

2. Which is a DBMS?

A. Google Chrome
B. LibreOffice Impress
C. LibreOffice Base
D. LibreOffice Writer

3. In a table, a single row is a

A. Query
B. Field
C. Key
D. Record

4. Storing the same data in many places is

A. Data security
B. Data redundancy
C. Data validity
D. Data integrity

5. The best primary key for tblStudent is

A. AdmNo
B. ICTMarks
C. ClassID
D. StudentName

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6. The best data type for Price (Rs.) is

A. Short Text
B. Yes/No
C. Currency
D. Date/Time

7. The best data type for a phone number such as 0771234567 is

A. Short Text
B. Number
C. AutoNumber
D. Currency

8. A library has 8 book cards. After conversion tblBook has

A. 8 tables
B. 1 record
C. 8 fields
D. 8 records

9. Checking typed data against the original cards is

A. Sorting
B. Verification
C. Redundancy
D. Validation

10. ClassID in tblStudent is a

A. Primary key
B. Composite key
C. Foreign key
D. Validation rule

11. The relationship between tblClass and tblStudent is

A. One-to-one
B. Many-to-many
C. None
D. One-to-many

12. Students borrow many books and books are borrowed by many students. This needs

A. A link table (tblBorrow)
B. A report
C. One big table
D. No key

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13. How many students are in class 10B?

A. 0
B. 10
C. 3
D. 4

14. Tables are joined in Access using

A. Home › Find
B. Database Tools › Relationships
C. Create › Report
D. File › Print

15. The option that refuses a loan for BookID B099 (no such book) is

A. Print Preview
B. Cascade Delete
C. Enforce Referential Integrity
D. Caption

16. Field data types are set in

A. Print Preview
B. Datasheet View
C. Form View
D. Design View

17. On a form, fixed text such as 'Admission No' is a

A. Command button
B. Text box
C. Combo box
D. Label

18. The control used to remove the current record is a

A. Label
B. Delete Record command button
C. Image
D. Check box

19. ICTMarks >= 75 sorted Descending gives first

A. Nethmi Fernando
B. Tharindu Bandara
C. Ayesha Fathima
D. Sanduni Rajapaksha

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20. ClassID "10B" AND ICTMarks >70 returns

A. Nethmi Fernando, Ayesha Fathima, Tharindu Bandara

B. Nethmi Fernando, Ayesha Fathima

C. Tharindu Bandara

D. Nethmi Fernando

21. Price Between 600 And 1000 returns how many books?

A. 4

B. 8

C. 3

D. 5

22. Like "A*" finds names that

A. Start with A

B. Contain no A

C. End with A

D. Are exactly A

23. A report grouped by ClassID shows the average of 10C as

A. 69

B. 72.25

C. 61

D. 62

24. The report section for a class average is the

A. Detail

B. Report Header

C. Page Header

D. Group Footer

25. Under PDPA 2022, a student database should

A. Be password protected and backed up

B. Never be backed up

C. Store bank PINs

D. Be shared publicly

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Paper II – Structured questions

1. Database concepts. *(8 marks)*

(i) Define a database and a DBMS. *(2 marks)*
(ii) Using the table shown, identify a field, a record and the primary key. *(3 marks)*
(iii) Give three advantages of an electronic database over a manual one. *(3 marks)*

2. Planning tblBook. *(7 marks)*

(i) Suggest a data type for BookID, Title, Price and Available (yes/no). *(4 marks)*
(ii) Why is Title not suitable as a primary key? *(1 marks)*
(iii) What is field size? Give a suitable size for BookID. *(2 marks)*

3. Converting the library card file. *(6 marks)*

(i) Using the card shown, state what becomes (a) a field, (b) a record. *(2 marks)*
(ii) Distinguish verification and validation with an example. *(2 marks)*
(iii) Give two steps to take before data entry. *(2 marks)*

4. Keys and relationships. *(7 marks)*

(i) Using the diagram, name the primary key and foreign keys of tblBorrow. *(3 marks)*
(ii) State the type of relationship between tblClass and tblStudent and explain. *(2 marks)*
(iii) How many students are in each class 10A, 10B, 10C and 11A? *(2 marks)*

5. Creating the database and a form. *(7 marks)*

(i) List the steps to create the tblClass–tblStudent relationship with referential integrity in Access. *(3 marks)*
(ii) Name four controls on the form shown. *(4 marks)*

6. Queries. *(8 marks)*

(i) Using the query grid shown, write the result. *(3 marks)*
(ii) Write criteria for: (a) ICTMarks less than 50, (b) names starting with "A", (c) Price from 600 to 1000. *(3 marks)*
(iii) List the students with ICTMarks <50 in ascending order of marks. *(2 marks)*

7. Reports. *(6 marks)*

(i) Using the report shown, give the grouping field, the sort field and the average of each class. *(4 marks)*
(ii) How can the librarian print only books not yet returned? *(2 marks)*

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Exam tips

- Database = organised related data; DBMS manages it.
- Field = column; record = row; table = fields + records.
- Features: less redundancy, consistency, integrity, security.
- Plan: purpose, field names, unique field, data type, size.
- Phone/ID = Short Text; money = Currency; yes/no = Yes/No.
- Card = record; card heading = field.
- PK unique; FK = PK of another table, on the many side.
- 1–∞ most common; ∞–∞ needs a link table.
- Relationships: drag PK → FK, Enforce Referential Integrity.
- Form = entry, one record; label vs text box; buttons.
- Query: = > < >= <= <>, Like, Between, AND row / OR rows, sort.
- Report: group, sort, Group Footer Avg, Print Preview.

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Answers and explanations

Paper I

1. **B** – Database.
2. **C** – Base.
3. **D** – Row = record.
4. **B** – Redundancy.
5. **A** – Unique.
6. **C** – Money.
7. **A** – Keeps the leading 0.
8. **D** – One card = one record.
9. **B** – Verification.
10. **C** – PK of tblClass.
11. **D** – One class, many students.
12. **A** – Many-to-many.
13. **C** – Count FK values.
14. **B** – Relationships.
15. **C** – Integrity.
16. **D** – Design.
17. **D** – Label.
18. **B** – Record Operations.
19. **A** – Highest first.
20. **B** – Both true.
21. **A** – Amba Yaluwo, Madol Doova, Gamperaliya, Atlas of Asia
22. **A** – * after A.
23. **C** – (48+73+62)/3.
24. **D** – Footer.
25. **A** – Protect data.

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Paper II – model answers and marking points

1. *(8 marks)*

(i) (2 marks)
Organised collection of related data (1); software to create and manage databases, e.g. Access/Base (1).

(ii) (3 marks)
Field – a column e.g. StudentName (1); record – a row e.g. 24101 Amaya Perera… (1); PK – AdmNo (1).

tblStudent (table)

🔑 AdmNo	StudentName	ClassID	ICTMarks
24101	Amaya Perera	10A	82
24102	Kavindu Silva	10A	64
24103	Nethmi Fernando	10B	91
24104	Ashen Jayasinghe	10C	48
24105	Ayesha Fathima	10B	77

Field name
Field (column)
Record (row)
Primary key – unique for every student

4 fields and 5 records are shown. One record = one student; one field = one item of data.

Model answer

(iii) (3 marks)
Fast search/sort; less redundancy; consistency/integrity; security with passwords; easy backup; reports (any three).

🎯 Examiner tip: field = column, record = row – do not mix them up.

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2. *(7 marks)*

(i) (4 marks)

BookID – Short Text; Title – Short Text; Price – Currency; Available – Yes/No (1 each).

tblStudent – Design View (MS Access)

Table Design: 🔑 Primary Key Builder Test Validation Rules Insert Rows Delete Rows

	Field Name	Data Type	Description (optional)
🔑	AdmNo	Number	Admission number (primary key)
	StudentName	Short Text	Full name
	ClassID	Short Text	Class (foreign key → tblClass)
	DateOfBirth	Date/Time	Date of birth
	ICTMarks	Number	Term test mark out of 100
	Prefect	Yes/No	Is the student a prefect?

Field Properties – StudentName (General tab)

Field Size	40	Caption	Student name
Format		Default Value	
Input Mask		Validation Rule	

Required: Yes · Indexed: Yes (No Duplicates) for the primary key

Model answer

(ii) (1 marks)

Two books/copies may have the same title (not unique) (1).

(iii) (2 marks)

Maximum characters a field can hold (1); 4 (e.g. B001) (1).

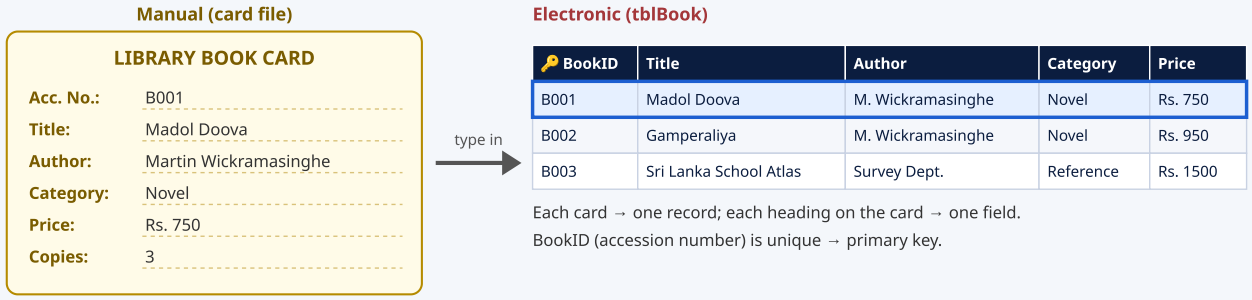
🎯 Examiner tip: phone numbers and IDs with letters are Short Text, not Number.

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3. *(6 marks)*

(i) (2 marks)

(a) each heading – BookID, Title, Author... (1) (b) each whole card (1).



Model answer

(ii) (2 marks)

Verification – compare typed data with the card (1); validation – rule check, e.g. Price > 0 (1).

(iii) (2 marks)

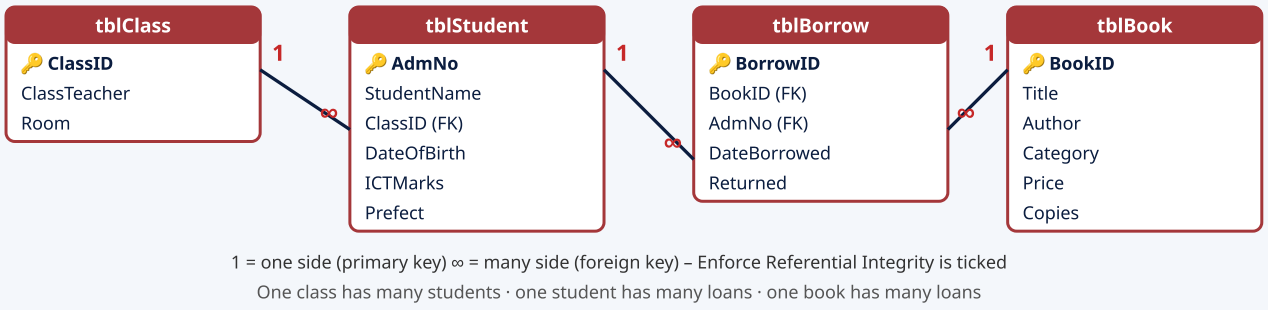
Remove duplicates; standardise formats (dates, names); decide fields/PK (any two).

🎯 Examiner tip: validation cannot prove data is correct – only sensible.

4. *(7 marks)*

(i) (3 marks)

PK – BorrowID (1); FKs – BookID (1), AdmNo (1).



1 = one side (primary key) ∞ = many side (foreign key) – Enforce Referential Integrity is ticked

One class has many students · one student has many loans · one book has many loans

Model answer

(ii) (2 marks)

One-to-many (1): one class has many students but each student is in one class (1).

(iii) (2 marks)

10A – 4, 10B – 3, 10C – 3, 11A – 0 (2, 1 for two correct).

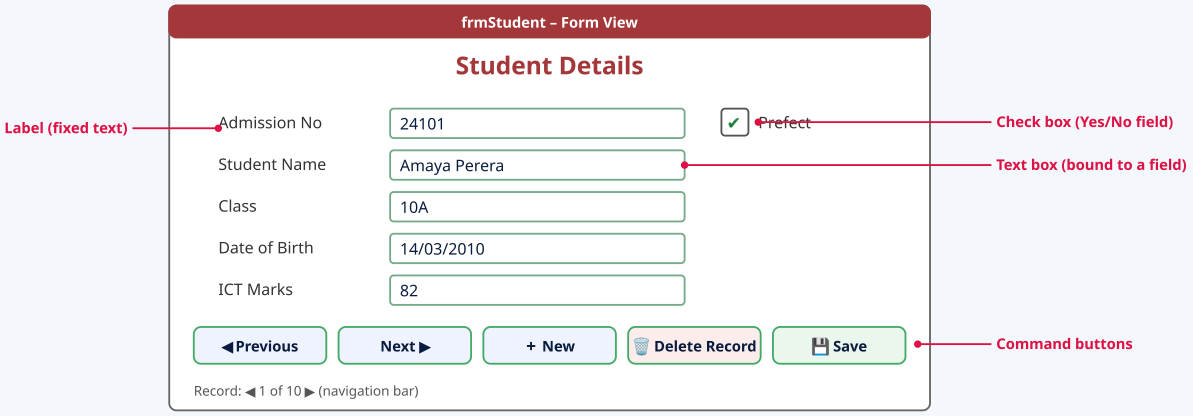
🎯 Examiner tip: the FK is always on the 'many' side.

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5. *(7 marks)*

(i) (3 marks)
Database Tools › Relationships, add tables (1); drag tblClass.ClassID onto tblStudent.ClassID (1); tick Enforce Referential Integrity › Create (1).

(ii) (4 marks)
Label, text box, check box, command button (Next/Previous/Delete Record) (1 each).

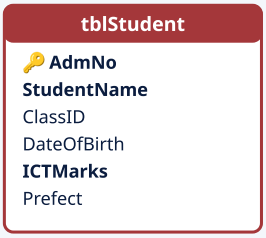


Model answer

🎯 Examiner tip: name the exact tab – Create for forms, Database Tools for Relationships.

6. *(8 marks)*

(i) (3 marks)
Nethmi Fernando, Sanduni Rajapaksha, Amaya Perera, Ayesha Fathima (in this order) (3; 1 for correct students, 1 for order, 1 for fields).



Field:	AdmNo	StudentName	ICTMarks
Table:	tblStudent	tblStudent	tblStudent
Sort:			Descending
Show:	☑	☑	☑
Criteria:			>=75
or:			

Run ! (Datasheet View)

AdmNo	StudentName	ICTMarks
24103	Nethmi Fernando	91
24109	Sanduni Rajapaksha	88
24101	Amaya Perera	82
24105	Ayesha Fathima	77

4 records match

Query grid

(ii) (3 marks)
(a) <50 (b) Like "A*" (c) Between 600 And 1000 (1 each).

(iii) (2 marks)
Tharindu Bandara, Ashen Jayasinghe (2).

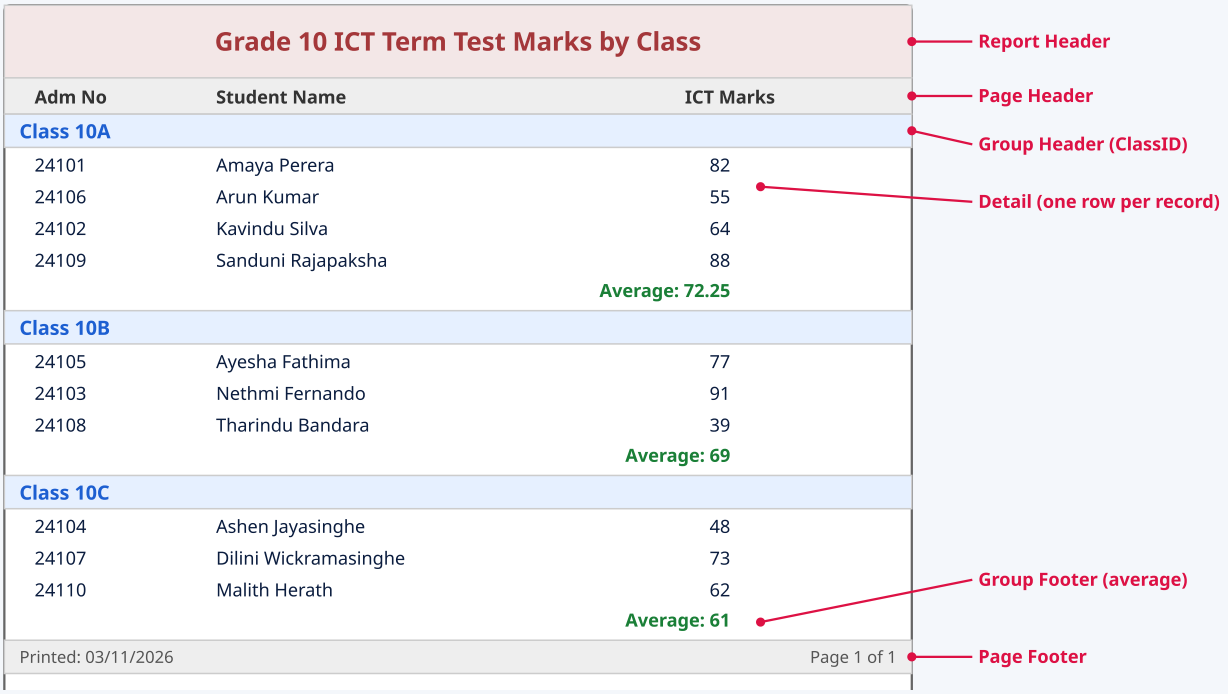
🎯 Examiner tip: AND = same row, OR = different rows; text in quotes.

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7. *(6 marks)*

(i) (4 marks)

Group – ClassID (1); sort – StudentName (1); 10A 72.25, 10B 69, 10C 61 (2).



Report

(ii) (2 marks)

Query tblBorrow with Returned = No (4 loans) (1); Report Wizard on the query, Print Preview, print (1).

🎯 Examiner tip: forms are for entry, reports are for printing.

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