

Pearson BTEC Level 3 Nationals Certificate, Extended Certificate,
Foundation Diploma, Diploma, Extended Diploma

Tuesday 9 May 2023

Afternoon (Time: 3 hours)

Paper
reference

31761H

Information Technology
UNIT 2: Creating Systems to Manage Information

Part A

You must have:

activity2.rtf, activity3.rtf, activity4.rtf

Instructions

- **Part A** and **Part B** contain the material for the completion of the assessment under supervised conditions.
- There are 40 marks for **Part A** and 26 marks for **Part B**, giving a total mark for the assessment of 66.
- **Part A** and **Part B** are specific to each series and this material must be issued only to learners who have been entered to take the assessment in the specified series.
- Learners **must only** have access to **Part A** during this examination session.
- This booklet should be kept securely until the start of the 3-hour supervised assessment period.
- **Part B** materials **must not** be accessed during the completion of **Part A**.
- **Part A** and **Part B** should be submitted together for each learner.
- This booklet should not be returned to Pearson.
- Answer **all** activities.

Information

- The total mark for this paper is 40.

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Instructions to Invigilators

This paper must be read in conjunction with the unit information in the specification and the *BTEC Nationals Instructions for Conducting External Assessments (ICEA)* document. See the Pearson website for details.

Refer carefully to the instructions in this task booklet and the *BTEC Nationals Instructions for Conducting External Assessments (ICEA)* document to ensure that the assessment is supervised correctly.

The 3-hour **Part A** activities must be carried out under examination conditions.

Electronic templates for Activities 2, 3 and 4 are available on the website for centres to download for candidate use.

Learners must complete **Part A** on a computer using the templates provided and appropriate software. All work must be saved as PDF documents for submission.

Invigilators may clarify the wording that appears in **Part A** but cannot provide any guidance in completion of the activities.

Invigilators should note that they are responsible for maintaining security and for reporting issues to Pearson.

Maintaining Security

- Learners must not bring anything into the examination environment or take anything out.
- Centres are responsible for putting in place appropriate checks to ensure that only permitted material is introduced into the examination environment.
- Internet access **is not** permitted.
- Learners' work must be regularly backed up. Learners should save their work to their folder using the naming instructions indicated in each activity.
- During any permitted break, and at the end of the examination, materials must be kept securely, and no items removed from the supervised environment.
- Learners can only access their work under supervision.
- User areas must only be accessible during the examination session and only by the individual learners.
- Any materials being used by learners must be collected in at the end of the examination.
- Following completion of **Part A** all materials must be retained securely for submission to Pearson.
- **Part B** materials must not be accessed during the completion of **Part A**.

Outcomes for submission

Each learner must create a folder to submit their work.

The folder should be named according to this naming convention:

[Centre #]_[Registration number #]_[surname]_[first letter of first name]_PartA

Example: Joshua Smith with registration number F180542 at centre 12345 would have a folder titled

12345_F180542_Smith_J_PartA

Each learner will need to submit 6 PDF documents **and** their final database within their folder.

The 6 PDF documents should use these file names:

- Activity 1:** activity1_[Registration number #]_[surname]_[first letter of first name]
- Activity 2:** activity2_[Registration number #]_[surname]_[first letter of first name]
- Activity 3:** activity3_[Registration number #]_[surname]_[first letter of first name]
- Activity 3d:** activity3d_[Registration number #]_[surname]_[first letter of first name]
- Activity 4:** activity4_[Registration number #]_[surname]_[first letter of first name]
- Activity 5:** activity5_[Registration number #]_[surname]_[first letter of first name]

Instructions for Learners

Read the scenario, brief and activities information carefully.

Plan your time carefully to allow for the preparation and completion of all the activities.

Internet access is **not** allowed.

You will complete the activities under supervision and your work will be kept securely at all times.

You must work independently throughout the examination and must not share your work with other learners.

Your invigilator may clarify the wording that appears in **Part A** but cannot provide any guidance in completion of the activities.

Part B materials **must not** be accessed during the completion of **Part A**.

Outcomes for submission

You must create a folder to submit your work.

The folder should be named according to this naming convention:

[Centre #]_[Registration number #]_[surname]_[first letter of first name]_PartA

Example: Joshua Smith with registration number F180542 at centre 12345 would have a folder titled

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- Activity 1:** activity1_[Registration number #]_[surname]_[first letter of first name]
- Activity 2:** activity2_[Registration number #]_[surname]_[first letter of first name]
- Activity 3:** activity3_[Registration number #]_[surname]_[first letter of first name]
- Activity 3d:** activity3d_[Registration number #]_[surname]_[first letter of first name]
- Activity 4:** activity4_[Registration number #]_[surname]_[first letter of first name]
- Activity 5:** activity5_[Registration number #]_[surname]_[first letter of first name]

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Part A Set Task Brief

You are advised to spend 10 minutes reading the Scenario and the activities you are to complete.

You may make notes and/or highlight information to use in the completion of the documents you need to produce for your activities.

Scenario

You have been asked to create a database for Heather Burn Caravan Park.

The database will record information about the sales of static caravans on the park.

A static caravan is a caravan that stays permanently on the park.

Each caravan is built by a manufacturer.

Each manufacturer builds its own models.

Each caravan is a model.

Each model has a range of features. For example, the number of bedrooms and whether it has double glazing.

The minimum number of bedrooms is one and the maximum number of bedrooms is three.

When a caravan is sold the advertised sale price and actual sale price are recorded.

An extract of the data the company would like to record is shown in **Figure 1**.

Caravan ID	Caravan Year Built	Sale Date	Advertised Sale Price	Model ID	Manufacturer Name	Model Name	Actual Sale Price	Sleeps	Bedrooms	Double Glazing?	Manufacturer ID
1	2017	03/06/2017	£28,000	2	Swallow	Ullswater	£26,500	6	2	0	SWA
1	2017	23/03/2021	£25,000	2	Swallow	Ullswater	£25,000	6	2	0	SWA
2	2017	08/07/2017	£28,000	4	Leisure Seeker	Top of the Hill	£28,000	6	2	1	LSE
3	2018	03/04/2018	£30,000	1	Swallow	Luxury Lodge	£30,000	8	3	1	SWA
3	2018	06/06/2020	£24,000	1	Swallow	Luxury Lodge	£23,500	8	3	1	SWA
4	2020	03/05/2020	£30,000	2	Swallow	Ullswater	£29,500	6	2	0	SWA
5	2020	07/06/2020	£35,000	3	Barnaby	Staycation	£35,000	4	1	1	BAR

Figure 1

Part A Set Task

You must complete ALL activities within Part A.

Produce your documents using a computer.

Save your documents in your folder ready for submission using the formats and naming conventions indicated.

Activity 1: Database Relationships Screenprint (45 minutes)

Study the data extract provided in **Figure 1**.

Create an efficient database structure that:

- minimises data duplication
- accepts the data provided
- uses recognised naming conventions
- ensures data integrity.

Ensure you use **all** and **only** the fields shown in **Figure 1**.

Screen print your database relationships.

Save your database relationships screenprint as a PDF in your folder for submission as **activity1_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 45 minutes on this activity.

(Total for Activity 1 = 8 marks)

Activity 2: Table Structures and Validation (45 minutes)

Create efficient table structures based on Activity 1 and the data shown in **Figure 1**.

The table structures must use suitable validation to meet these requirements:

- a record for a new manufacturer will not save if the manufacturer ID is not in the correct format
- a record for a new manufacturer will not save if the manufacturer name is not present
- a record for a new model will not save if the manufacturer ID is not present
- a record for a new model will not save if the manufacturer ID is invalid
- a record will not save if the number of bedrooms is below the accepted range
- a record will not save if the number of bedrooms is above the accepted range.

Input the data given in **Figure 1** into your relational database.

Evidence your table structures and validation as screenprints using the given **activity2.rtf** template.

Display your screenprints to show:

- the design view of each table showing the structure, including the fields and data types
- validation including one suitable example for each of these:
 - presence check
 - length check
 - value lookup **or** range check
 - table lookup
 - format check.

Save your evidence of the table structures as a PDF in your folder for submission as **activity2_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 45 minutes on this activity.

(Total for Activity 2 = 8 marks)

Activity 3: Queries and Report (40 minutes)

Queries

- (a) Create a query to display a sorted list of models that have no more than two bedrooms and have double glazing. It must display only the manufacturer name, the model name, and the number of bedrooms from highest to lowest.
- (b) Each caravan sale is given a rating. If the actual sale price is more than £500 below the advertised sale price then the rating is Poor, otherwise the rating is Good.

Create a query to display the rating for caravan sales where there is a difference between the advertised sale price and the actual sale price.

Calculate:

- the difference between the advertised sale price and the actual sale price
- the rating.

Display:

- the caravan ID
- the advertised sale price
- the actual sale price
- the difference between the advertised sale price and the actual sale price
- the rating.

Evidence your queries as screenprints using the given **activity3.rtf** template.

Your screenprints must show:

- the **DESIGN** view of the queries specified that you have created, including fields and criteria
- the **DATASHEET** view of the queries specified that you have created.

Report

(c) Create a report that shows a list of models.

For each manufacturer, calculate:

- the total number of models
- the total number of models that have double glazing.

Display:

- a suitable report title
- the manufacturer name
- the model name
- the number of people the model sleeps
- the number of bedrooms
- whether the model has double glazing or not
- the total number of models for each manufacturer
- the total number of models that have double glazing.

The report must fit on one page.

Evidence your report as screenprints using the given **activity3.rtf** template.

Your screenprints must show:

- the **DESIGN** view of the report you have created, including grouping and calculations
- the **DESIGN** view of any queries you have created and used with the report, including fields and criteria
- the **DATASHEET** view of any queries you have created and used with the report.

Save your query and report evidence as a PDF in your folder for submission as **activity3_[Registration number #]_[surname]_[first letter of first name]**

(d) Save your database report (not a screenprint) as a PDF in your folder for submission as **activity3d_[Registration number #]_[surname]_[first letter of first name]**

You are advised to spend 40 minutes on this activity.

(Total for Activity 3 = 12 marks)

Activity 4: Structure Testing (20 minutes)

Test the structure and the validation of your relational database using suitable test data (normal, erroneous and extreme as appropriate).

You must provide evidence of table level testing that proves:

1. a record for a new manufacturer will not save if the manufacturer ID is not in the correct format
2. a record for a new manufacturer will not save if the manufacturer name is not present
3. a record for a new model will not save if the manufacturer ID is not present
4. a record for a new model will not save if the manufacturer ID is invalid
5. a record will not save if the number of bedrooms is below the accepted range
6. a record will not save if the number of bedrooms is above the accepted range.

Complete the test log to show how you have tested the structure and validation of your database using the given **activity4.rtf** template.

Save your test log as a PDF in your folder for submission as
activity4_[Registration number #]_[surname]_[first letter of first name]

You are advised to spend 20 minutes on this activity.

(Total for Activity 4 = 6 marks)

Activity 5: Structure Evaluation (20 minutes)

Evaluate your database structure and validation.

You should consider:

- how well your database structure has minimised data duplication
- how well your database structure meets these requirements:
 - each caravan is built by a manufacturer
 - each manufacturer builds its own models
 - each caravan is a model
 - each model has a range of features. For example, the number of bedrooms and whether it has double glazing
 - the minimum number of bedrooms is one and the maximum number of bedrooms is three
 - when a caravan is sold the advertised sale price and actual sale price are recorded.

Save your evaluation as a PDF in your folder for submission as
activity5_[Registration number #]_[surname]_[first letter of first name]

You are advised to spend 20 minutes on this activity.

(Total for Activity 5 = 6 marks)

TOTAL FOR PART A = 40 MARKS