

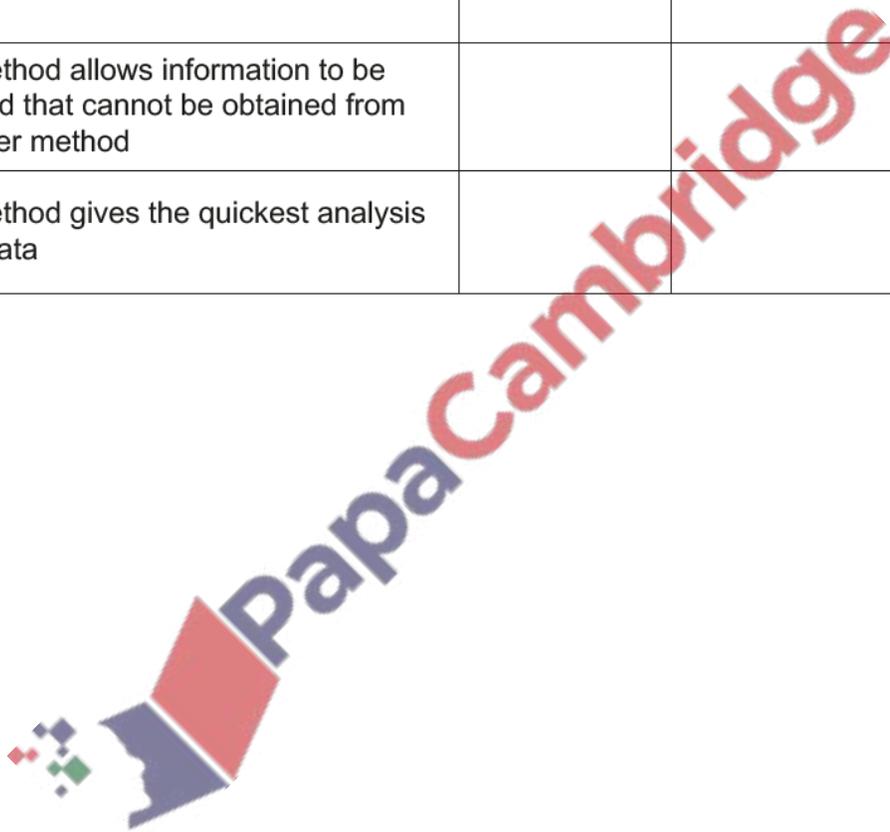
The systems life cycle – 2021/20 IGCSE 0417

1. **Nov/2021/Paper_11/No.4**

Tick (✓) whether the following advantages of analysing a system refer to **looking at existing paperwork**, **observation** or **questionnaires**.

	Looking at existing paperwork (✓)	Observation (✓)	Questionnaire (✓)
This method gives the systems analyst an overall view of the system			
Individuals can remain anonymous			
This method allows information to be collected that cannot be obtained from any other method			
This method gives the quickest analysis of the data			

[4]



6. June/2021/Paper_12/No.7

The owner of Tawara Hotels is planning a new computerised booking system. There are ten Tawara Hotels throughout the world. The current booking system allows people to book rooms in any of the Tawara Hotels. He has employed a systems analyst to research the current system and then install the new system.

- (a) When analysing the current booking system, the systems analyst must identify the user requirements.

Explain why it is important for the systems analyst to do this.

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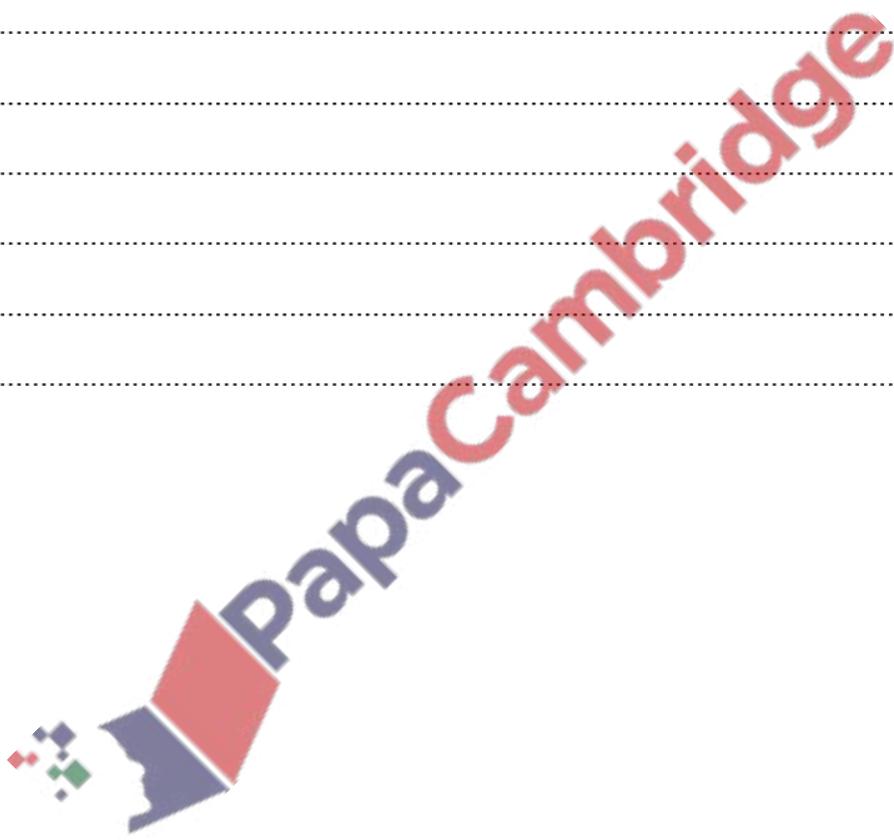
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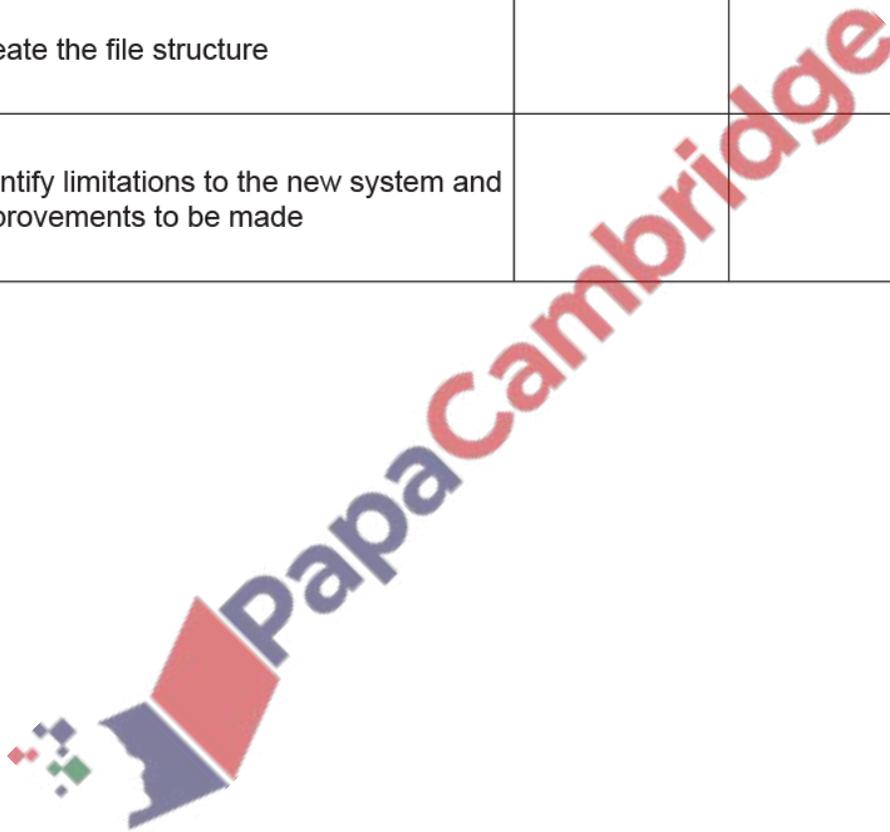
[3]



(b) Tick (✓) the relevant stage of the systems life cycle for each of the following activities.

Activity	Analysis (✓)	Development and testing (✓)	Evaluation (✓)
Identifying the problems with the current system			
Comparing the solution with the original task requirements			
Create the file structure			
Identify limitations to the new system and improvements to be made			

[4]



- (c) Before the new booking system is installed, the systems analyst has to decide on a method of implementation. One method of implementation is pilot running.

Name **two** other methods of implementation and describe **two** benefits of each.

Name.....

Benefit 1.....

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Benefit 2.....

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Name.....

Benefit 1.....

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Benefit 2.....

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[6]

7. June/2021/Paper_13/No.4

Tick (✓) whether the following descriptions of analysing a system refer to **Interviews**, **Observation** or **Questionnaires**.

Description	Interviews (✓)	Observation (✓)	Questionnaires (✓)
This method gives a more reliable overview of the whole system.			
This is more time-consuming than the other methods.			
Questions on this method cannot be expanded upon when being asked.			
With this method the worker cannot remain anonymous.			

[4]

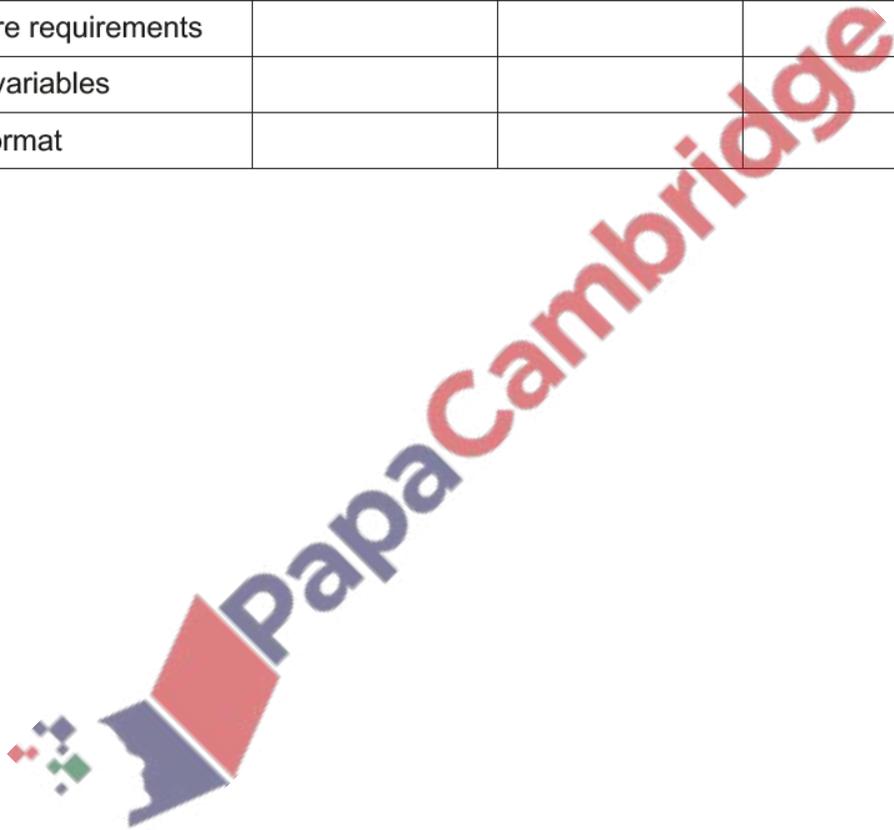
8. Nov/2020/Paper_11/No.11

Two types of documentation are written when a new computer system is created. Some items only appear in the technical documentation and other items only in the user documentation whereas some items appear in both.

Tick (✓) whether the following items only appear in **Technical documentation**, only appear in **User documentation** or appear in **Both**.

Item	Technical documentation (✓)	User documentation (✓)	Both (✓)
Purpose of the system			
How to save a file			
System flowchart			
Software requirements			
List of variables			
Input format			

[6]



- (b) When the systems analyst created the new system, he had to choose data types for each field.

Write down the most appropriate data type for each field. The answers in the table must be different in each case. The data type for one field has already been identified; this data type must not be used for the other fields.

For any numeric field specify the type of number.

Field name	Data type	Example data
Year_joined		2019
Gender		F
Date_of_birth		04/11/2000
Membership_number	Text	01254
Cost_of_membership		\$10.50

[4]

10. Nov/2020/Paper_13/No.2

A computer system uses two types of documentation: technical and user. Some items only appear in the technical documentation and other items only in the user documentation, whereas some items appear in both.

Tick (✓) whether the following items appear only in **Technical documentation**, only in **User documentation** or in **Both**.

Item	Technical documentation (✓)	User documentation (✓)	Both (✓)
Algorithms			
File structures			
Error messages			
Limitations of the system			
Hardware requirements			
Glossary of terms			

[6]

12. June/2020/Paper_11/No.4

A hospital is creating a database to store blood donors' medical details. The fields in the database include Health_number, Date_of_birth, Gender and Blood_group.

(a) When a new blood donor wishes to give blood they need to fill in a form.

Each blood donor has a unique health number which uses a 10-digit number, for example 9434765919.

Blood group can be A, B, AB or O.

Part of the form is shown below.

Blood donor	
1. What is your health number?	<input type="text"/>
2. What is your date of birth?	<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>
3. What is your gender?	M/F
4. What is your blood group?	<input type="text"/>

Name a suitable data type for the answers given to each of the questions in the form. For any numeric field, specify the type of number.

- Question 1.....
- Question 2.....
- Question 3.....
- Question 4.....

[4]

(b) In the Blood_group field the only data that can be entered is A, B, AB or O.

Tick (✓) whether each of the following blood groups is an example of **abnormal** or **normal** data.

Blood group	abnormal (✓)	normal (✓)
AB		
C		
B		
AO		

[2]

(c) The administrator needs a list of all the blood donors in the database with blood group A as well as in the same list all the blood donors with blood group AB. This list will only include female blood donors.

To find the blood donor with the health number 9434765919 he will need to type in the following query.

Health_number = 9434765919

Write a query to find all the female blood group donors with the blood group A as well as those with AB.

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[6]

(d) When the details of a new donor are added to the database the person's date of birth is entered.

Explain why the administrator would prefer their date of birth to be stored rather than their age.

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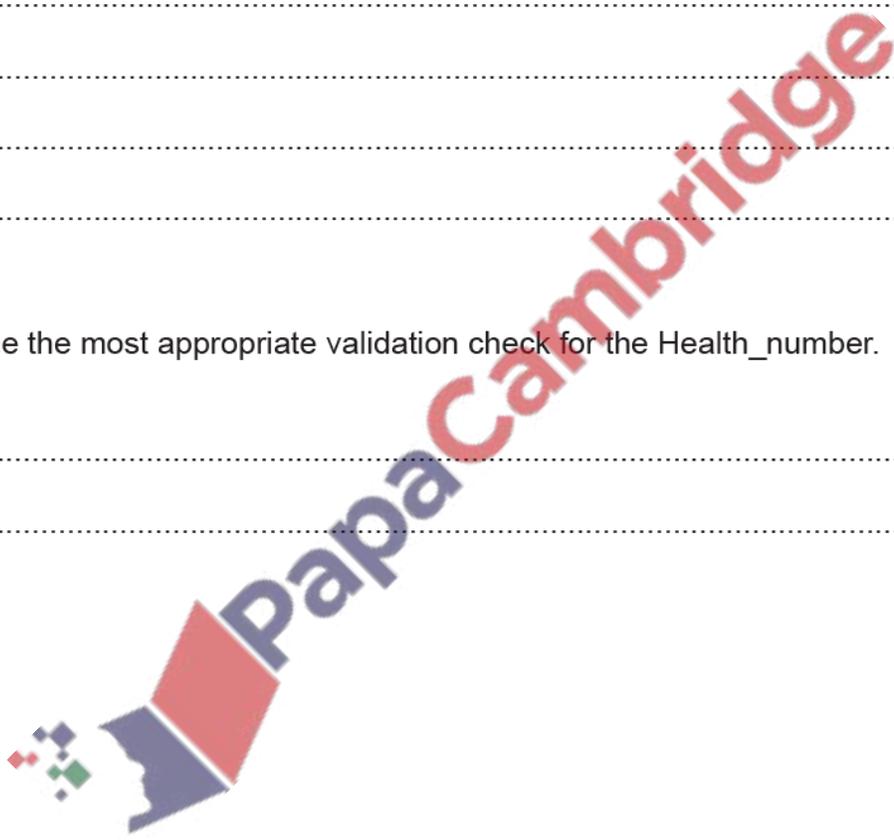
[4]

(e) Name the most appropriate validation check for the Health_number.

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[1]



(b) The school is planning to use fingerprints as a way to record when students arrive in the class.

Describe the advantages and disadvantages of using fingerprint data entry for student registration systems rather than magnetic ID cards.

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[4]

(c) Fingerprints are one example of biometrics.

Identify **three** other examples of biometrics.

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[3]

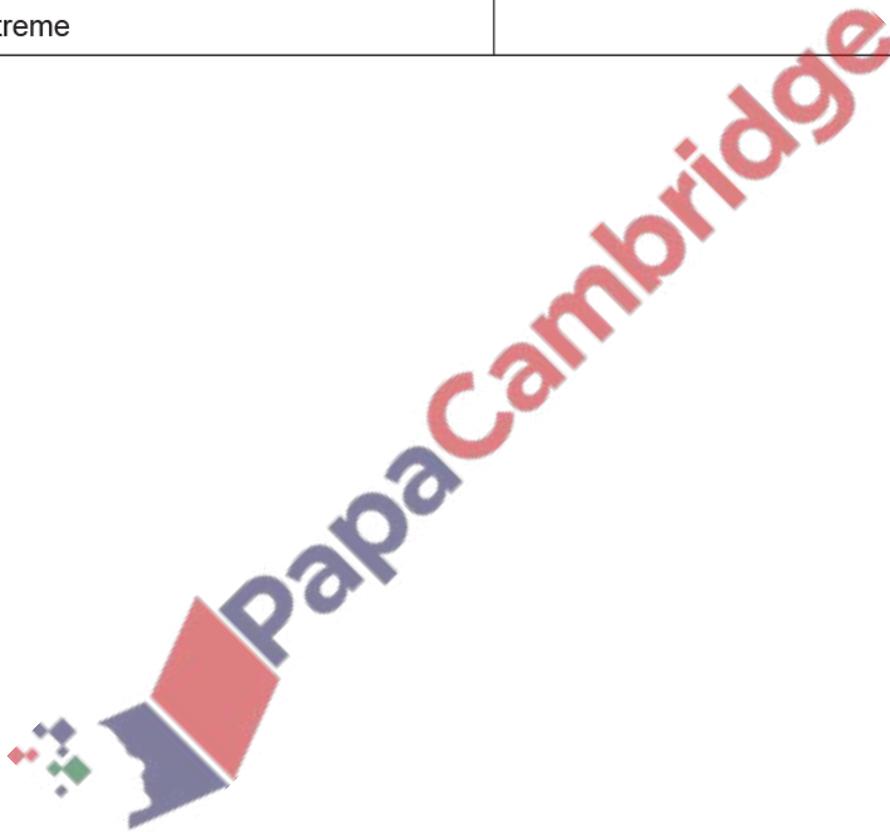
14. June/2020/Paper_12/No.4a

A teacher is creating a spreadsheet that will record the grades students achieved in recent tests and compare the average grades of these tests with the students' forecast grades. The grading the teacher is using awards 1 for the highest grade down to 10 for the lowest. The teacher has created a validation rule on the grade entered.

- (a) Give examples of data used to test the validation rule. Your answers for abnormal test data must be for a different reason in each case.

Type of test data	Example of test data
Normal	
Abnormal	
Abnormal	
Extreme	

[4]



15. June/2020/Paper_13/No.11

Parallel running is a type of implementation.

Name and describe **two** other methods of implementing a new computer system. For each one give an advantage and a disadvantage of this method. Your answers must be different in each case.

Method 1.....

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Advantage 1.....

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Disadvantage 1.....

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Method 2.....

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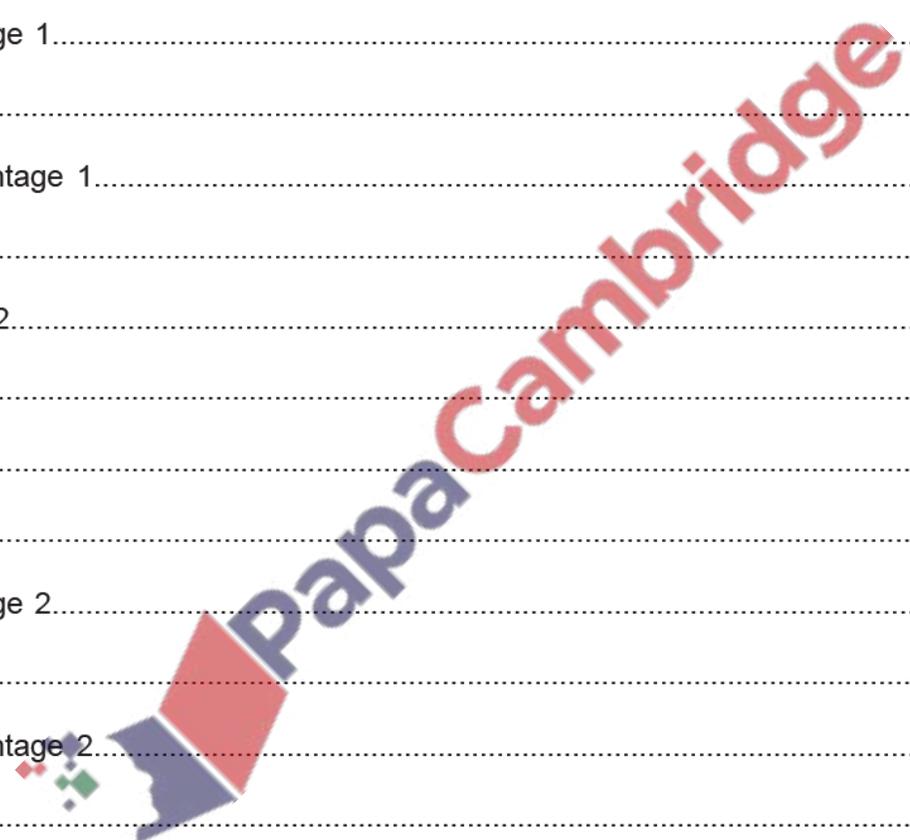
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Advantage 2.....

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Disadvantage 2.....

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[8]