CAMBRIDGE IGCSE CS

0478 CS

LESSON OBJECTIVES

Part 1

- *Understand Command Words*
- *Do past paper practice.*
- *Develop past paper techniques.*

SUCCESS CRITERIA

Part 1

MOST students should be able to

- ***Do past paper practice***

ALL students should be able to

- ***Understand Command Words***

SOME students should be able to

- ***Develop past paper techniques.***

Key words: *All vocabulary words*

Cambridge IGCSE Computer Science

0478 Examination Preparation

COMMAND WORDS

What is your understanding about command words used in Cambridge IGCSE CS/ICT Examination?

Analyse Annotate Apply Classify

Compare & Contrast Describe Evaluate

Identify Label Examine Determine

COMMAND WORDS

What is your understanding about command words used in Cambridge IGCSE CS Examination?

It is important to understand the command words, misunderstanding command words will lead to a wrong answer or incorrect approach in solving a problem.

COMMAND WORDS

Go to https://joinmyquiz.com and let's find out on your understanding about command words.

CODE: _____

[Understanding Command words in exams (cambridgeinternational.org)]

Log-in to https://www.febstar.com and check the posted command words you must know and its meaning.

Examination Strategies

When answering the IGCSE CS/ICT examination, remember:

1. To check the stated question full marking first, then from there, give the exact number of full marking key points to discuss as answers.
2. That when exam questions asks to exactly identify by ticking the correct answers, it has the option of being marked either zero mark for 1 correct answer or full mark for all correct answers. That formulas/functions as answers are marked by sections and in order according to the standard syntax.
3. That a question that pertains to comparing and contrasting is the same with giving the similarities and differences of things in question.
4. That a question on benefits and drawbacks is the same with giving an answer on advantages and disadvantages of thins in question.
5. That formulas/functions as answers are marked by sections and in order, according to the standard syntax.

CLASS ACTIVITY

Be an Independent Learner. You must start to be use your ICT stock knowledge and skills. Remember, during the ACTUAL Cambridge Examination, your friend is not with you to help. Make your parents proud of your IGCSE ICT Achievement this time.

Your participation in very important, give an answer in our meeting chat when I ask you to do so, I will give you time to answer the question and we will discuss the answer.

Tips and Strategies

When answering the IGCSE CS examination, remember:

1. **To check the stated question full marking first, then from there, give the exact number of full marking key points to discuss as answers.**

Exam Question:

A Company uses solid state and optical secondary storage

a.) Explain why a computer needs a secondary storage (2)
b.) Describe three differences between solid state and optical storage (6)

Past Paper Question

9 A company uses both solid-state and optical secondary storage.

(a) Explain why a computer needs secondary storage.

.....

.....

.....

..... [2]

(b) Describe **three** differences between solid-state and optical storage.

Paper Question MS

Question	Answer	Marks
9(a)	Any **two** from: • To store data/files **permanently** • … otherwise, data/programs would need to be downloaded/entered/installed every time the computer was used • To allow **software** to be **installed** on the computer • For the creation of virtual memory	**2**
9(b)	Any **six** from (**Max 3** for one type only):	**6**

9(b)	Any **six** from (**Max 3** for one type only): • Solid-state has no moving parts • … optical does have moving parts • Solid-state is faster to **access** data • … optical is slower to **access** data • Solid-state uses less power to operate • … optical uses more power to operate • Solid-state runs quietly • … optical makes more noise • Solid state is more durable/robust • … optical is less durable/robust • Solid state storage has a large storage capacity • … optical has a much smaller limit to its storage capacity • Solid-state is more expensive **per GB** of data • … optical is cheaper **per GB** of data • Solid-state stores data onto silicon chips/transistors using logic (floating/control/NAND/NOR) gates to control the movement of electrons • … optical stores data by using lasers to burning pits and lands onto a disk	**6**

Tips and Strategies

When answering the IGCSE ICT examination, remember:

1. To check the stated question full marking first, then from there, give the exact number of full marking key points to discuss as answers.
2. **That when exam questions asks to exactly identify by ticking the correct answers, it has the option of being marked either zero mark for 1 correct answer or full mark for all correct answers.**

Exam Question: A desktop computer consists of both hardware and software. The software is either applications software or system software.

(a) Tick (✓) whether the following are examples of **applications** software or **system** software.

	applications (✓)	**system (✓)**
Measurement software		
Linker		
Database		
Utility software		

[2]

Exam Question Answers:

Question	Answer	Mark
1(a)		2

	applications (✓)	system (✓)
Measurement software	✓	
Linker		✓
Database	✓	
Utility software		✓

4 correct ticks = 2 marks
2 or 3 correct ticks = 1 mark
1 correct tick = 0 marks

Tips and Improvements

When answering the IGCSE CS/ICT examination, remember:

1. To check the stated question full marking first, then from there, give the exact number of full marking key points to discuss as answers.
2. That when exam questions asks to exactly identify by ticking the correct answers, it has the option of being marked either zero mark for 1 correct answer or full mark for all correct answers.
3. **That a question that pertains to comparing and contrasting is the same with giving the similarities and differences of things in question.**

Exam Question:

Compare and contrast Bluetooth and WIFI.
(6 Marks)

Exam Question Answers

Maximum **four** from: *Similarities* Both WiFi and Bluetooth use wireless communications Both WiFi and Bluetooth use radio frequencies for communication/radio waves Both WiFi and Bluetooth allow several devices to be connected Both use security when sending data Maximum **five** from: *Differences* WiFi has faster data transfer rate WiFi has a greater range of transmission WiFi uses key matching encryption Bluetooth uses WEP and WPA security together WiFi can be broadcast Bluetooth has more channels Wifi connects more devices	**6**

Tips and Improvements

When answering the IGCSE ICT examination, remember:

1. **To check the stated question full marking first, then from there, give the exact number of full marking key points to discuss as answers.**
2. **That when exam questions asks to exactly identify by ticking the correct answers, it has the option of being marked either zero mark for 1 correct answer or full mark for all correct answers.**
3. **That a question that pertains to comparing and contrasting is the same with giving the similarities and differences of things in question.**
4. **That a question on benefits and drawbacks is the same on giving an answer on advantages and disadvantages of things in question.**

Exam Question:

The manager of a company is planning to create a computerised system and has asked a systems analyst to research the current system. The systems analyst could do this by using a number of different methods but has chosen to create and send out a questionnaire to members of the company.

(a) Discuss the benefits and drawbacks of sending out questionnaires to members of the company. (6 Marks)

Exam Question
Answers

Advantages

Disadvantages

6(a)	**Six** from: **Benefits** Faster to complete all questionnaires than using interviews Cheaper to produce questionnaires than pay/employ an interviewer Individuals can remain anonymous therefore they are more truthful More people can answer the questionnaire than can be interviewed They can fill it in in their own time therefore quicker to complete overall **Drawbacks** Tend not to be popular with users Too inflexible cannot ask follow up questions Users tend to exaggerate their responses as they are anonymous As it's anonymous people may not take it seriously Cannot expand on their answers/limited in their responses To gain full marks at least one benefit/drawback must be given	**6**

Tips and Improvements

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1. To check the stated question full marking first, then from there, give the exact number of full marking key points to discuss as answers.
2. That when exam questions asks to exactly identify by ticking the correct answers, it has the option of being marked either zero mark for 1 correct answer or full mark for all correct answers. That formulas/functions as answers are marked by sections and in order according to the standard syntax.
3. That a question that pertains to comparing and contrasting is the same with giving the similarities and differences of things in question.
4. That a question on benefits and drawbacks is the same with giving an answer on advantages and disadvantages of thins in question.
5. **That Pseudocode syntaxes and solutions are marked according to rubrics and requirements specified.**

Exam Question:

13 The 1D array `StudentName[]` contains the names of students in a class. The 2D array `StudentMark[]` contains the mark for each subject, for each student. The position of each student's data in the two arrays is the same, for example, the student in position 10 in `StudentName[]` and `StudentMark[]` is the same.

The variable `ClassSize` contains the number of students in the class. The variable `SubjectNo` contains the number of subjects studied. All students study the same number of subjects.

The arrays and variables have already been set up and the data stored.

Students are awarded a grade based on their average mark.

Average mark	Grade awarded
greater than or equal to 70	distinction
greater than or equal to 55 and less than 70	merit
greater than or equal to 40 and less than 55	pass
less than 40	fail

Write a program that meets the following requirements:

- calculates the combined total mark for each student for all their subjects
- calculates the average mark for each student for all their subjects, rounded to the nearest whole number
- outputs for each student:
  - name
  - combined total mark
  - average mark
  - grade awarded
- calculates, stores and outputs the number of distinctions, merits, passes and fails for the whole class.

You must use pseudocode or program code **and** add comments to explain how your code works.

You do **not** need to initialise the data in the array.

Question	Answer	Marks
13	Read the whole answer, award a mark from both of the following tables and add up the total. Marks are available for: • AO2 (maximum 9 marks) • AO3 (maximum 6 marks). The techniques and the data structures required are listed below. The requirements may be met using a suitable built-in function from the programming language used (e.g. Python, VB.NET or Java). **Techniques required:** **R1** Calculate total mark for each student (iteration and totalling). **R2** Calculate average mark for each student rounded to the nearest whole number. **R3** Selection of grade for each student (selection). **R4** Output for each student name, total mark, average mark, grade awarded (output with appropriate messages). **R5** Calculate, store and output the number of distinctions, merits, passes and fails for the whole class (iteration, counting and output with appropriate messages). **Data structures required:** The names underlined must be used as provided in the scenario. Arrays or lists `StudentName`, `StudentMark`, (`TotalMark` and `AverageMark` may be seen but no requirement to store) Variables `ClassSize`, `SubjectNo`, `SubjectCounter`, `StudentCounter` `DistinctionNo`, `MeritNo`, `PassNo`, `FailNo` could be an array or list Constants `Distinction`, `Merit`, `Pass` could be variables	**15**

Question	Answer	Marks
13	***Example 15 mark answer in pseudocode.***	

Answer

```
// meaningful identifier names and appropriate data structures (variables, constants and the
// given arrays) to store all the data required
DECLARE TotalMark : ARRAY[1:50] OF INTEGER
DECLARE AverageMark : ARRAY[1:50] OF INTEGER
DECLARE SubjectCounter : INTEGER
DECLARE StudentCounter : INTEGER
DECLARE DistinctionNo : INTEGER
DECLARE MeritNo : INTEGER
DECLARE PassNo : INTEGER
DECLARE FailNo : INTEGER

CONSTANT Distinction = 70
CONSTANT Merit = 55
CONSTANT Pass = 40

// initialisation processes for this scenario, initialising the running totals used for
// grades and combined totals
DistinctionNo ← 0
MeritNo ← 0
PassNo ← 0
FailNo ← 0

FOR StudentCounter ← 1 to ClassSize
  TotalMark[StudentCounter] ← 0
NEXT StudentCounter

// programming techniques of iteration, selection, totalling, counting and output are used
```

Question	Answer	Marks
13		

Answer

```
FOR StudentCounter ← 1 to ClassSize
  FOR SubjectCounter ← 1 to SubjectNo
    TotalMark[StudentCounter] ← TotalMark[StudentCounter] + StudentMark[StudentCounter,
      SubjectCounter]
  NEXT SubjectCounter
  AverageMark[StudentCounter] ← INT((TotalMark[StudentCounter] / SubjectNo) + 0.5)
  OUTPUT "Name ", StudentName[StudentCounter]
  OUTPUT "Combined total mark ", TotalMark[StudentCounter]
  OUTPUT "Average mark ", AverageMark[StudentCounter]
  IF AverageMark[StudentCounter] >= Distinction
    THEN
      DistinctionNo ← DistinctionNo + 1
      OUTPUT "Grade Distinction"
    ELSE
      IF AverageMark[StudentCounter] >= Merit
        THEN
          MeritNo ← MeritNo + 1
          OUTPUT "Grade Merit"
        ELSE
          IF AverageMark[StudentCounter] >= Pass
            THEN
              PassNo ← PassNo + 1
              OUTPUT "Grade Pass"
            ELSE
              FailNo ← FailNo + 1
              OUTPUT "Grade Fail"
          ENDIF
      ENDIF
  ENDIF
NEXT StudentCounter

OUTPUT "Number of Distinctions ", DistinctionNo
OUTPUT "Number of Merits ", MeritNo
OUTPUT "Number of Passes ", PassNo
OUTPUT "Number of Fails ", FailNo
```

Tips and Improvements for Students

The difference between

ordinary and extraordinary is practice.

Practicing not only at school but also during your personal time will give you an edge in getting good marks during the actual examination.

Good luck and wishing you all the best.

Marking Key points on IGCSE ICT Examination

- General marking principles are followed as stated in the Mark scheme.
- When marking theoretical examination questions. Mark the candidate's answer not according to what you think his/her answer says but what's the answer on paper.
- Marking practical examination should be straightforward marking, section by section as stated in the mark scheme.

Thank You