

**UNIVERSITY OF ESWATINI**  
**FACULTY OF EDUCATION**  
**DEPARTMENT OF CURRICULUM AND TEACHING**  
**MAIN EXAMINATION QUESTION PAPER (NOVEMBER/DECEMBER, 2018)**

**TITLE OF PAPER:** CURRICULUM STUDIES IN COMPUTER SCIENCE I

**COURSE CODE:** CTE 537

**PROGRAMME:** PGCE

**DURATION:** THREE (3) HOURS

**INSTRUCTIONS:**

1. This paper contains five (5) questions. Answer any four (4) questions.
2. Each question has a total of 25 marks.

**THIS PAPER SHOULD NOT BE OPENED UNTIL PERMISSION HAS BEEN  
GRANTED BY THE INVIGILATOR**

## QUESTION ONE

- a) “Classroom management techniques differ while teaching in a computer laboratory”. Briefly explain five (5) reasons why a computer laboratory is a more difficult place to teach in, compared to the normal classroom. [10 marks]
- b) Suggest five (5) plausible ways in which the challenges in (a) above can be mitigated. [10 marks]
- c) You have been posted to a school to teach Computer Science. Faced with overwhelming enrolment, explain the criteria that would inform your action in handling the situation to obtain a manageable class. [05 marks]

## QUESTION TWO

Prerequisite rules and regulations that govern computer laboratory access and use are standard mandatory procedures in institutions of learning. Discuss eight (8) sample computer laboratory rules, indicating the dos and don'ts for all laboratory users. [25 marks]

## QUESTION THREE

- a) Explain five (5) main educational benefits of computer animations in Computer Science education. [15 marks]
- b) What five (5) challenges face the use of computer animations in teaching and learning? [10 marks]

## QUESTION FOUR

- a) Properties of a good testing instrument include *reliability*, *objectivity* and *differentiality*. Discuss the significance of these principles within the context of educational computing. [15 marks]
- b) Explain how instructional purposes of evaluation are beneficial to the learner in a Computer Science class. [10 marks]

## QUESTION FIVE

The topic ‘Types and components of computer systems’ has been derived from the Cambridge IGCSE syllabus (see excerpt appended). From the information provided:

- a) Design a scheme of work to teach the topic for one (1) week. [15 marks]

- b) From the scheme of work designed, derive a lesson plan to teach any sub-topic or concept. [10 marks]

## 6. Syllabus content

### Annual technical updates

Technical updates will be published each year to take account of emerging technologies relevant to the syllabus content. Please refer to the updates page for this syllabus on the Cambridge website <http://www.cie.org.uk/0417> for the relevant year of examination.

### 1. Types and components of computer systems

Candidates should be able to:

#### 1.1 hardware and software

- define hardware as consisting of physical components of a computer system
- identify internal hardware devices (e.g. processor, motherboards, random access memory (RAM), read-only memory (ROM), video cards, sound cards and internal hard disk drives)
- identify external hardware devices and peripherals (such as monitors, keyboards, mice, keyboards, printers as input and output devices and external storage devices in general)
- define software as programs for controlling the operation of a computer or processing of electronic data
- identify the two types of software – applications software and system software
- define applications software (e.g. word processing, spreadsheet, database management systems, control software, measuring software, applets and apps, photo-editing software, video-editing software, graphics manipulation software)
- define system software (e.g. compilers, linkers, device drivers, operating systems and utilities)

#### 1.2 the main components of computer systems

- describe the central processing unit including its role
- describe internal memory, i.e. ROM and RAM and the differences between them
- define input and output devices and describe the difference between them
- define secondary/backing storage

#### 1.3 operating systems

- define and describe operating systems which contain a Command Line Interface (CLI)
- define and describe operating systems which contain a Graphical User Interface (GUI)
- describe the differences, including the benefits and drawbacks, between operating systems which contain a CLI and those which contain a GUI

#### 1.4 types of computer

- describe the characteristics of a personal/desktop computer and its uses, both as a standalone and networked computer
- describe the characteristics of a laptop computer and what it is used for, both as a standalone and networked computer
- describe the characteristics of a tablet computer and what it is used for, including its ability to use wireless technology or 3G/4G technology
- describe the computer characteristics of a smartphone and what it is used for in computing terms
- describe the advantages and disadvantages of each type of computer (as above) in comparison with the others (as above)