Zmbabwe School Examinations Council
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For Performance Measurement

03 March 2018

Your Ref:
Our Ref:

EXAMINATIONS POLICY CIRCULAR
NUMBER 10 OF 2018

DISTRIBUTION:

- Permanent Secretary-Ministry of Primary and Secondary Education
- All ZIMSEC Regional Managers
- All Provincial Education Directors-Ministry of Primary and Secondary Education
- All District Education Officers-Ministry of Primary and Secondary Education
- Heads of Ordinary Level Examination Centres

ASSESSMENT OF CANDIDATES IN COMPUTER SCIENCE SYLLABUS (4021)
This circular brings to your attention procedures for the assessment of Ordinary Level Computer Science (4021) candidates.

1. The Practical Coursework

Candidates will be expected to present a project. The expectations of the project were sent out in 2017 (see Appendix 1) and copies will be kept at Regional Offices for centres to photocopy if they find that to be more convenient.

A contents page should be prepared to indicate the location of sections of the project. The candidate's project should contain the individual assessment mark sheet (See Appendix 2) with all the teacher's marks indicated.

The project document should contain the project assessment form (See Appendix 3) with all candidates' marks recorded. In addition, the teacher should submit a soft copy of the candidates' work in the form of a CD. Each candidate should have a folder on the CD, where his/her project has been saved. The folder should have the candidate's name and number.

The project should be completed by 05 October 2018 and the projects should be submitted to ZIMSEC Regional Offices or ZIMSEC Cluster Collection Centres by 26 October 2018.

2. The Practical Examination

Each registered candidate will sit for a practical examination as indicated in the syllabus. The duration of the Practical Examination is 3 hours. Please note that the 3 hours does not include

Directors; Prof E. (Eddie) Mwenje (Chairperson), Mrs M.F Masiye – Moyo (Vice-Chairperson), Mr W.C Chanakira, Prof M. Furusa, Dr C.A.T Katsvanga, Ms F. Mokwena, Mr W.T Mufuka, Mr A.M Mukuvisi, Mr F. Mhlanga, Mr N. Nhapi, Prof L.M Nyagura, Mrs L. Ross, Ms B. Sigauke, Prof D.J Simbi, Prof K. Wekwete, Mr E.S Nhandara (Executive)

printing time. Therefore, candidates will be allowed to print their work after 3 hours of writing.

In the case where the number of candidates exceeds the number of computers/machines the centre has, the centre will be allowed to have two sessions. A maximum of 1 hour is allowable for the change over to the second session. The Computer Science teacher and other invigilators should make sure that all the machines have been cleared of documents before the second group starts writing. The two sessions would require that the Computer Science teacher creates candidate accounts for them to log in and save their documents.

Each candidate will be expected to submit a hard copy and a soft copy on CD. The CD should bear the School Name, Candidate Name and the full Candidate Number. Candidates should not use passwords on CDs.

2.1 Preparations Before the Practical Examination

Heads of Centres should make sure that adequate preparations have been made for the practical examination. Preparations should include the following:

- Servicing of machines
- Ordering enough stationery; bond paper and printer cartridges
- Ordering enough CDs
- Having a standby power source e.g generator
- Clearing machines of saved documents
- Creating candidate accounts in the case of two sessions
- Removing papers on the walls of the computer laboratory
- Cleaning the laboratory in general.

2.2 During the Examination

There is need for thorough supervision when the examination is written. The Computer Science teacher should be available for consultation but not in the examination room. Other invigilators will supervise the candidates as usual.

2.3 After the Examination

After the examination, candidates should be allowed to print their work. Printing time is outside the 3 hours. Candidates should tie their printouts together and submit both the hard copy and soft copy. The work is treated as examination material and should therefore be submitted in the normal way as the other scripts.

E. Masiri (Mrs)



Assistant Director: Test Development, Research and Evaluation
ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

APPENDIX 1

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL

COMPUTER SCIENCE 4021

PROJECT GUIDE 2018

The learner is required to develop a computer-based project to solve a specific problem using a high level programming language for example Visual Basic or Python. The project is to be carried out from Form 3 end of Term 2 up to Form 4 Term 2. This will enable the learners to use their skills and experience gained during the course to analyse, design, implement, test and evaluate the solution to a problem. Learners are advised to document every activity undertaken as they carry out the project.

The mark a candidate achieves is linked to the problem definition. Guidance from the teacher is needed in the choice of a problem. Teachers must provide on-going support, guidance and supervision while learners carry out the project.

Project Guide

The project must include the following layout

1. Cover page
2. Table of contents
3. Appendices
    - Sample of completed questionnaires
    - Sample of interview questions with respondent answers
    - Sample documents

SECTION A
Selection, Investigation and Analysis

- Problem Definition/Identification
- Investigation of the current system
    - Research instruments e.g. questionnaire, record inspection, interviews and observation.
- Broad description of existing system
- Evaluation of existing solution

-weaknesses
-strengths

- Requirements specifications
  - Software
  - Hardware.
- Aims and objectives
- Evidence that the research has been carried out.
  - Examples are filled in questionnaires, interviews with respondent answers, sample documents and write up on observation.

SECTION B
Design

- Consideration of alternative method.
  - Justification of method of solution
- Input design
- Appropriate data capture forms and screen layouts
- Output Design
  - Specification and design of the required output
- Test Plan
  - design and document a test plan

SECTION C
Software Development

- Technical documentation
  - Algorithms related to system requirements
    - pseudo codes
    - flowcharts for modules
  - codes/program listings
- User documentation
  - Installation
  - Starting the systems
  - Exiting the system

SECTION D
Testing and Evaluation

- User Testing
  - Test for standard, extreme and abnormal/invalid data
  - Evidence of testing to be shown through sample runs and error messages

- Evaluation of the system
  - Achievements
  - Limitations
  - Opportunities for future development

SECTION E

General Expectations

- Depth of Knowledge and Understanding
  - Reflects the degree of computing in the project
- Degree of Originality
  - Imagination and innovation
  - Has an attempt been made to do something different/unique?
- Quality of the completed report
  - Written report should be easy to follow
  - Defined sections, page numbers and an index.

COMPUTER SCIENCE 4021

Project Marking Guide

Section A: Selection, Investigation and Analysis [22]

i. Problem definition/Choice of problem area and background analysis [4]

- Meaningful name of system
- Location
- When it started
- Population Size
- Accept any meaningful variations

[Any 4 marking points]

ii. Investigation of the current system [4]

- Research Instruments [2 marks per instrument]
  - Questionnaires, Interview guides, Record Inspection, observation [4]

iii. Broad description of existing system [4]

- Clearly explain the input, output, process, storage of the existing system
  - Input [1]
  - Output [1]
  - Process [1]
  - storage [1]

iv. Evaluation of existing system **[2]**

- weakness
- strengths

v. Requirements specification **[2]**

- Software requirements [1]
- Hardware requirements [1]

vi. Aims and objectives **[4]**

- Aims [Any two aim] [2]
- 2 Objectives [1 mark per 1 objective] [2]

vii. Evidence of research **[2]**

- Any two from the following [one mark each]
  - Filled in questionnaire
  - Interview session (Question and answer)
  - Sample documents
  - Description of observations

Section B: Design [11]

(i) Consideration of alternative methods **[2]**

- At least 2 methods

(ii) Justification of method of solution **[2]**

(iii) Input design **[2]**

- Data capture forms [1]
- Screen layouts [1]

(iv) Output design **[2]**

- Specification of required output [2]
  [max 2]

(v) Test plan **[3]**

- Name and describe a test plan including test data and expected outcome in your description
  - name [1]
  - description [1]
  - outcome [1]

Section C: System Development [7]

(i) Technical documentation **[4]**

- At least2 Pseudocodes of any major modules. [2]
- At least 1 flow charts for any major modules. [1]
- Code/Program listing [1]

(ii) User documentation **[3]**

- Installation [1]
- Running the system [1]
- Exiting the system [1]

Section D: Testing and evaluation [5]

(i) User testing (any two) **[2]**

- Test for standard data. [1]
- Test for extreme data [1]
- Test for invalid/abnormal data [1]
- Error messages [1]

(ii) Evaluation of the system **[3]**

- Achievements [1]
- Weaknesses/Limitations [1]
- Opportunities for future developments [1]

Section E: General expectations [5]

- Depth of knowledge and understanding [1]
- Degree of originality [1]
- Ease of use (user documentation) [1]
- Quality [Defined sections, page number and contents) [2]

TOTAL: 50 marks

APPENDIX 3

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL
PROJECT ASSESSMENT FORM
COMPUTER SCIENCE 4021/4
EXAMINATION PERIOD: NOV 20_____

CENTRE NAME:														CENTRE NUMBER:					
		SECTION A: SELECTION, INVESTIGATION & ANALYSIS							SECTION B: DESIGN					SECTION C		SECTION D		SECTION E	TOTAL
EXPECTED MARK		22							11					7		5		5	50
Candidate No.	Candidate Name	4	4	4	2	2	4	2	2	2	2	2	3	4	3	2	3	5	50

TEACHER: _____ HOD: _____
SIGNATURE: _____ SCHOOL STAMP
DATE_____

MODERATOR: _____
SIGNATURE: _____
EXAMINER NUMBER:
_____
(FOR EXAMINER USE ONLY)

APPENDIX 2

ZIMBABWE SCHOOL EXAMINATIONS COUNCIL
PROJECT ASSESSMENT FORM
COMPUTER SCIENCE 4021/4
INDIVIDUAL MARK SHEET
EXAMINATION PERIOD: NOV 20_____

CANDIDATE NUMBER: ____ _____
CANDIDATE NAME:_____
CENTRE NUMBER: _____
CENTRE NAME: _____

	SECTION A: SELECTION, INVESTIGATION & ANALYSIS							**SECTION B: DESIGN**					**SECTION C**		**SECTION D**		**SECTION E**	**TOTAL**
	22							**11**					**7**		**5**		**5**	**50**
EXPECTED MARK	4	4	4	2	2	4	2	2	2	2	2	3	4	3	2	3	5	50
CANDIDATE MARK																		
MODERATED MARK **[FOR EXAMINER USE ONLY]**																		

TEACHER: _____ HOD: _____
SIGNATURE: _____ SCHOOL STAMP
DATE_____

MODERATOR: _____
SIGNATURE: _____
EXAMINER NUMBER:
_____
(FOR EXAMINER USE ONLY)