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OFFICE OF THE DEPUTY PRINCIPAL
ACADEMICS, STUDENT AFFAIRS AND RESEARCH

UNIVERSITY EXAMINATIONS

2019/2020 ACADEMIC YEAR

THIRD YEAR SECOND SEMESTER EXAMINATION

MAIN EXAMINATION

FOR THE DEGREE OF BACHELOR OF COMPUTER SCIENCE

COURSE CODE: COM 321

COURSE TITLE: COMPILER DESIGN

DATE: 3RD NOVEMBER, 2020 **TIME: 9.00 AM – 12.00 NOON**

INSTRUCTION TO CANDIDATES

- SEE INSIDE

THIS PAPER CONSISTS OF PRINTED PAGES **PLEASE TURN OVER**

COM 321: COMPILER DESIGN

STREAM: BSc (Computer Science) **DURATION: 3 Hours**

INSTRUCTIONS TO CANDIDATES

*i. Answer **ALL** questions from section A and any **THREE** from section B.*
ii. Maps and diagrams should be used whenever they serve to illustrate the answer.
iii. Do not write on the question paper.

SECTION A (24 MARKS) COMPULSORY

QUESTION ONE [12 MARKS]

a. Describe the term compiler **[2 Marks]**

b. Distinguish between an alphabet and a language **[4 Marks]**

c. Explain the activities that fall in front-end of a compilation process **[6 Marks]**

QUESTION TWO [12 MARKS]

a. Explain the purpose of the Symbol table and Error handler in compiler design **[4 marks]**

b. Describe FOUR general tools that have been created for the design of a compiler **[8 Marks]**

SECTION B [36 MARKS]

QUESTION THREE [12 MARKS]

a. Contrast between context-free grammar and context-sensitive grammar **[4 marks]**

b. Describe FOUR areas where compiler technology is applied **[8 Marks]**

QUESTION FOUR [12 MARKS]

a. Differentiate between a linker and a loader **[4Marks]**

b. There are several operations on languages in complier design. List four operations on languages **[8 Marks]**

QUESTION FIVE [12 MARKS]

a. With the help of a diagram, describe a language processing system **[12 Marks]**

QUESTION SIX [12 MARKS]

a. Discuss the classifications of a compiler **[9 Marks]**

b. List the phases that constitute the front end of the compiler **[3 Marks]**

QUESTION SEVEN [12 MARKS]

a. Differentiate between the following terms: tokens, lexeme and patterns **[6 Marks]**

b. Write a regular expression for an identifier **[2 Marks]**

c. List the various error recovery strategies for a lexical analysis **[4 Marks]**

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