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**University Examinations 2014/2015**

THIRD YEAR, FIRST SEMESTER EXAMINATION FOR THE DEGREE OF BACHELOR IN INFORMATION TECHNOLOGY.

**CIT 3327: ADVANCED PROGRAMMING.**

**DATE: AUGUST 2015 TIME: 2 HOURS**

**INSTRUCTIONS:** *Answer question* ***one*** *and any other* ***two*** *questions*

**QUESTION ONE (30 MARKS)**

1. Discuss any two advantages of components based software development (4 marks)
2. Briefly discuss the following terms. Give examples in each case. (6 marks)
3. Template
4. Events
5. Interface
6. Briefly explain how codes are organized in classes, methods and namespace. (6 marks)
7. Discus how form based user interface connects to data base in any DBMS. (4 marks)
8. Explain the term exception, handling. Illustrate how it’s achieved in **C#** programming language. (4 marks)
9. Write a program that capture student details which include regno, name,date-of-birth, contact and sponsor. Program should store all captured data on an external file named manufactured.txt. (6 marks)

**QUESTION TWO (20 MARKS)**

1. Describe any three components of ADO.net. (6 marks)
2. Describe how abstraction is achieved when using components to write programs. (6 marks)
3. (i) Describe how risks of software components security can be addressed. (4 marks)

(ii) Briefly explain how structures and classes assist in code organization. (4 marks)

**QUESTION THREE (20 MARKS) –marks totalling to 24.**

1. Write a C# program that display only repeating characters in name “NJUGUNA”. (4 marks)
2. ITRC is pleased with your outstanding performance in information technology coursed especially in programming. As such they would like to hire your services as consultant. Provide your advice on the following issues as proof of your competence.
3. Role of intelligent computer programs in enhancing safety of manufacturing process. (8 marks)
4. Ensuring survival and profitability in competitive manufacturing environment. (8 marks)

**QUESTION FOUR (20 MARKS)**

1. List four qualities C# as good programming language. (4 marks)
2. Explain role played by constructors in memory management, how is this achieved? (4 marks)
3. Write a form based C# program with Graphic User Interface (GUI) to connect to books database in drive D. Illustrate the GUI and code to activate the GUI. (12 marks)

**QUESTION FIVE (20 MARKS)**

1. Differentiate between value and reference date types. Give examples. (6 marks)
2. Explain main stages of application development using component based methods differs with traditional methods such as software development life cycle (SDLC) (10 marks)
3. Write a C# program with structure to capture and display several product details. (4 marks)