# NATIONAL OPEN UNIVERSITY OF NIGERIA

PLOT 91, CADASTRAL ZONE, NNAMDI AZIKIWE EXPRESSWAY, JABI-ABUJA
**FACULTY OF SCIENCES**
**DEPARTMENT OF COMPUTER SCIENCE**

**2022_2 EXAMINATION**

COURSE CODE:     CIT 333
COURSE TITLE:    Software Engineering
CREDIT UNIT:     2
TIME ALLOWED: 2HRS
INSTRUCTION:     ANSWER QUESTION ONE (1) AND ANY OTHER THREE

## Question 1

*1(a)*

(i)   Define programming software and application software *(3 marks)*
(ii)  Give five (5) instances of (i) above *(10 marks)*

*1(b)*
(i)   Give a brief summary of the goals of software engineering *(8 marks)*
(ii)  Briefly highlight the origin of software engineering *(3 marks)*
(iii) Evaluate four (4) areas where evolution of software engineering is notable *(6 marks)*

## Question 2

(i)    What are the principles for using Modular Design? *(8 marks)*
(ii)   State five (5) major tasks involve in Implementation of a system *(5 marks)*
(iii)  According to the Capability Maturity Model (CMMI-SW v1.1), define verification *(2 marks)*
(iv)   Software Crisis manifest itself in various forms, state five (5) of these forms *(5 marks)*

## Question 3

(a)   State the concept of Software Engineering *(2 marks)*
(b)   Highlight and evaluate five (5) sub-disciplines in Software Engineering *(12 marks)*

(c) Sounds engineering principles must be applied throughout development, from the design phase to final fielding of the system in order to attain a software system that satisfies the major goals. Give a concise explanation of these principles *(6 marks)*

## Question 4

(a) What are CASE Tools and CASE Environment? *(2 marks)*

(b) Briefly evaluate four (4) classification of CASE environment *(12 marks)*

(c) A Test Engineer uses software testing methods to describe his opinion when designing test cases. Briefly analyse two (2) of these testing methods *(6 marks)*

## Question 5

*(a)* There are phase-specific Software Quality Assurance activities that should be conducted during the Software Acquisition Life Cycle, evaluate five (5) out of the eight phases *(11½ marks)*

*(b)*

(i) Name four (4) types of white box testing we have in software testing methods *(4 marks)*

(ii) Program testing and fault detection can be aided significantly by testing tools and debuggers. Mention three of these tools *(4½ marks)*