SECTION A: ANSWER ALL QUESTIONS

Question one (30 marks)

a) Distinguish between the following terms/phrases as applied in software engineering
   i) Static testing and dynamic testing. **(2 marks)**
   ii) Alpha testing and Beta testing. **(2 Marks)**
   iii) Portability and reliability. **(2 marks)**
   iv) Analysis and design. **(2 marks)**
   v) Sequential cohesion and procedural cohesion. **(2 marks)**

b) Feasibility study is conducted during software development process in order to determine the viability of the software project. State and briefly explain four dimensions that can be considered during feasibility study. **(4 marks)**

c) Risk can be defined as any event that when occurs can interfere with the software development process. Outline the steps that can be used to manage risk in a software development process. **(4 marks)**

d) Discuss the importance of software Architecture in relation to software development. **(3 marks)**

e) Describe the elements of a Configuration management system. **(4 marks)**

f) Describe briefly the stages involved in the Generic Process Framework. **(5 marks)**

SECTION B: ANSWER ANY TWO QUESTIONS

Question Two (20 marks)

Discuss the following software development process models

a) Prototyping model. (7 marks)
b) Waterfall Model. (6 marks)
c) Unified process model (7 marks)

Question Three (20 marks)

a) In order to conduct unit testing of a software, you are required to prepare a test case. Identify and explain the targets of a unit test case. (5 marks)
b) Describe the testing strategy that can be applied to conventional Software. (4 marks)
c) Explain the following software testing techniques.
   i) Black-box testing. (3 marks)
   ii) White-box testing. (3 marks)
d) Describe the characteristics of the five levels of Software Process Maturity according to Capability Maturity Model (CMM). (5 marks)

Question Four (20 marks)

a) State and briefly explain any six software quality attributes provided by ISO standard. (5 marks)
b) Discuss the challenges associated with engineering large-scale software. (5 marks)
c) State and briefly explain the functions of a Software Configuration Management repository. (5 marks)
d) Describe the Toolset that is used on a Software Configuration Management repository. (5 marks)

Question Five (20 Marks)

a) Proper software project planning is important for the success of a software project. Discuss the task set for software project planning. (10 marks)
b) Discuss the basic principles to be considered when doing software project scheduling. (6 marks)
c) Explain any four conditions (sub-characteristics) under which functionality as a quality attribute can be specified. (4 marks)