



**UNIVERSITY EXAMINATION 2012/2013**

**SCHOOL OF PURE AND APPLIED SCIENCES  
DEPARTMENT OF INFORMATION TECHNOLOGY**

**BACHELOR OF INFORMATION TECHNOLOGY  
VIRTUAL CAMPUS**

**UNIT CODE: BIT 3102      UNIT TITLE: SOFTWARE ENGINEERING**

**OCTOBER 2013**

**SPECIAL/SUPPLEMENTARY**

**TIME: 2 HRS**

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**INSTRUCTIONS: ANSWER QUESTION ONE AND ANY OTHER**

**Question One – 30 Marks**

- a) Define the term software process as used in Software Engineering. (1 mark)
- b) Describe any two process models that can be used in software Engineering. (4 marks)
- c) List and explain four important attributes which all software products should have. (4 marks)
- d) Explain the 4Ps of project management. (6 marks)
- e) Explain the following software quality management activities. (6 marks)
  - (i) Quality assurance
  - (ii) Quality planning

(iii) Quality control

- f) Differentiate between perfective and adaptive maintenance. (2 marks)
- g) Define the term Ergonomics and show its importance in software development. (3 marks)
- h) List and explain four challenges that make project management a difficult task in software production. (4 marks)

**Question Two - 20 marks**

- a) Define the following terms as used in Software Engineering. (8 marks)
  - i) Systems decommissioning
  - ii) Emergent Properties
  - iii) Non- functional requirements
  - ii) Architectural Design
- b) Differentiate between a bottom-up design and a top-down design (2marks)
- c) Discuss the human factors to consider in interface design. (10marks)

**Question Three- 20 Marks**

- a) ) Discuss the effects of introducing CASE tools in software development. (6 marks)
- b) What is the critical distinction between a deliverable and a milestone? (2 marks)
- c) State reasons as to why project scheduling is one of the most difficult tasks in Software Engineering. (2 marks)
- d) Discuss ethical and professional issues in Software Engineering. (8 marks)
- e) Explain why legacy systems may be critical to the operation of a business. (2 marks)

**Question Four**

- a) Explain the people capability maturity model.(P-CMM) (2 marks)

- b) Explain the aims of the P-CMM as an effective framework for improving the management of people in an organization. (3 marks)
- c) Describe the P-CMM levels. (10marks)
- d) State and explain five factors that should be taken into account while selecting staff to work on a software development project. (5 marks)

**Question Five – 20 Marks**

- a) The Managing Director of a distributor of computer accessories is convinced that a new software system could help change the image of his company by the production of new look invoices and reports for the customers. This is despite that there are currently no substantial problems with the existing software. He calls you as the Software Engineer to briefly analyze the system and produce a feasibility report.

Required

- (i) What is a feasibility report? (1 mark)
  - (ii) Discuss how you would carry out the feasibility study. (8 marks)
  - (iii) Assuming the managing Director decided to proceed with the project, discuss two methods of requirements elicitation you would use and give reasons why they are appropriate. (2 marks)
  - (iv) List two recording techniques that can be used to analyze facts. (2 marks)
- b) Differentiate between alpha testing and beta testing. (2 marks)
  - c) List and explain five people involved in software inspections. (5 marks)