



MALAYSIAN INSTITUTE OF INFORMATION TECHNOLOGY

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**FINAL EXAMINATION**  
**JANUARY 2016 SEMESTER**

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**SUBJECT CODE** : ISB 42303  
**SUBJECT TITLE** : SOFTWARE CONFIGURATION MANAGEMENT  
**LEVEL** : BACHELOR  
**TIME / DURATION** : 9.00 am – 11.30 am  
( 2 ½ HOURS )  
**DATE** : 27 MAY 2016

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**INSTRUCTIONS TO CANDIDATES**

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1. Please read the instructions given in the question paper CAREFULLY.
2. This question paper is printed on both sides of the paper.
3. This question paper consists of TWO sections. Section A and Section B.
4. Answer ALL questions in Section A and Section B.
5. Please write your answers on the answer booklet provided.
6. Answer all questions in English.

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THERE ARE 5 PAGES OF QUESTIONS, INCLUDING THIS PAGE.

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**SECTION A (Total: 40 marks)****INSTRUCTION: Answer ALL questions.****Question 1**

- (a) State the FOUR (4) tasks of Software Configuration Management activities. (4 marks)
- (b) Describe the term "parallel development" and "branching". (5 marks)
- (c) Explain the term "check-in process" and "check-out process". (5 marks)
- (d) Discuss the purpose of SCM Plan documents. (6 marks)

**Question 2**

- (a) Compare the differences between configuration verification and configuration audit. Discuss the nature of the implementation of both activities. (6 marks)
- (b) It is important to record the activities and provide information that is accurate, timely and relevant. Describe the FOUR (4) types of reports used for configuration status accounting. (4 marks)
- (c) State the steps of change management and control process. Illustrate the diagram of this process. (10 marks)

**SECTION B (Total: 60 marks)****INSTRUCTION: Answer ALL questions.****Question 1**

- (a) One of SCM tasks is to: "Apply mechanisms that coordinate the changes made to a software configuration item (SCI) by preventing more than one team from simultaneously introducing changes into the same SCI".
- (i) Supply an example that illustrates the consequences of failure of SCM to effectively implement this objective. Explain your answer.  
(5 marks)
- (ii) Discuss another THREE (3) types of problems in software development process. You may add diagrams to your answer. Determine in which SCM core function that these problems can be solved.  
(6 marks)
- (b) Classification of defect depends on the phase that the defect occurs. Determine the defect type that can be produced from the following phases:
- (i) requirement analysis phase  
(ii) design phase  
(iii) coding and testing phase  
(9 marks)

**Question 2****Case Study: Configuration Management for a System Engineering Project**

A Configuration Management Personnel was involved in a project which spent nearly 4 years writing the specification for a system. It was a very complex system consisting of 23 processors in various redundancy configurations. At the peak, there were 21 software and 23 system engineers writing specifications. These specifications were revised with an alarming frequency. In order to overcome this problem, the configuration team insisted that the discipline of Configuration Management be established. However, the management's comment was that they understand the configurations of screws but not the documents.

The configuration team measured and discovered that 30% of the engineer's time was wasted by waiting for the word processing system to respond. This project did not roll out eventually (and very successfully – even after all their product cost less than 50% of that of the competition) but a lot of heads rolled. Configuration Management was established. A Software Configuration Management (SCM) system was installed on a mini computer. 2 people laboured for just under 2 years to create "human engineering envelope" for the SCM. The base product chosen was Change and Configuration Control (CCC). They did a marvellous job. However they think that may be other SCM tool that is better and more efficient.

All the questions below are based on the case study given.

- (a) Discuss the issues related to SCM for the above case study. Identify the baseline that can be produced from this phase of software life cycle.

(4 marks)

- (b) Design the steps for problem reporting and tracking process. Illustrate your answer using diagram.

(8 marks)

- (c) Imagine a situation where 2 engineers are simultaneously modifying requirements specification. What difficulties might arise when they try to merge the changes that they have made?

(3 marks)

- (d) You are given the task to set up the SCM team which consists of several people.

Write THREE (3) roles and responsibilities of people who may be involved in configuration management team.

(6 marks)

- (e) Describe SIX (6) essential features that should be included in a tool to support change management processes.

(6 marks)

- (f) Investigate the concept of the problem report form.

- (i) Design a detailed problem report form. Give a reason for the inclusion of each field of the form.

(10 marks)

- (ii) Explain the relation of change request (CR), problem report (PR) and problem analysis report.

(3 marks)

**END OF QUESTION**