SABARAGAMUWA UNIVERSITY OF SRI LANKA
FACULTY OF APPLIED SCIENCES

024

DEPARTMENT OF COMPUTING & INFORMATION SYSTEMS
BSc HONORS DEGREE PROGRAMME IN SOFTWARE ENGINEERING
SE 2019/2020 SEMESTER I EXAMINATION SEPT/OCT 2022

SE 1104 – SOFTWARE PROCESS CONCEPTS

Time allowed: **Three (03) Hours**

INSTRUCTIONS TO CANDIDATES:

This paper consists of FIVE (05) questions. Answer ALL questions.

The marks given in brackets are indicative of the weight given to each part of the question.

Write your Index No clearly in all places where appropriate.

Write clearly in English and use blue or black ink.

Non-programmable calculators are ALLOWED in this examination.

No clarifications will be provided on the given questions.

Strike a line through all unused pages in the answer booklet/sheets.

Cross out all scratch paper and hand in at the time of collection.

1 a Define in your own term what do you meant by the term software engineering. **[10 marks]**

b **Compare** and **contrast** computer science and software engineering. **[20 marks]**

c **Compare** and **contrast** software product and process. **[20 marks]**

d Briefly explain the major phases of Software process. **[25 marks]**

e Briefly explain the characteristics of Software Product Description. **[25 marks]**

2 a Define the importance of formal software process. **[15 marks]**

b Illustrate the **FOUR (04)** key factors of the development speed with the help of diagram. **[25 marks]**

c Briefly explain the **TWO (02)** types of Object-Oriented modelling concepts. **[20 marks]**

d Assume that you are the Team Leader for the following projects. What software process model would you choose for each of the projects and briefly justify your choice. **[40 marks]**

i. Project 01: - Web-site for a local company. Relatively small system. Requirements are vague and likely to change in the near future.

ii. Project 02: - A very large embedded system Whose requirements can be easily identified and are relatively stable.

iii. Project 03: - A 'standard' business application. You have developed similar systems in the past.

iv. Project 04: - A relatively complex administrative system for one of the local hospitals. Some of the requirements seem to be pretty vague, but all requirements are stable.

v. Project 05: - A small real time system to be used for monitoring patients in a local hospital.

3 a Define the terms process implementation and evolution in your own words. **[20 marks]**

b Briefly explain the **FOUR (04)** activities of process improvement. **[20 marks]**

c Briefly explain each elements of structured programming with help of suitable example. **[30 marks]**

d Briefly explain prototyping process with help of a diagram. **[30 marks]**

4 a What do you mean by system models? **[20 Marks]**

b Briefly explain the **THREE (03)** types of Object models. **[30 marks]**

c Briefly explain the **TWO (02)** types of software metrics. **[20 marks]**

d Briefly explain System modelling and stages of design. **[30 marks]**

5 a What do you mean by Classification of software quality metrics. **[10 Marks]**

b Briefly describe the **TWO (02)** classes of Software process quality metrics. **[20 marks]**

c Briefly describe the limitations of software metrics. **[20 marks]**

d Illustrate the benefits of Root cause analysis. **[20 marks]**

e Briefly analysis the how system engineering life cycle differ from SDLC with use of diagram. **[30 marks]**