

UNIVERSITY EXAMINATIONS

1ST SEMESTER 2022/2023 ACADEMIC YEAR

THIRD YEAR EXAMINATION FOR THE DEGREES OF
BACHELOR OF SCIENCE (COMPUTER
SCIENCE)/BACHELOR OF SCIENCE (ICT)

BICT 314/COMP 317: PROJECT MANAGEMENT

STREAM: R

TIME: 2 HRS

DAY: MONDAY [14.30 – 16.30]

DATE: 05/12/2022

THIS QUESTION PAPER CONSISTS OF THREE (3) PAGES

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INSTRUCTIONS: - Answer Question ONE and any other two questions

QUESTION ONE – COMPULSORY [30 Marks]

- (a) What is a **project** in the context of software and ICT project management? (3 marks)
- (b) Explain the purpose of a **Project Charter** and indicate three key elements contained in the charter. (5 marks)
- (c) What is contained in a project plan? (5 marks)
- (d) Describe briefly the tasks involved in project estimation. (4 marks)
- (e) A software project uses the Waterfall model to develop an embedded system for a security application. The requirements, design, construction, and testing phases take 20, 10, 25 and 10 days respectively. Draw a Gantt chart for this project. (3 marks)
- (c) Differentiate between a Kanban Board and a Work Breakdown Structure in terms of their use in project management. (3 marks)
- (e) Outline the tasks involved in software project risk management. (4 marks)
- (f) Describe the three core components of software quality management. (3 marks)

QUESTION TWO [20 Marks]

- (a) What are the four common processes you find in all projects? (5 marks)
- (b) Outline any five Areas of Knowledge contained in the PMBOK. (5 marks)
- (c) What are the **core constraints** described in the PMBOK and how are they related to each other? (5 marks)
- (d) Describe the tasks involved in the **initiation** phase of software and ICT projects. (5 marks)

QUESTION THREE [20 Marks]

- (a) Differentiate between adaptive and predictive project management approaches and give an example of each. (4 marks)
- (b) Explain why Kanban is not an agile framework? (3 marks)
- (c) What motivated the development of iterative or incremental software development models? (5 marks)

- (d) Why is Scrum favoured as an Agile project management framework over other agile frameworks? (3 marks)
- (e) Outline the four steps of the PRINCE2 Product-Based Planning approach. (5 marks)

QUESTION FOUR [20 Marks]

- (a) In what ways is software project estimation different from other estimation methods, for instance, a building construction project? (4 marks)
- (b) Outline three common metrics of software **size**. (6 marks)
- (c) How is software size, effort and cost related? (5 marks)
- (d) Use the following data to compute Effort, Schedule and Staffing for a small e-commerce software project using the basic COCOMO 81 model with an estimated size of 40 KLOC. (5 marks)

Software project	a	B	c	d
Organic	2.4	1.05	2.5	0.38
Semi-detached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

QUESTION FIVE [20 Marks]

- (a) Differentiate between project monitoring and project control. (3 marks)
- (b) What activities are involved in project control? (5 marks)
- (c) What are the common options for software project risk mitigation? (5 marks)
- (d) (i) What is the subject of the ISO/IEC 25010:2011 standard? (4 marks)
- (ii) Describe three elements of usability as per the ISO/IEC 25010:2011 standard. (3 marks)