

# ITP4522 Software Project Management and Quality Assurance

## CA Test 2021 – 22 (Online)

**Date / Time: 15-3-2022 (Tuesday) 09:00 - 10:00**

### **Instruction:**

1. All students are required to log in to MS teams during the test.
2. The total mark of this paper is 100.
3. Answer ALL questions.
4. This paper contributes 20% to the overall marks of the whole module (i.e. 40% of CA).
5. All answers MUST be handwritten on A4 papers. Any typed answer IS NOT accepted.
6. Write down your full name, class and student ID number and page number on top of EACH sheet of answer paper.
7. Submit your SCANNED WRITTEN answers to MOODLE by **15-3-2022, 10:20 am**.
8. Usually, you need only 60 minutes to complete this assessment. Extra 20 minutes is provided for you to download, scan and submit your works.
- 9. Late Submission would not be accepted.**
10. After you have finished the test, you need to submit a zip file with the name: yourname.zip (e.g. ChanTaiMan.zip, LeeSiuMing.zip, etc.) containing the answers to all questions.
11. If you have any problems with the submission, please send an email with attachment zip file to Mr. Kenneth Chan ([kenneth\\_chan@vtc.edu.hk](mailto:kenneth_chan@vtc.edu.hk)) and Miss. Nanoka Tse ([nanokatse@vtc.edu.hk](mailto:nanokatse@vtc.edu.hk)).
12. If you have any questions during the test, please call Mr. Kenneth Chan (68043804) or Miss. Nanoka Tse (65039602).

1. Explain briefly the FOUR phases of the SDLC. [8 marks]
2. Draw a diagram showing the various stages for Waterfall development and V-model development and discuss the main difference between the two models. [6 marks]
3. Name THREE project methodologies used in SDLC except for Waterfall development and V-model development. [3 marks]
4. Discuss THREE areas that are required in the feasibility study report. [9 marks]
5. Identify THREE main hardware components. [3 marks]
6. As an IT consultant of a start-up company that lacks capital and needs highly breadth information, which TWO techniques will you offer in the requirements elicitation process? (If more than two answers are given, marks only for the first two points.) [2 marks]
7. List out the THREE processes of the function point approach. [3 marks]
8. What is Architecture Design? What are the FOUR key architectural components? [4 marks]

**9. Read the case study and answer the questions.**

Company A is a second-hand vehicle transaction centre for selling and renting cars with an annual income of 950K and payroll expense is 700K per year. The management has decided to develop a computer system to improve the buy and sell processes. This project's scope is to build a point of sales system with inventory management.

The new system should have an online catalogue allowing the salespeople to search for the cars. The system should also provide add, edit and delete car records function in the inventory. All vehicles will be added an NFC tag by the storemen. Therefore, the salespeople can retrieve the car information from the system by reading the NFC tag.

The system will be web-based, hosted in Cloud, and developed by an external software company. It is assumed that the provider could set up the Cloud service and be available in a few days. The system is supposed to allow 50 concurrent access, and the system would be available 24 hours per day and seven days a week.

The CEO, Chris Wong hopes the project will speed up the sales process thence the clients will have a smooth rental or buying experience and bring up 10K more new customers and an additional income of 20% per year. He also hopes this project can reduce the number of employees to reduce 5% expenses per year.

The project schedule is tight. The system is expected to be ready in two months. The NFC tags are put on all cars within three months. Chris Wong would like to add some new features but have not confirmed yet.

The development budget is around 900K HKD, and the annual maintenance cost is about 90K HKD.

- a) Someone suggests using the Waterfall development methodologies. Do you agree?  
Explain your views in detail. [3 marks]
- b) List TWO categories of the costs. What are the costs of this project? [4 marks]
- c) List the difference between tangible and intangible benefits and list TWO tangible and TWO intangible benefits based on the case study. [6 marks]
- d) Draft a project charter for this project. [16 marks]
- e) Do you suggest Company A invest in this project? Explain your answer in details  
[3 marks]

10. You, as a project manager, are about to start an internal software development project.

The project activities and all the association durations are given below:

Activity	Dependencies	Duration (days)
A	-	3
B	-	2
C	A, B	5
D	B	4
E	C	3
F	D, E	3
G	A	5
H	F, G	3

Activity	Early Start	Late Finish	Late Start	Early Finish	Slack Time
A	0		0		0
B				2	
C	3		3		
D					
E		11			0
F	11				0
G			9		6
H	14			17	0

a) Fill in the missing figures in the above table. [25 marks]

b) Determine the critical path of the project. [5 marks]