(<u>Note:</u> this document was issued to all candidates prior to the examination as pre-reading material)

The SuRPASS Project

1.   Introduction

Great House System (GHS) is a large software house based in Singapore, but with branches in Malaysia and Thailand. They have been engaged by *Superior Realty* to develop a mobile application for use by *Superior Realty* property agents and main office staff - the *Superior Realty Property Agent Support System* (SuRPASS). This system will allow property agents to communicate with each other, and with the main office. It will support property agents in:

- Arranging and amending their daily schedule.

- Displaying real-time information to clients.

- Communicating with clients.

- Making agreements or conducting negotiations with clients.

This system will run on PDAs and mobile phones operated by the property agents, and backend processing will be performed on a server running at the *Superior Realty* main office. *Superior Realty* has contracted *GHS* to develop, test and install the application. The project consists of twelve activities:

1.   Write Project Plan.

2.   Requirements Analysis.

3.   Technical Feasibility Analysis.

4.   Design.

5.   Coding and Unit Testing.

6.   Subsystems Integration.

7.   Subsystems Test.

8.   Systems Integration.

9.   Systems Test.

10.   Beta Testing.

11.   Full Installation.

12.   Sign-off.

Development began in January and signoff **must** occur in mid–June, on day 40 on the gantt chart shown in figure 2.

2.   Staff Assignments and Details

A project leader (PL), a senior software engineer (SSE) and two programmers (PR1 and PR2) have been assigned full time to carry out this project. Two IT technicians (ITT1 and ITT2) are also available to carry out the installation of the SuRPASS software on the required

hardware. The PL reports to a project director (PD), who is also in overall charge of other projects.

- The PL and the SSE can do all software development and management tasks.

- PR1 and PR2 can perform software coding, integration and testing tasks.

- ITT1 and ITT2 can perform installation and hardware support tasks, but nothing else.

The following constraints exist on the staff resource availability:

a. The SSE must leave the project at the end of day 20, as he has been assigned to work on a new project from day 22 onwards.

b. The PL frequently gets asked to work on other tasks for GHS, in particular proposal preparation and presenting proposals to clients.

The cost rates for the project staff are:

Staff	Costs per day
Project Leader (PL)	$800
Senior Software Engineer (SSE)	$600
Programmers (PR1 & PR2)	$400
IT Technicians (ITT1 ITT2)	$200

3. Current Progress

It is now the beginning of May (day 1 as shown in figure 2). The project has just completed subsystem testing and is about to commence systems integration. The remaining budget for the project is $38,000. The plan for the remaining activities in the project has been revised, and the activities have been further subdivided into tasks. These are given below:

Activity 8	**Systems Integration**
Task 8.1	End-to-End Integration
Activity 9	**Systems Testing**
Task 9.1	Produce Test Plans
Task 9.2	Functional Testing
Task 9.3	Performance Testing
Task 9.4	Security Testing
Activity 10	**Beta Testing**
Task 10.1	Produce Field Test Plans
Task 10.2	Install SuRPASS on Field Trial Devices
Task 10.3	Mobile Phone Field Tests
Task 10.4	PDA Field Tests
Task 10.5	Review Results of Field Tests
Activity 11	**Installation**
Task 11.1	Install SuRPASS on All Machines
Activity 12	**Signoff**
Task 12.1	Acceptance Meeting

APPENDIX A

The effort required for each task is as follows:

Activity/ Task	Description	Staff Effort (man-days)						Total Effort	Task Dur.
		PL	SSE	PR1	PR2	ITT1	ITT2		
Activity 8	Systems Integration								
Task 8.1	**End-to-End Integration**		4	4	4			12	4
Activity 9	Systems Testing								
Task 9.1	**Produce Test Plans**	2						2	2
Task 9.2	**Functional Testing**	3	3	3	3			12	3
Task 9.3	**Performance Testing**	3		3				6	3
Task 9.4	**Security Testing**		3		3			6	3
Activity 10	Beta Testing								
Task 10.1	**Produce Field Tests Plans**	2						2	2
Task 10.2	**Install SuRPASS on Field Trial Devices**					1	1	2	1
Task 10.3	**Mobile Phone Field Tests**	2		5				7	13
Task 10.4	**PDA Field Tests**	2			5			7	13
Task 10.5	**Review Results of Ffield Tests**	1		1	1			3	1
Activity 11	Installation								
Task 11.1	**Install SuRPASS on All Machines**	1				4	4	9	4
Activity 12	Signoff								
Task 12.1	**Acceptance Meeting**	1						1	1
	TOTAL EFFORT	17	10	16	16	5	5	69	
	COST PER DAY	$800	$600	$400	$400	$200	$200		
	TOTAL COSTS	$13,600	$6,000	$6,400	$6,400	$1,000	$1,000		

The total costs for the remaining activities in the project are:

Labour Costs: $34,400

Remaining Contingency: $3,600

Total Budget: $38,000

Figure 1 below shows the precedence diagram for the project, and figure 2 shows the gantt chart for the remainder of the project.

Note: For simplicity it is assumed that each month consists of 4 weeks and each week consists of 5 working days.

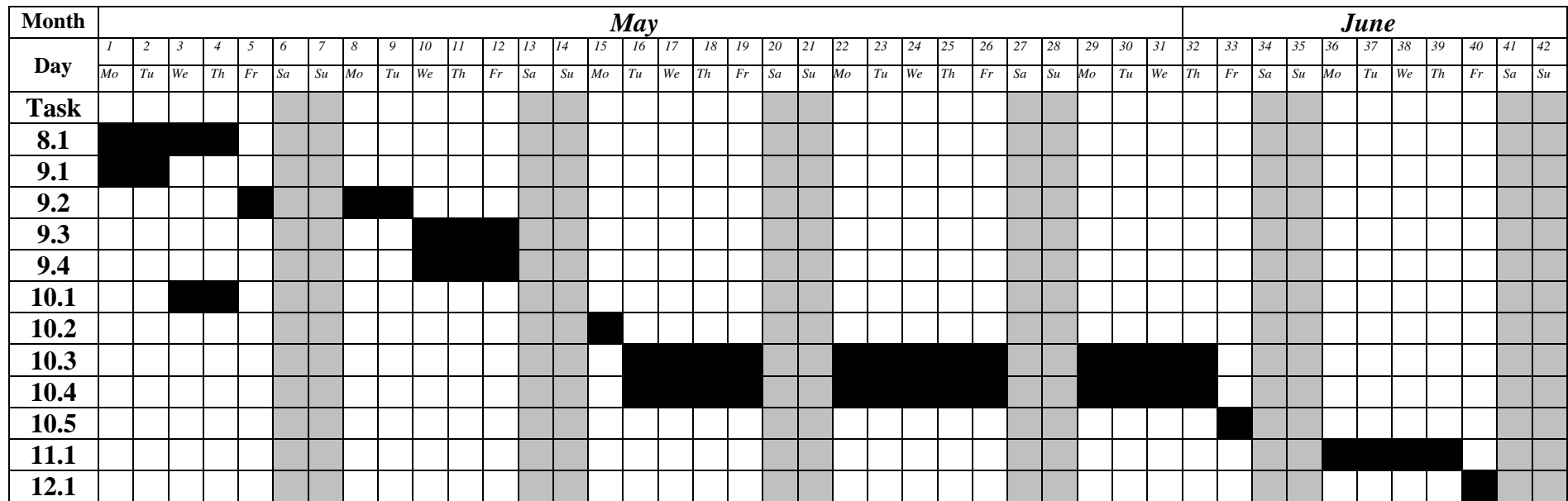Thus the project is 5½ months long = 22 weeks = 110 days.

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APPENDIX A

Figure 1:   Precedence Analysis Chart for the SuRPASS Project

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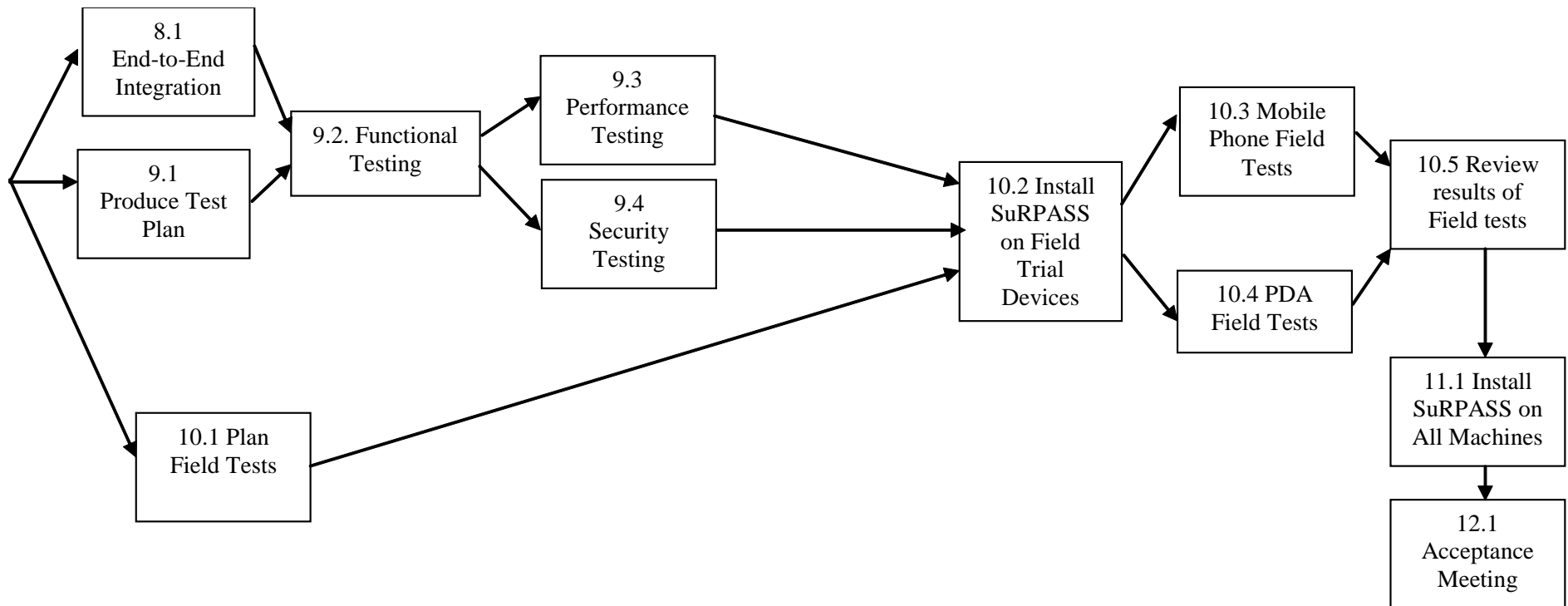
Figure 2:   Gantt Chart for the Remaining Activities in the SuRPASS Project

End of Project

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