

CS587 – Software Project Management
Assignment #4

A20402686

Defect Origin										
Where Found		Requirement	Analysis	Design	Coding	Unit Testing	Integration Testing	System Testing	Field	Total
	Requirement	50								50
	Analysis	24	45							69
	Design	56	51	77						184
	Coding	48	47	84	189					368
	Unit Testing	22	14	38	78	12				164
	Integration Testing	17	22	47	41	-	11			138
	System Testing	11	12	16	33	-	-	19		91
	Field	3	2	4	3	-	-	-	3	15
	Total	231	193	266	344	12	11	19	3	1079

Answers for 1, 2 and 3:

Phase	Defects removal per KLOC	Defects injection per KLOC	Defects escaped per KLOC
Requirement	0.4	1.9	1.50
Analysis	0.6	1.6	2.54
Design	1.5	2.2	3.23
Coding	3.1	2.9	3.03
Unit Testing	1.4	0.1	1.75
Integration testing	1.2	0.1	0.7
System testing	0.8	0.2	0.1
Total	9.0	9.0	12.85
Field	0.2		

Answer 4: Overall defect removal effectiveness = $(1 - 15 / 1079) * 100 = 98.6\%$

Answer 5: System testing is most effective in defects removal as defect removal effectiveness in this phase is 85.84%.

Answer 6: Reviews and inspections were only 62.18% effective. Reviews and inspection are not effective because the benchmark is 95%.

Answer 7: It will have a negative impact on defect removal effectiveness in the coding phase because, after incrementing by 10%, the total number of defects originated at design phase will be 292.6 \approx 293 and the total number of defects detected in design phase will be 202.4 \approx 203. Hence, the total number of defects escaped from design phase increases by an amount of 8 (number of defects escaped from design phase with old values is 387 and number of defects escaped from design phase with new increased values is 395, $395 - 387 = 8$). This clearly has a negative impact on coding phase as it will detect new defects in design.