



COMSATS University, Islamabad
Vehari Campus
Department of Computer Science

Sessional-I (Software Quality Engineering)

Total Time: 1 Hour

Total Marks: 15

Note: Attempt all questions

Q.No.1 In a juice company, a customized juice is being manufactured in result of an online survey conducted. The survey offers ingredients and their proportions being used in a juice. Also company can send a taster to the successful recipe builder.

2+2+1+2

- a) List core functions to be developed
- b) List most important quality attributes
- c) List the type of software
- d) Select the process model to engineer the required quality

Q.No.2 For the above software calculate the cost using COCOMO

1+2+2

- a) List inputs/outputs
- b) List external interfaces/ files
- c) Cost have to be calculated with Function Points, Person Months, Total Months and if 1PM=10,000RS what would be total cost in rupees.

Q.No.3 Differentiate between

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- a. Bugs and Errors
- b. Faults and Defects
- c. Crash and Failures



Best of luck is subjected to hard-work

Relation between LOC and FPs

Language	LOC/FP
assembly	320
C	128
Cobol	105
Fortan	105
Pascal	90
Ada	70
OO languages	30
4GL languages	20

Java = 53, C++ = 64

$$aKLOC = FP * LOC_per_FP / 1000TCF = 0.65 + 0.01 * DI$$

$$FP = UFP * TCF$$

• Technical Complexity Factors:

1. Data Communication
2. Distributed Data Processing 0
3. Performance Criteria
4. Heavily Utilized Hardware 0
5. High Transaction Rates 3
6. Online Data Entry 3
7. Online Updating 3
8. End-user Efficiency 3
9. Complex Computations 0
10. Reusability 3
11. Ease of Installation 3
12. Ease of Operation 5
13. Portability 3
14. Maintainability 3

Parameter	simple	average	complex
users inputs	3	4	6
users outputs	4	5	7
users requests	3	4	6
files	7	10	15
external interfaces	5	7	10

Mode	a	b	c	d
Organic	3.2	1.05	2.5	0.38
Semi-detached	3.0	1.12	2.5	0.35
Embedded	2.8	1.20	2.5	0.32