


Name:			
Enrolment No:			
UPES End Semester Examination, May 2024			
Course: Software Engineering and Project Management Program: B.Tech. CSE-ALL Course Code: CSEG 2008		Semester: IV Time : 03 hrs. Max. Marks: 100	
Instructions: Attempt all the questions.			
SECTION A (5Qx4M=20Marks)			
S. No.		Marks	CO
Q 1	How are software myths affecting software process? Explain with the help of example.	4	CO1
Q 2	Describe the role of management in software development with the help of example.	4	CO1
Q 3	Discuss the selection process parameters for a life cycle model.	4	CO2
Q 4	List out the characteristic of a good SRS.	4	CO2
Q 5	Discuss the present state of practices in requirement engineering. Suggest few steps to improve the present state of practice.	4	CO2
SECTION B (4Qx10M= 40 Marks)			
Q 6	Following information is provided for a program: Program Vocabulary $\eta_1=24$ and $\eta_2=18$ and Program Length $N_1= 84$ and $N_2=55$ Compute the following: a) Estimated program length b) Program volume c) Estimated program level d) Effort e) Time	2+2+2+2+2	CO3
Q 7	Consider a project with the following functional units: Number of user inputs = 50 Number of user outputs = 40 Number of user enquiries = 35 Number of user files = 06 Number of external interfaces5 = 04	10	CO3

Assume all complexity adjustment factors and weighting factors are average. Compute the function points for the project.

The given table 1 is for your reference.

Functional Units	Weighting factors		
	Low	Average	High
External Inputs (EI)	3	4	6
External Output (EO)	4	5	7
External Inquiries (EQ)	3	4	6
External logical files (ILF)	7	10	15
External Interface files (EIF)	5	7	10

Table 1 : Functional units with weighting factors

OR

Compare the Walston-Felix model with the SEL model on a software development expected to involve 8 person-years of effort.

- Calculate the number of lines of source code that can be produced.
- Calculate the duration of the development.
- Calculate the productivity in LOC/PY
- Calculate the average manning

Q 8	Illustrate the role and responsibilities of a Project Manager.	10	CO4
Q 9	Discuss the significance of the CMM Model? Explain the different levels of CMM model.	10	CO4

SECTION-C
(2Qx20M=40 Marks)

Q 10	<p>Consider a program for the determination of the nature of roots of a quadratic equation. Its input is a triple of positive integers (say a,b,c) and values may be from interval [0,100]. The program output may have one of the following words. [Not a quadratic equation; Real roots; Imaginary roots; Equal roots] Design the boundary value test cases</p> <p style="text-align: center;">OR</p> <p>Consider a program for determining the Previous date. Its input is a triple of day, month and year with the values in the range $1 \leq \text{month} \leq 12$ $1 \leq \text{day} \leq 31$ $1900 \leq \text{year} \leq 2025$</p>	20	CO4
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	<p>The possible outputs would be Previous date or invalid input date. Design the boundary value test cases.</p>																						
<p>Q 11</p>	<p>a) Suppose that a project was estimated to be 400 KLOC. Calculate the effort and development time for each of the three modes i.e., organic, semidetached and embedded.</p> <p>b) A project size of 200 KLOC is to be developed. Software development team has average experience on similar type of projects. The project schedule is not very tight. Calculate the effort, development time, average staff size and productivity of the project.</p> <p>The given table is for your reference.</p> <table border="1" data-bbox="274 695 1138 1054"> <thead> <tr> <th>Software Project</th> <th>a_b</th> <th>b_b</th> <th>c_b</th> <th>d_b</th> </tr> </thead> <tbody> <tr> <td>Organic</td> <td>2.4</td> <td>1.05</td> <td>2.5</td> <td>0.38</td> </tr> <tr> <td>Semidetached</td> <td>3.0</td> <td>1.12</td> <td>2.5</td> <td>0.35</td> </tr> <tr> <td>Embedded</td> <td>3.6</td> <td>1.20</td> <td>2.5</td> <td>0.32</td> </tr> </tbody> </table> <p style="text-align: center;">Table : Basic COCOMO coefficients</p>	Software Project	a_b	b_b	c_b	d_b	Organic	2.4	1.05	2.5	0.38	Semidetached	3.0	1.12	2.5	0.35	Embedded	3.6	1.20	2.5	0.32	<p>10+10</p>	<p>CO3</p>
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