Reg No.:_____ · · · · · · · · · · Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

B.Tech Degree S6 (S, FE) / S4 (PT) (S, FE) Examination May 2023 (2015 Scheme)

Course Code: CS308

Course Name: SOFTWARE ENGINEERING AND PROJECT MANAGEMENT

Max. Marks: 100 · Duration: 3 Hours

PART A
Answer all questions, each carries3 marks.

Marks

1	Define the term software crisis. List out the causes of software crisis.	(3)
2	Which software process model allows risk management? Justify your answer.	(3)
3	Explain any three techniques used for requirement elicitation.	(3)
4	What are the umbrella activities of generic software process framework?	(3)

PART B
Answer any two full questions, each carries9 marks.

5 a) Explain classic waterfall model with a neat diagram? Discuss about its features, phases, advantages and disadvantages. (7)

 b) Discuss the term phase containment of errors. (2)

6 a) What is software requirements specification (SRS)? Explain any four desirable characteristics of a good SRS document. List the important issues, which an SRS must address. (7)

 b) Define the term software prototyping. (2)

7 a) What is incremental process mode? What does it focus on and when it is useful? Explain with neat diagram. (4.5)

 b) An organization advertises that it is at SEI CMM level 3. Infer the quality practices followed in the company. Explain how the company can reach SEI CMM level 5. (4.5)

PART C
Answer all questions, each carries3 marks.

8 Consider a project to develop a full screen editor. The major components identified are (1) Screen edit, (2) Command Language Interpreter, (3) File input and output, (4) Cursor movement and (5) Screen movement. The sizes for these are estimated to be 4K, 2K, 1K, 2K and 3K delivered source code lines. Let us assume that significant cost drivers are (3)

(a) Required software reliability is high i.e. 1.15

(b) Product complexity is high i.e. 1.15

(c) Analyst capability is high i.e. 0.86

(d) Programming language experience is low i.e 1.07

All other drivers are nominal. Use COCOMO model to determine the following.

1. Initial Effort

2. Total effort

3. Duration of the project.

9	Compare top-down and bottom-up design strategies.	(3)
10	Explain the following terms.	(3)

    a. Coding Standards

    b. Code Walk through

    c. Code Inspection

| 11 | What is cyclomatic complexity? Explain with the help of an example. | (3) |

PART D
Answer any two full questions, each carries 9 marks.

12	a)	Distinguish between Cohesion and Coupling.	(4)
	b)	Assume that the size of a software product has been estimated to be 40,000 lines of source code. Assume that the average salary of software engineers be 25,00 $ per month. Determine the following:	(5)

- Effort required to develop the software product
- The nominal development time
- Average staff size
- Productivity
- Cost required to develop the product

13	a)	Explain about Unit testing in detail.	(5)
	b)	What do you understand by the term system testing? What are the different kinds of system testing that are usually performed on large software products?	(4)
14	a)	Discuss the importance of project planning. What are the activities carried out during project planning?	(4.5)
	b)	What is the purpose of integration testing? How is it done?	(4.5)

PART E

Answer any four full questions, each carries 10 marks.

15 a) What is software maintenance? Describe various categories of maintenance. (6)
Which category consumes maximum effort and why?

b) Discuss **4P's** of Software Project Management concept. (4)

16 a) What are risk management activities? Is it possible to prioritize risk? (7)

b) What is ripple effect? How does it affect the stability of a program? (3)

17 a) What are CASE Tools? Explain building blocks for CASE. (8)

b) What do you understand by software configuration? (2)

18 a) Explain SCM (Software Configuration Management) activities in detail. (7)

b) List the basic principles guide software project scheduling. (3)

19 a) List out and explain any five case tools. (5)

b) Annual change traffic for a software system is 12% per year. The development (5)
effort is 800 PMs. Compute an estimate for annual maintenance effort (AME). If
life time of the project is 15 years, what is the total effort of the project?

20 a) Explain the steps of software maintenance with help of a diagram. (5)

b) Discuss the rules for user interface design. (5)

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