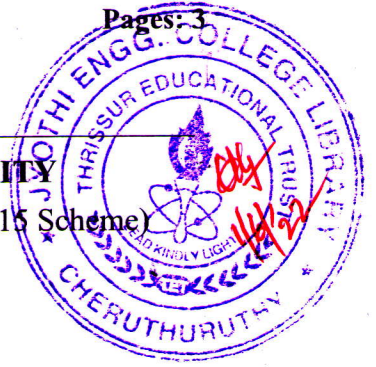


Reg No.: _____

Name: _____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

Sixth Semester B.Tech Degree (S,FE) Examination May 2022 (2015 Scheme)

**Course Code: CS308****Course Name: SOFTWARE ENGINEERING AND PROJECT MANAGEMENT**

Max. Marks: 100

Duration: 3 Hours

PART A*Answer all questions, each carries 3 marks.*

Marks

- | | | |
|---|--|-----|
| 1 | Define a software prototype ? Under what circumstances is it beneficial to construct a prototype? | (3) |
| 2 | Explain software engineering as a layered technology. | (3) |
| 3 | Explain Facilitated Application Specification Technique (FAST) and compare this with brainstorming sessions. | (3) |
| 4 | Is software a product or process? Justify your answer with example | (3) |

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

- | | | |
|---|--|-----|
| 5 | a) Why classical waterfall model is considered as a theoretical way of developing a software? Justify your answer. | (4) |
| | b) Explain Spiral Model for software development with a neat diagram. Is the number of loops of the spiral fixed for different development process? Justify your answer. | (5) |
| 6 | a) Describe the various steps of requirements engineering. Is it essential to follow these steps ? | (4) |
| | b) Explain Capability Maturity Model (CMM). Why is it suggested that CMM is the better choice than ISO-9001? | (5) |
| 7 | a) List out and explain the major requirement elicitation techniques. | (5) |
| | b) Consider the problem of developing a library management software and design the following:
Problem statement ii) Use case diagram | (4) |

PART C*Answer all questions, each carries 3 marks.*

- 8 Suppose that a project was estimated to be 400 KLOC. Calculate the effort (3)
and development time for organic mode software.
- 9 Discuss any two software size estimation metrics. (3)
- 10 Describe the different Black box testing strategies (3)
- 11 Illustrate basis path testing with an example. (3)

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

- 12 a) What is the need of a modular system? Describe the effects of cohesion and (5)
coupling in modular design?
- b) Explain any two White box testing strategies. (4)
- 13 a) A new project with estimated 400 KLOC embedded system has to be (6)
developed. Project manager has a choice of hiring from two pools of
developers: Very highly capable (assume 0.82 as the cost driver value) with
very little experience (assume 1.14 as the cost driver value) in the
programming language being used or developers of low quality (assume
1.29 as the cost driver value) but a lot of experience with the programming
language(assume 0.95 as the cost driver value). What is the impact of hiring
all the developers from one pool or the other?
- b) Define cyclomatic complexity of a program? Explain with the help of an (3)
example.
- 14 a) An application has the following: 10 low external inputs, 12 high external (5)
outputs, 20 low internal logical files, 15 high external interface files, 12
average external inquiries, and a value of complexity adjustment factor of
1.10. What are the unadjusted and adjusted function point counts ?
- b) Explain the significance of testing in a Software Development Life Cycle. (4)

PART E*Answer any four full questions, each carries 10 marks.*

- 15 a) Describe Taute Maintenance Model? (5)
- b) Illustrate CASE environment with a neat sketch. (5)
- 16 a) Discuss 4 p's of software management concepts. (4)

- b) Outline any four rules for user interface design . Explain different types of user interface. (6)
- 17 a) The development effort for a software project is 500 person months. The empirically determined constant (K) is 0.3. The complexity of the code is quite high and is equal to 8. Calculate the total effort expended (M) , if (5)
- (i) maintenance team has good level of understanding of the project (d=0.9)
- (ii) maintenance team has poor understanding of the project (d=0.1)
- b) Discuss any five types of CASE tools. (5)
- 18 a) Describe Risk management activities in detail (5)
- b) Discuss how to define a task set for the software project ? (5)
- 19 a) Explain software configuration management activities in detail. (5)
- b) Describe various categories of Software maintenance. Which category consumes maximum effort and why? (5)
- 20 a) Describe any two project scheduling techniques. (5)
- b) List out the various types of risks in software projects? Is it possible to prioritize the risk ? (5)
