NARULA INSTITUTE OF TECHNOLOGY
An Autonomous Institute under MAKAUT

B.TECH/CSE/EVEN/SEM 6/R_18/ CS603/2022-2023
YEAR: 2023

SOFTWARE ENGINEERING
CS603

TIME ALLOTTED: 3 HOURS FULL MARKS: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable

GROUP – A
(Multiple Choice Type Questions)

1. Answer any ***ten*** from the following, choosing the correct alternative of each question: **10×1=10**

SL	Question	Marks	Co	Blooms Taxonomy Level
(i)	Which testing is an integration testing approach that is commonly used when "shrink-wrapped" software products are being developed? a) Regression Testing b) Integration testing c) Smoke testing d) Validation testing	1	CO1	2
(ii)	CMM stands for a) Capability Management Module b) Conservative Maturity Model c) Capability Maturity Module d) Capability Maintenance Model	1	CO4	3
(iii)	What type of software testing is generally used in Software Maintenance? a) Regression Testing b) System Testing c) Integration Testing d) Unit Testing	1	CO5	3
(iv)	LOC stands for a) Line of Customer b) Lowering of Cost c) Line of Code d) License of Client	1	CO2	1
(v)	Which one is NOT a measure of size estimation for software product? a) Cyclomatic complexity b) Halstead's program length c) Function point d) Line of code	1	CO3	2
(vi)	To compute function points (FP), the following relationship is	1	CO4	5

used FP = Count - total x (0.65 + 0.01 x ∑(Fi))where Fi (i = 1 to n) are value adjustment factors (VAF) based on n questions. The value of n is

a) 12
b)14
c)16
d)18

(vii)	To achieve a good design, modules should have a) low cohesion and low coupling b) low cohesion and high coupling c) high cohesion and low coupling d) high cohesion and high coupling	1	CO1	4
(viii)	Function points can be calculated by a) UFP * FAC b)UFP * TCF c)UFP * Cost d)UFP * Productivity	1	CO3	5
(ix)	Which of the following risk is the failure of connection in purchased mobile component to perform as expected? a) Technical risk b) Project risk c) Business risk d) Programming risk	1	CO4	3
(x)	COCOMO stands for a) COmposite COst Model b) COnstructive COst Model c) COnstructive COmposite Model d) COmprehensive COnstruction MOdel	1	CO3	1
(xi)	Structured Analysis is based on the principles of a) Top-down decomposition approach b) Divide and conquer principle c) Graphical representation of results using DFDs d) All of the mentioned	1	CO1	2
(xii)	Which of the following is structural view? a) Use case diagram b) Sequence diagram c) Object diagram d) Component diagram	1	CO2	3

GROUP – B
(Short Answer Type Questions)
(Answer any three of the following) 3 x 5 = 15

SL		Question	Marks	Co	Blooms Taxonomy Level
2.	(i)	What is SRS?	1	CO2	1

	(ii)	Briefly explain the characteristics of a good SRS.	2	CO2	2
	(iii)	Differentiate functional and nonfunctional requirement	2	CO3	3
3.	(i)	What is the major role of software project manager?	2	CO2	2
	(ii)	What do you mean by Work Breakdown Structure (WBS)?	2	CO3	1
	(iii)	What is organizational team structure?	1	CO2	2
4.	(i)	What is the characteristics of good software design ?	2	CO4	2
	(ii)	Differentiate cohesion and coupling of modules.	3	CO4	4
5.	(i)	What is software reliability?	1	CO5	1
	(ii)	Differentiate between black box testing and white box testing.	2	CO4	4
	(iii)	What do you mean by fault, failure and error?	2	CO4	3
6.	(i)	Define with examples the different categories of software development projects according to the COCOMO estimation model	3	CO3	4
	(ii)	The size of an organic type software system to be developed by SCV Consultancy Services has been estimated to be 200 KLOC. Determine the effort required to develop the software system	2	CO4	5

GROUP – C
(Long Answer Type Questions)

(Answer any three of the following) 3 x 15 = 45

SL		Question	Marks	Co	Blooms Taxonomy Level
7.	(i)	Explain the different software development (SDLC) Model?	6	1	2
	(ii)	What are the advantage and disadvantage all the SDLC Model?	5	2	2
	(iii)	Why spiral model considered to be a meta model?	4	3	3
8.	(i)	Consider a software project with 5 activities T1 to T5. Duration of the 5 activities in weeks are 3,2,3,5,2 respectively.T2 and T4 can start when T1 is complete.T3 can start when T2 is complete. T5 can start when both T3 and T4 are complete. Draw the activity network diagram. when is the latest start date of the activity T3. Consider the above software project.	8	CO2	5

		a) Draw the Network diagram for given project. b) Draw the GANTT chart for given project and find the critical path.			
	(ii)	Distinguish between a data flow diagram(DFD) and Entity relationship diagram(ERD).	7	CO2	4
9.	(i)	What is Coding? Briefly explain the characteristics of a good coding standard.	1+3	CO3	2
	(ii)	What is meant by testing? What is a alpha testing and beta testing? Briefly explain unit testing.	2+3+6	CO4	2
10.	(i)	What do you mean by software quality and reliability?	4	CO3	3
	(ii)	What are the difference between verification and validation?	4	CO3	3
	(iii)	Explain what are the different kinds of system testing that are usually performed on large software product.	7	4CO	4
11.		**Write short notes on (Any three)** a) Risk Management b) UML Diagram c) WBS d) CASE tools e) PERT chart	15	CO5	3