Reg.No.:												

VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
[AUTONOMOUS INSTITUTION AFFILIATED TO ANNA UNIVERSITY, CHENNAI]
Elayampalayam – 637 205, Tiruchengode, Namakkal Dt., Tamil Nadu.

Question Paper Code: 5001

B.E. / B.Tech. DEGREE END-SEMESTER EXAMINATIONS – MAY / JUNE 2024
Eighth Semester
Computer Science and Engineering
U19CSE30 – SOFTWARE PROJECT MANAGEMENT
(Regulation 2019)

Time: Three Hours Maximum: 100 Marks

Answer ALL the questions

Knowledge Levels (KL)	K1 – Remembering	K3 – Applying	K5 - Evaluating
	K2 – Understanding	K4 – Analyzing	K6 - Creating

PART – A

(10 x 2 = 20 Marks)

Q.No.	Questions	Marks	KL	CO
1.	List two common types of risks that a typical application software development project might suffer from. Give one example of each type of risk you have identified.	2	K1	CO1
2.	Identify four major responsibilities of a software project manager.	2	K1	CO1
3.	What do you understand by *project size*? Name at least two popular metrics to measure project size?	2	K1	CO2
4.	What do you understand by *pair programming*? In what ways is pair programming advantageous compared to traditional programming?	2	K2	CO2
5.	Why is it necessary for a project manager to decompose the project tasks using Work Breakdown Structure (WBS)? To what granularity level should the tasks be decomposed?	2	K2	CO3
6.	What is a critical path in a project schedule? How does identification of critical path help project manager in managing a project effectively?	2	K2	CO3
7.	What do you understand by *software configuration*? Why is software configuration management crucial to the success of large software product development projects (write only two important reasons)?	2	K2	CO4

8.	Briefly explain how computation of Earned Value (EV) and Planned Value (PV) can help a project manager in effective project tracking?	2	K2	CO4
9.	According to the Oldham and Hackman model, what are the job characteristics that make a job meaningful to an employee and leads to job satisfaction?	2	K1	CO5
10.	What do you mean by egoless programming? What are the advantages of egoless programming?	2	K2	CO5

PART – B

(5 x 13 = 65 Marks)

Q.No.		Questions	Marks	KL	CO
11.	a)	What do you mean project portfolio management? What are the advantages of project portfolio management in an organization undertaking a number of projects?	13	K2	CO1
		(OR)			
	b)	Define the terms Return on Investment (RoI), Payback period, Net Present Value (NPV), and Internal Rate of Return (IRR). Why does it make good business sense for a manager to consider IRR rather than the payback period?	13	K2	CO1
12.	a)	Suppose a project manager is using the COCOMO estimation technique. i. What is the order in which he/she would estimate the following project parameters: cost, effort, duration, size? Represent the precedence ordering among these activities using a task network diagram. ii. In what units is effort estimation is expressed?	13	K3	CO2
		(OR)			
	b)	In the context of Scrum software development model, explain the following terms: Sprint, Product backlog, sprint backlog, sprint burn down chart. Briefly explain the roles of the members of a scrum team.	13	K3	CO2
13.	a)	Consider a software project with 5 tasks T1 --- T5. Duration of the 5 tasks in weeks are 3,2,7,5,2 respectively. T2 and T4 can start when T1 is complete. T3 can start when T2 is complete. A T5 can start when both T3 and T4 are complete. i. Draw the PERT chart representation of the project. ii. When is the latest start date of the task T3. What is the slack time of the task T4. Which tasks are on the critical path?	13	K3	CO3

(OR)

	b)	Suppose you are the project manager of a project to port an academic automation software your team had developed for some institution for a different client education institution. Explain how you can identify the risks that your project is susceptible to. Point out the main steps you would follow to manage various risks in your software project.	13	K4	CO3
14.	a)	i. What is the difference between a *revision* and a *version* of a software product?	13	K3	CO4
		ii. What do you understand by the terms *change control* and *version control*? Explain how change and version control are achieved using a configuration management tool.			
		(OR)			
	b)	Suppose a project involves development of 10 almost equal sized modules over a duration of 10 weeks. The agreed budget for the project is Rs. 10,000,000. At the end of 5 weeks, the project manager finds that 4 modules have been fully developed and tested. But, Rs. 4,500,000 has been spent till date. Compute Planned Value (PV), Actual Cost (AC), Earned Value (EV), Cost Variance (CV) and Schedule Variance (SV).	13	K3	CO4
15.	a)	In the context of functioning of a project team, what do you understand by *social loafing*? How will you address this problem as a project manager?	13	K3	CO5
		(OR)			
	b)	What are the main advantages of virtual teams? What are the challenges in the effective functioning of a virtual team?	13	K3	CO5

PART – C

(1 x 15 = 15 Marks)

Q.No.		Questions	Marks	KL	CO
16.	a)	i. Distinguish between Department structure and Team structure. Name two popular Department structure formats and three popular team structure formats. Briefly discuss these formats.	10	K3	CO5
		ii. For a very large but challenging project, which team structure would you recommend? Briefly justify your choice.	5		
		(OR)			

b) Suppose you are the project manager of a software project requiring activities, whose characteristics are given in the following table. K4 CO2

Activity No.	Activity Name	Duration in weeks	Immediate predecessor
1.	Gather requirements	4	-
2.	Analyze Requirements	2	-
3.	Write SRS document	1	
4.	Define subsystems	2	3
5.	Develop database	4	4
6.	Make decision analysis	3	5
7.	Identify constraints	2	6
8.	Build module 1	8	7
9.	Build module 2	12	7
10.	Build module 3	18	7
11.	Write report	10	7
12.	Integration and test	8	8,9,10
13.	Site Implementation	2	11,12

i. Draw the Activity Network representation of the project. 5

ii. Determine ES, EF and LS, LF for every task. Determine the critical path. 10