PRN No.		PAPER CODE	U313 – 234 – ESE

December 2023 (ENDSEM) EXAM

TY (SEMESTER - I)

COURSE NAME: SOFTWARE ENGINEERING   Branch: COMPUTER   COURSE CODE: CSUA31204
AND PROJECT MANAGMENT
(PATTERN 2020)

Time: [1Hr. 30 Min]   [Max. Marks: 40]

Instructions to candidates:
1) **Figures to the right indicate full marks.**
2) **Use of scientific calculator is allowed**
3) **Use suitable data wherever required**
4) **All questions are compulsory. Solve any one sub question from Question 3 and any two sub questions each from Questions 4, 5 and 6 respectively.**

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Illustrate the significance of Software Engineering in development web-based e-commerce application.	[2]	1	Analyze
Q2	a) Classify and List UML diagrams according to structural and behavioral types.	[2]	2	Understand
Q3.	a) Analyze the potential challenges and benefits of integrating a microservices architecture into a software design. How does it impact scalability and system maintenance?	[6]	3	Analyze
	b) Analyze the role of JIRA in tracking and managing tasks in an Agile design environment. How does it contribute to transparency and collaboration within the team?	[6]	3	Analyze
Q.4	a) An online learning management system project has to be developed. As a project manager prepare list of responsibilities that he has to handle for successful completion of project	[5]	4	Apply
	b) List and Apply project management life cycle phases for a sample software project of your choice.	[5]	4	Apply
	c) During the development of a software, a key developer on the project unexpectedly resigns. Identify the type of risk, nature, impact of risk and prepare the mitigation plan for it.	[5]	4	Apply

Q.5	a) Calculate the effort required to develop the software product and the nominal development time using basic COCOMO model where size of an organic type software product has been estimated to be 32,000 lines of source code and average salary of software engineers be Rs. 15,000/- per month.	[5]	5	Apply
	b) Calculate Function Point(FP) when complexity adjustment factors are significantly complex product and weighting factors are high for following values: 1. External Inputs (Count=55 and Weighting Factor (WF) High=6), 2. External Output (Count=35 and WF High=7), 3. External Enquired (Count=40 and WF High =6), Internal Logic Files (Count=8 and WF High =15), External Interface Files (Count=5 and WF High=10).	[5]	5	Apply
	c) Apply various steps involved in PERT for online shopping website.	[5]	5	Apply
Q.6)	a) Analyze the potential challenges and benefits associated with implementing a cross-functional team structure for developing an "Enterprise Resource Planning (ERP) System" in a traditionally hierarchical software development organization	[5]	6	Analyze
	b) Illustrate how the use of communication tools and technologies can improve collaboration and communication within a geographically separated and software development teams working in different time zones (Eastern Standard Time (EST) and Indian Standard Time (IST)).	[5]	6	Analyze
	c) Compare and contrast the strengths and weaknesses of high-performance directive and collaborative leadership styles, highlighting situations where one might be more effective than the other.	[5]	6	Analyze