U.S.N. | | | | | | | | | | |

BMS College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

December 2017 Semester End Main Examinations

Course: Software Engineering **Duration: 3 hrs**
Course Code: 16CS5DCSWE **Max Marks: 100**
Date:19.12.2017

Instructions: **Answer FIVE FULL questions, choosing one from each unit.**

UNIT 1

1.	a)	Differentiate between the fundamental types of software products. Justify that the line between them is fading.	05
	b)	For each of the clauses in ACM/IEEE Code of Ethics, suggest an appropriate example that illustrates that clause.	08
	c)	Develop a set of use cases that could serve as a basis for understanding the requirements for an ATM system.(write your assumptions clearly)	07

UNIT 2

2.	a)	Look carefully at how messages and mailboxes are represented in the email system that you use. Model the object classes that might be used in the system implementation to represent a mailbox and an e-mail message.	06
	b)	With a neat diagram, explain the State machine model of a simple microwave oven.	07
	c)	Identify an approach that supports incremental development of systems Explain its pros and cons.	07

UNIT 3

3.	a)	State the significance of W^5HH principle.	07
	b)	An organizations average productivity is 5 FP/pm. The average labor rate is \$5,600 per month. If a proposed project has a count total of 320 and the Value Adjustment factor (VAF) is 52. Calculate. i. Cost per Functional Point (FP). ii. Overall project cost iii. Estimated effort in person-months	07
	c)	Discuss the automated estimation technique for software projects.	06

OR

4.	a)	Explain the LOC based and FP based estimation in detail. .	10
	b)	Discuss in detail, how to define task set for software projects.	10

UNIT 4

5.	a)	Explain how the principles underlying agile methods lead to the accelerated development and deployment of software.	07
	b)	Extreme programming expresses user requirements as stories, with each story written on a card. Discuss the advantages and disadvantages of this approach to requirements description.	06
	c)	Discuss the differences between verification and validation. and explain why validation is particularly a difficult process.	07

OR

6.	a)	Suggest four reasons why the productivity rate of programmers working as a pair might be more than half that of two programmers working individually.	05
	b)	It has been suggested that one of the problems of having a user closely involved with a software development team is that they 'go native'. That is, they adopt the outlook of the development team and lose sight of the needs of their user colleagues. Suggest three ways how you might avoid this problem and discuss the advantages and disadvantages of each approach.	05
	c)	Discuss the objective of the Clean room approach to software development. Explain with a neat diagram the five key strategies this approach is based on.	10

UNIT 5

7.	a)	Explain the principles of agile methods.	06
	b)	Develop a sequence diagram showing the interactions involved when a student registers for a course in an university. Courses may have limited enrolment, so the registration process must include checks for availability of seats. Assume that the student accesses an electronic course catalog to find out about available courses.	06
	c)	Giving reasons for your answer based on the type of system being developed, suggest the most appropriate generic software process model that might be used as a basis for managing the development of the following systems: • A system to control anti-lock braking in a car • A virtual reality system to support software maintenance • A university accounting system that replaces an existing system • An interactive travel planning system that helps users plan journeys with the lowest environmental impact	08

****