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RV COLLEGE OF ENGINEERING®

(An Autonomous Institution affiliated to VTU)

V Semester B. E. Examinations Jan/Feb-21

Computer Science and Engineering

SOFTWARE ENGINEERING

Time: 03 Hours ***Maximum Marks: 100***

Instructions to candidates:

1. Answer all questions from Part A. Part A questions should be answered in first three pages of the answer book only.
2. Answer FIVE full questions from Part B. In Part B question number 2, 7 and 8 are compulsory. Answer any one full question from 3 and 4 & one full question from 5 and 6

PART-A

1	1.1	What are the essential attributes of a good software?	01
	1.2	What are the key challenges faced in software engineering?	01
	1.3	What are the challenges in software maintenance?	01
	1.4	What are the problems that can arise when requirements are written in natural language?	01
	1.5	Product requirements, organizational requirements and external requirements are said to be what type of requirements?	01
	1.6	What are the three principal types of critical systems?	01
	1.7	Mention the users who use the requirements to understand what system is to be developed?	01
	1.8	_____ is an observational technique that can be used to understand social and organizational requirements.	01
	1.9	List the fundamental characteristics of rapid software development.	01
	1.10	List the different types of software maintenance?	01
	1.11	What are the advantages of explicitly designing and documenting software architecture?	01
	1.12	What are the disadvantages of shared repository?	01
	1.13	List the various types of interface errors?	01
	1.14	List the dimensions of dependability in critical systems?	01
	1.15	What are the different types of productive measured?	01
	1.16	What are the factors influencing the group working?	01
	1.17	Sprint meeting schedule is the responsibility of _____.	01
	1.18	_____ is the metric which provide a quantitative measure of the logical complexity of a program.	01
	1.19	_____ Processor are intended to establish the existence of defects in a software system.	01
	1.20	_____ relies on static techniques for a program verification and statistical testing for a system reliability certification.	01

PART-B

2	a	Explain briefly the requirements engineering process with a neat block diagram.	04
	b	Explain with a neat block diagram the component based software engineering model.	04
	c	What are nonfunctional requirements? Mention their types. What are the metrics used to specify the nonfunctional requirements?	04
	d	Give the sequence diagram to perform the withdrawal operation in a ATM bank system.	04
3	a	Explain in detail the different approaches for software project estimation.	05
	b	Describe the various activities in the risk management process.	05
	c	Explain with a neat block diagram the COCOMO-II Model.	06
		OR	
4	a	List and describe the factors affecting i. Software Pricing ii. Software Engineering Productivity	06
	b	What is software project planning? Discuss the objectives of software project planning?	05
	c	Explain the people capability maturity model.	05
5	a	Discuss the following modular decomposition styles. i. Object oriented decomposition ii. Function oriented pipelining	06
	b	Briefly explain the different steps in object oriented design process.	06
	c	Write the state transition diagram for weather station operation.	04
		OR	
6	a	Interpret the following control styles i. Centralized control ii. Event driven control	06
	b	Explain some of the good programming practices which make code easier to read as well as avoid some of the errors.	04
	c	Explain the following processes that developer uses for incrementally developing code. i. An incremental coding process ii. Test driven development iii. Pair programming	06
7	a	With a neat block diagram explain the clean room software development process and its five key strategies.	06
	b	Explain the debugging process with a neat block diagram.	04
	c	What are the different approaches that can be used to design the test cases? Explain each one briefly.	06
8	a	Briefly explain the principle of agile methods.	06
	b	Explain with a neat block diagram the extreme programming release cycle. List the various extreme programming practices.	06
	c	Explain the process of software prototyping with a neat block diagram.	04