

CHAROTAR UNIVERSITY OF SCIENCE & TECHNOLOGY

Forth Semester of B. Tech. Examination (CE)

May-2017

CE220/CE220.01 Software Engineering (S.E.)

Date: 29.05.2017, Monday Time: 10:00 a.m. To 01:00 p.m.

Maximum Marks: 70

Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Indicate clearly, the option(s) you attempt along with its respective question no.
5. Figures to the right indicate marks.

SECTION-I

Q-1 Answer the following questions.

1. In software development organization, whose responsibility is it to ensure that the products are of high quality? Explain the major tasks which are required to be performed to meet these responsibilities. 4
2. You have been appointed as a Project Manager within an Information Systems Organization. Your job is to build an application that is quite similar to others your team has built, although this one is larger and more complex. Requirements have been thoroughly documented by the customer. Which software process model would you choose and why? 3
3. Which are the major phases of the Software Development Life Cycle (SDLC)? Specify the percentage of efforts required in each phase. Which phase requires the maximum (highest) effort? Why? 4

Q-2

- [A] Which are the activities performed by Quality Assurance (QA) Department? Briefly Explain. 4
- [B] Distinguish between a Software Product and a Software Process. What do you mean by Software Process Model? Why we need it? Name at least four process models that are used to develop large Software Systems. 4

OR

- [B] Name the Risk Based Software Development Process Model. What are its advantages and disadvantages? In which situations one can use Agile Process Model? Justify your answer. 4
- [C] Describe the difference between Verification and Validation (V & V). Who should perform the validation tests-the software developer or the software user? Justify the answer. 4

OR

- [C] What is a Risk? Which are the types of Risk? What are the Risk Management activities? 4

Q-3

- [A] What is Software Requirement Specification (SRS)? Why is it so important? Mention the qualities which are required for ideal SRS. 4
- [B] What is analysis about? What is design about? How to transform analysis into design? Which are the principles of analysis and design? 4

OR

- [B] What do you mean by TQM? Explain key elements of TQM. 4

- [C] What is the role of UML in framing the architecture of the software? 4
Briefly explain the general activities in performing Object Oriented Analysis (OOA) in UML. Which are 3 design and implantation models offered by UML? Define each of them.

SECTION-II

Q-4

1. Define Reverse Engineering and Re-Engineering. Differentiate 4
between Reverse Engineering and Re-Engineering.
2. Explain: Why high quality software process should lead to high 3
quality software products.
3. What is the content of the design document? Explain the cohesion and 4
coupling concepts in the context of the software design.

Q-5

- [A] What is Function Point Analysis? Compute the FP value for a project with 4
the following information domain.

No. of user I/P : 32

No. of user O/P : 60

No. of user enquiries : 24

No. of files : 08

No. of External I/F : 02

- [B] To judge the feasibility of a project, a proposal must pass all the feasibility 4
tests otherwise it is not a feasible project. What are those tests? Explain
each of them in brief.

- [C] What is FTR (Formal Technical Review)? List out the objectives of it? 4
Describe design walk through and code walk through. Explain critical
design review.

OR

Q-5

- [A] Is it possible to test the software exhaustively? Can anyone guarantee that 4
the product delivered is 100% error free even after thorough testing?
Justify your answer.
- [B] What is the need of quality certification(s)? Describe the process and 4
requirements of ISO 900X certification. What can you make out as a newly
approached client, if the approaching software company is currently at
CMM Level 4 and has an ISO 9001 certification.
- [C] What do you mean by Version Control? What do you mean by Change 4
Control? What is the relationship between Software Configuration
Management (SCM) and Software Maintenance? Explain in brief.

Q-6

- [A] Explain the concept of Component Based Software Engineering (CBSE). 4
What are its essentials? What are its design principles?
- [B] What is the significance and importance of CMM certification for any 4
software organization? How is CMM different from ISO? Is it possible for
an organization to achieve a higher level of CMM without achieving a
lower one? Justify.

OR

- [B] Is it ethical for a software engineer to agree to deliver a software system with known faults to a customer? Does it make any difference if the customer is told of the existence of these faults in advance? Would it be reasonable to make claims about the reliability of the software in such circumstances? 4
- [C] What is the meaning of Software Maintenance? Which are the different types of Maintenance Software Product might need? Why is such Maintenance required? 4

OR

- [C] The library management system should be able to handle requests for membership, issue and return of books as well as handle purchase of books from the suppliers. Draw a context level Data Flow Diagram (DFD) and level-0 Data Flow Diagram for a Library Management System. 4