

CS605 Final Term Preparation

Past papers 1- 4 Solved

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Masters

Write down the formula for calculating Mean time between failure (MTBF).

page 116

Answer ([Please click here to Add Answer](#))

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Mean time between failure (MTBF). MTBF is calculated as:
$$MTBF = MTTF + MTTR$$

Where MTTF is the Mean Time To Failure and MTTR is the Mean Time Required To Repair.

Made by: Waqar Siddhu

"A student claims that requirement errors are the most common type of software development errors and are most costly to fix". Do you agree with his/her statement?

Requirement errors are the most common type of software development errors and the most costly to fix. It may also be recalled that requirement errors are listed as one of the roots causes of software project failure. (page 127)

Answer ([Please click here to Add Answer](#))

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Yes, Agree. Project success depends on good requirement management. It may be recalled that requirement errors are the most common type of software development errors and the most costly to fix. It may also be recalled that requirement errors are listed as one of the roots causes of software project failure. (page 127)

Made by: Waqar Siddhu

"Message Chains can be a bad smell". How ?

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Answer ([Please click here to Add Answer](#))

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Message Chains: A client asks an object for another object and then asks that object for another object etc. Bad because client depends on the structure of the navigation

Made by: Waqar Siddhu

“Normally Build and Fix model is not suitable for large and complex software”, Why?

mid term

Answer ([Please click here to Add Answer](#))

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What would you understand by the term Software Reliability?

page 115

Answer ([Please click here to Add Answer](#))

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Software reliability is another very important quality factor and is defined as probability of failure free operation of a computer program in a specified environment for a specified time.

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Normally what type of information is included in Configuration Status Reporting (CSR)?

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Answer ([Please click here to Add Answer](#))

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Configuration Status Reporting (CSR) is also known as status account the following items:

- What happened?
- Who did it?
- When did it happen?

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Do you think that a comment can be a "bad smell"? Provide reason for your answer.

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Answer ([Please click here to Add Answer](#))

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Comments (!)

- Comments are sometimes used to hide bad code
- “...comments often are used as a deodorant” (!)

Yes, Comment are also bad smells in code

Made by: Waqar Siddhu

Does software quality depend only on the source code? Comment on it.

Answer ([Please click here to Add Answer](#))

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analyzing the source code already during development is essential for the quality of the software. In addition to security, this care also ensures a valuable gain of time: with a good tool, there is a gain in the work of correcting vulnerabilities in the source code.

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List the steps of software reengineering process model.

Note: just list the steps, do not provide internal details.

page 138

Answer ([Please click here to Add Answer](#))

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- 1.Inventory analysis
2. Document restructuring
- 3.Reverse engineering
4. Program Restructuring
5. Code restructuring
6. Data restructuring
7. Forward engineering

Made by: Waqar Siddhu

Do you think that the use of statistical control techniques like the one given by Walter Shewart is valid (from accuracy point of view) in domain like software engineering? give your comments.

MID TERM LEC 15

Answer ([Please click here to Add Answer](#))

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Made by: Waqar Siddhu

List some (at least three) of the artifacts related to software testing, that can be treated as software configuration item (SCI).

Answer ([Please click here to Add Answer](#))

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Typical SCIs include requirement specifications, design specification, source code, test cases and recorded results, user guides and installation manuals, executable programs, and standards and procedures

Made by: Waqar Siddhu

Differentiate between staged and continuous representation of CCMI models.

Note: you can provide your answer in tabular format.

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Answer ([Please click here to Add Answer](#))

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Staged Representation

Provides a proven sequence of improvements, each serving as a foundation for the next.

- Permits comparisons across and among organizations by the use of maturity levels.

Provides an easy migration from the SW-CMM to CMMI.

- Provides a single rating that summarizes appraisal results and allows comparisons among organizations

Continuous Representation

Continuous representation allows you to select the order of improvement that best meets your organization's business objectives and mitigates your organization's areas of risk. It enables comparisons across and among organizations on a process-area-by-process-area basis and provides an easy migration from EIA 731 (and other models with a continuous representation) to CMMI.

Made by: Waqar Siddhu

In context of software configuration management (SCM), SCI stands for?

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Answer ([Please click here to Add Answer](#))



Software configuration Item (SCI)

Made by: Waqar Siddhu

Is it effective to assign a release number to each and every release?

VuAnswers.com

Answer ([Please click here](#) to Add Answer)



Yes it is effective

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In context of code refactoring, what is meant by the term “Bad smell”.

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Answer ([Please click here to Add Answer](#))



The philosophy is simple: ***“if it stinks, change it”***.

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List at least two factors that you will consider when selecting the software development life cycle model.

requirement, architecture, design, code

page 109

Answer (Please [click here](#) to Add Answer)

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Size of project
stability of project
location of project team

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size of project
steaablty of project
location of project team

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“Software configuration management is a design activity”. Do you agree or not? Provide at least one reason to support your answer.

Answer ([Please click here to Add Answer](#))

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No ,because As defined by CMM, the purpose of SCM is to establish and maintain the integrity or software products through the project' s life cycle.

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“Software configuration management is a design activity”. Do you agree or not? Provide at least one reason to support your answer.

Answer ([Please click here to Add Answer](#))

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As defined by CMM, the purpose of SCM is to establish and maintain the integrity of software products through the project's life cycle.

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Mention the situations when you think that it is appropriate to scrap a legacy system completely.

When the cost of maintenance is high and the organisation has decided to invest in new hardware

Answer (Please [click here](#) to Add Answer)

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~~As defined by SCM, the purpose of SCM is to establish and maintain the integrity of software products through the project's life cycle.~~

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Write down characteristics (at least Two) of the processes at CMM level-1.

Answer ([Please click here to Add Answer](#))

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It is characteristic of processes at this level that they are (typically) undocumented and in a state of dynamic change, tending to be driven in an *ad hoc*, uncontrolled and reactive manner by users or events. This provides a chaotic or unstable environment for the processes.

Ad-hoc:

[10:40:17 PM] GulZaib Amjed: 1- no processes

[10:40:21 PM] GulZaib Amjed: 1- no model

[10:40:35 PM] GulZaib Amjed: 3-incomplete design

[10:40:46 PM] GulZaib Amjed: 4-incomplete requirement

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Write down characteristics (at least Two) of the processes at CMM level-1.

Answer ([Please click here](#) to Add Answer)

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Ad-hoc:

- no processes
- no model
- incomplete design
- [4-incomplete requirement
- known as initial level

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Suppose in an application, an ILF or EIF is used in four processes, then how much we will count for that ILF or EIF? Also provide reason.

Answer ([Please click here to Add Answer](#))

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There are two types of rules:

- Identification rules
- Complexity and contribution rules

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Suppose in an application, an ILF or EIF is used in four processes, then how much we will count for that ILF or EIF? Also provide reason.

Answer ([Please click here to Add Answer](#))

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The ILF and EIF counting procedures include the following two activities:

- 1) Identify the ILFs and EIFs.
- 2) Determine the ILF or EIF complexity and their contribution to the unadjusted function point count. ILF and EIF counting rules are used for each activity.

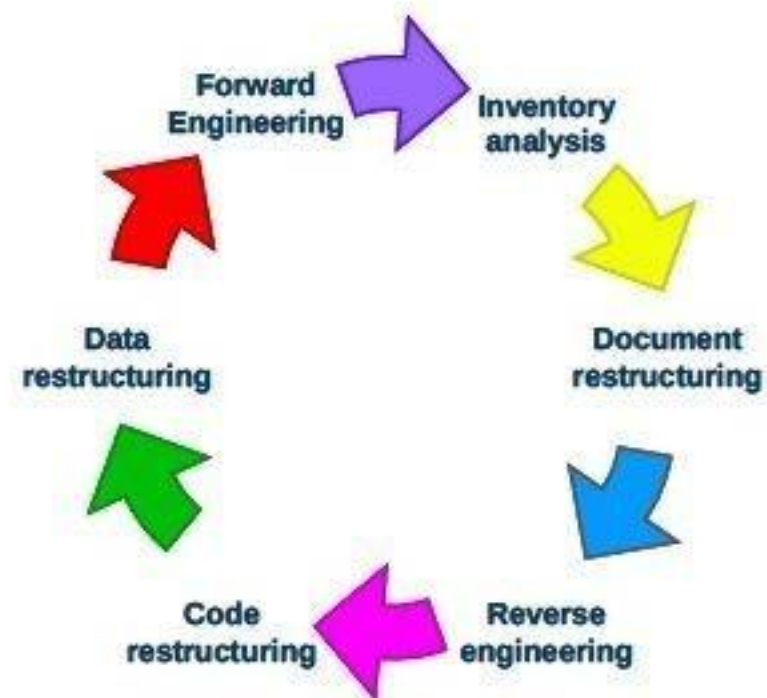
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List the steps of software reengineering process model.

Note: just list the steps, do not provide internal details.

Answer ([Please click here](#) to Add Answer)

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List some (at least three) of the artifacts related to software testing, that can be treated as software configuration item (SCI).

Answer ([Please click here](#) to Add Answer)

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Why Long method is considered to be a bad smell in code? Explain briefly.

Answer ([Please click here to Add Answer](#))

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We have already seen example of duplicate code. We now look at another simple example of long method. Although, in this case, the code is not really long, it however demonstrates how longer segments of code can be broken into smaller and more manageable (may be more reusable as well) code segments.

```
int long_function(){  
....  
}  
int part_10{  
...}  
int part_20{  
...}  
int 3rd_part{  
....
```

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Normally "Cost" and "Efficiency" conflict with each other, where as "Efficiency" and "user friendly interface" conflict with each other. Now, for an air traffic control system, which requirement will be a major concern for you and why?

Answer ([Please click here to Add Answer](#))

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IN my POV:

User friendly , because in air traffic control system if the system is user friendly it can be manage or handle easily.

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During the Formal Technical Review (FTR) meeting, the recorder notes all the issues. They are summarized at the end and a review issue list is prepared. List down some of the points that must be included in this list.

Answer ([Please click here to Add Answer](#))

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FTRs include walkthroughs, inspections, and other small group technical assessments of software

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Write down some guidelines to make a review meeting successful.

Answer ([Please click here to Add Answer](#))

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FTRs are usually conducted in a meeting that is successful only if it is properly planned, controlled, and attended. The review meeting consists of 3-5 people and advanced preparation is required. It is important that this preparation should not require more than 2 hours of work per person. It should focus on specific (and small) part of the overall software

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We need to tag requirements with certain attributes in order to manage them in an orderly fashion. Name at least two (2) attributes.

Answer ([Please click here to Add Answer](#))

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1. Requirement ID
2. Creation date
3. Created by
4. Last modified on
5. Last modified by
6. Version number
7. Status
8. Origin
9. Subsystem

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During program restructuring, we modify source code and data. What can be the potential benefit of this modification?

Answer ([Please click here to Add Answer](#))

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Program is restructured after the reverse engineering phase. In this case we modify source code and data in order to make it amenable to future changes. This includes code as well as data restructuring.

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A student claims that “quality assurance is an umbrella activity”, Do you agree or not? State with reasons.

Answer ([Please click here to Add Answer](#))

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In fact, SQA is an umbrella activity that is applied throughout the software process. Umbrella activities that are used to smoothly and successfully perform the construction activities e.g. project planning, software quality assurance etc

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List at-least two problems that can be faced by a software development organization if they are not having proper SCM in place?

Answer ([Please click here to Add Answer](#))

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“Which configuration does this customer have?”

- “Did we deliver a consistent configuration?”
- “Did the customer modify the code?”
- “The customer skipped the previous two releases. What happens if we send him the new one?”
- Shipped the wrong version to the client.

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List at least two factors that make it difficult to develop a traceable requirement specification (SRS).

Note: try to provide precise, to the point answer, avoid unnecessary details.

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Answer ([Please click here to Add Answer](#))

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For a certain application

Suppose

P1 = current annual maintenance cost for an application = 200000

P2 = current annual operation cost for an application = 50000

Answer ([Please click here to Add Answer](#))

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P2 = current annual operation cost for an application = 50000
P3 = current annual business value of an application = 400000
L = expected life of the system = 4 years

Calculate maintenance cost of the system.

Answer ([Please click here to Add Answer](#))

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maintenance is calculated as:

$$C_{\text{maintenance}} = [P3 - (P1 + P2)] \times L$$

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For a project consider the following data:

	Probability	Cost to correct
Technical Risk	50%	1000\$
Business Risk	30%	2000\$
Support	10%	500\$

Answer ([Please click here to Add Answer](#))

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Business Risk	30%	2000\$
Support	10%	500\$

Calculate the Risk Exposure for all the risks mentioned above and identify the top two (2) risks with respect to Risk Exposure.

Answer ([Please click here to Add Answer](#))

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RE = Probability of the risk x Cost

This risk exposure is then used to identify the top risks and mitigation strategies.

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