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Question Paper Code : 80430

M.Sc. DEGREE EXAMINATION, AUGUST 2015.

First Semester

Software Engineering

DSE 112 — SOFTWARE ENGINEERING

(Regulations 2007/2009)

(Common to M.Sc. Information Technology/M.Sc. Computer Science)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Give the IEEE definition of software engineering.
2. Compare product and process.
3. What is a non functional requirement? Give an example.
4. Why software metrics are important?
5. What is software project planning?
6. What is SQA?
7. What is abstraction in design concept?
8. What is low level design?
9. Write a note on coding styles.
10. What is static analysis?

PART B — (5 × 16 = 80 marks)

11. (a) Discuss spiral model for software life cycle and discuss how it is suited for building large software systems. (16)

Or

- (b) Discuss in detail about software configuration management. (16)

12. (a) What is Software Requirement Specification (SRS)? Explain in detail about the template prescribed by IEEE for SRS documentation. (16)

Or

- (b) What is analysis model and discuss how of analysis model maps to design model with neat sketch. (16)

13. (a) What is meant by cost schedule milestone chart? Discuss the importance in project monitoring. Discuss the advantages of it over other project monitoring plans. (16)

Or

- (b) Discuss the importance of software quality assurance and explain in detail about various software quality assurance methods. (16)

14. (a) Explain in detail about structured design and object oriented design considering a typical application. (16)

Or

- (b) Discuss various types of coupling and cohesion with illustrative example. (16)

15. (a) What is code review? Explain its importance in the process of software development. (16)

Or

- (b) Explain in detail about functional testing and structural testing. (16)

Reg. No. :

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Question Paper Code : 22455

M.Sc. DEGREE EXAMINATION, FEBRUARY/MARCH 2015.

First Semester
Computer Science
DCS 7104 — SOFTWARE ENGINEERING
(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the characteristics of the software?
2. Define Agility in software.
3. Why Requirement Analysis is preformed for software?
4. Define Metric.
5. Distinguish between Cohesion and Coupling.
6. Who is responsible for software documentation?
7. When verification and validation testing are performed in SDLC?
8. What is static analysis?
9. How quality measure is taken care at SRS Phase.
10. What are defect prevention measures?

PART B — (5 × 16 = 80 marks)

11. (a) (i) List all available software models. (6)
(ii) Explain the advantages of Prototype model over water fall model with neat diagrams. (10)

Or

- (b) (i) Why fourth generation techniques are more appropriate for recent projects? Discuss in detail.
(ii) Select an appropriate domain for Agile method and explain in detail.

12. (a) Discuss about requirement collections for Government Staff Salary Processing system. (16)

Or

- (b) (i) How to validate requirements? Explain.
(ii) Who is responsible to collect requirement? What are metrics parameters?
13. (a) In what way distributed system design vary from other design? Discuss with appropriate example for both the design. (16)

Or

- (b) (i) What is Modularity? (3)
(ii) How staff and student can be related for course allocation and mark processing system? (13)
14. (a) What is flow path testing? With flow graph evaluate effort based on regions and numbers of paths. (16)

Or

- (b) In what way functional testing varies from structural testing? Explain.
15. (a) (i) What are the key components of Configuration Management?
(ii) Explain the classification of metrics.

Or

- (b) Brief on :
(i) Direct and indirect measure.
(ii) Reliability.
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Reg. No. :

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Question Paper Code : 46454

M.Sc. DEGREE EXAMINATION, AUGUST 2014.

First Semester

(Computer Science)

DCS 7104 — SOFTWARE ENGINEERING

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define prototyping model.
2. What is product engineering process?
3. What are the main error types in requirements?
4. How functional requirements are specified?
5. What is modularity?
6. How a design is verified?
7. Mention some naming conventions.
8. What is information hiding?
9. What is the need for maintenance?
10. Mention some software quality assurance standards.

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the limitations of the waterfall model? (6)
- (ii) How some limitations of WF model are overcome by iterative methods? (10)

Or

- (b) Explain the Extreme Programming approaches in Agile methods. (16)

12. (a) Describe the characteristics of SRS and their Components. (16)

Or

(b) Explain the process of validating the requirements specification. (16)

13. (a) Describe the modularization criteria Coupling, its types and factors affecting it. (16)

Or

(b) Explain the distributed systems design concepts. (16)

14. (a) (i) Explain top down and bottom up programming practice. (8)

(ii) Explain the internal document verification. (8)

Or

(b) (i) How code inception and reviews are conducted? (8)

(ii) Compare functional testing and structural testing. (8)

15. (a) Describe the software configuration management methods. (16)

Or

(b) Classify and explain the metrics for measuring Process and Product attributes. (16)

Reg. No. :

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Question Paper Code : 46430

M.Sc. DEGREE EXAMINATION, AUGUST 2014.

First Semester

(Software Engineering)

DSE 112 – SOFTWARE ENGINEERING

(Common to M.Sc. Information Technology/M.Sc. Computer Science Engineering)

(Regulations 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Mention the different processes of Project Management.
2. Can software tools and development methods solve most or all of the problems pertaining to software engineering?
3. What is a feasibility study and what is its role?
4. Define Use Case. Mention the relationships that can occur between the use cases?
5. How do you define the system release planning?
6. What is software quality?
7. What are the advantages and disadvantages of size measure?
8. What are the testing principles the software engineer must apply while performing the software testing?
9. Mention the role of testing with respect to software quality?
10. When is it appropriate to reuse the software?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Compare the Spiral Model and Prototype Model in software development, focusing on its features and give suitable scenarios of their usage. (8)

- (ii) Describe the various levels of CMMI. (8)

Or

- (b) (i) Draw a system engineering hierarchy diagram and explain the concept. (8)

- (ii) Explain the process model that combines the elements of waterfall and iterative fashion. (8)

12. (a) (i) Why is traceability an important aspect of requirement management? Why context system models are useful for requirements validation? (8)

- (ii) What is requirement engineering? State its process and explain requirements elicitation problem. (8)

Or

- (b) (i) Differentiate functional and non functional requirements and explain. (8)

- (ii) Draw an E-R diagram for university information system. Specify atleast four cardinality and modality relationships. (8)

13. (a) Explain the basic principle involved in project scheduling with neat sketch.

Or

- (b) (i) Explain in detail the Configuration Management in maintenance process. (8)

- (ii) Describe in detail the various phases in Risk Management process. (8)

14. (a) (i) Draw a translating diagram for analysis model into a software design specification. (8)

- (ii) Give a complete template for documentation design specification. (8)

Or

- (b) (i) Which is a measure of interconnection among modules in a program structure? Explain. (8)

- (ii) What is the difference between Level-0 and Level-1 DFD? Draw a Level-0 and Level-1 DFD for safe Home Security System. (8)

15. (a) (i) What are all the formulas for cyclomatic complexity? Calculate cyclomatic complexity for greatest of three numbers. (8)
(ii) How would you derive test cases for the given project? Explain in detail. (8)

Or

- (b) (i) Narrate the path testing procedure in detail with a sample code. (8)
(ii) Explain the different integration testing approaches. (8)
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Reg. No.

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Question Paper Code : 96430

M.Sc. DEGREE EXAMINATION, FEBRUARY/MARCH 2014.

First Semester

Software Engineering

DSE 112 — SOFTWARE ENGINEERING

(Common to M.Sc. Information Technology/M.Sc. Computer Science Engineering)

(Regulations 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Software Engineering.
2. Define the term 'Prototyping'.
3. Why do we go for Requirement Analysis?
4. State the purpose of Software Requirement Specification.
5. Name the two groups of activities in risk management.
6. What is SCI?
7. List the desirable properties of a good software system design.
8. What is meant by 'module coupling'?
9. Write the meaning of the term 'Design Walkthrough'
10. Define the term 'Software Reliability'.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the Software Development Process. (10)
(ii) Bring out the characteristics of Software Processes. (6)

Or

- (b) Describe the activities of SCM process in detail. (16)
12. (a) (i) Explain how software requirements analysis is carried out. (10)
(ii) Write short notes on software specification. (6)

Or

- (b) (i) Explain in detail about problem analysis. (10)
(ii) Explain following metrics: function point and error. (6)
13. (a) (i) Explain project scheduling phase of planning. (8)
(ii) Explain project monitoring plans. (8)

Or

- (b) (i) Explain cocomo model for software cost estimation. (8)
(ii) Write short notes on risk analysis and prioritization. (8)
14. (a) (i) Describe structure design methodology. (8)
(ii) List and explain the design principles. (8)

Or

- (b) (i) Bring out the features of top-down and bottom-up design strategies. (8)
(ii) Explain briefly about module level design concepts. (8)
15. (a) Explain about programming style and internal documentation. (16)

Or

- (b) Explain in detail about software testing process. (16)

Reg. No. :

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Question Paper Code : 86430

M.Sc. DEGREE EXAMINATION, AUGUST 2013.

First Semester

Software Engineering

DSE 112 – SOFTWARE ENGINEERING

(Common to M.Sc. Information Technology / M.Sc. Computer Science Engineering)

(Regulation 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is software engineering, and why is it necessary?
2. Why large software project often fail? Give any two reasons.
3. What is software scope?
4. Distinguish between functional requirement and non functional requirement with an example.
5. What is the purpose of software metrics?
6. What are some project-related cost factors of a software cost estimation model?
7. What are the risk components and drivers?
8. What is the importance of software architecture?
9. Define the term cyclomatic complexity.
10. What do you mean by structural testing?

PART B — (5 × 16 = 80 marks)

11. (a) What do you understand by the term life cycle model of software development? What problems might a software development organization face if it does not follow any life cycle models during development of a large software product? (16)

Or

- (b) (i) What is water fall model? How is it different from other engineering process models? (8)
- (ii) Describe the components of software configuration management process. (8)

12. (a) Explain the major activities carried out during requirements analysis and specification phase. What is the final outcome of the requirements analysis and specification phase? (16)

Or

- (b) (i) Describe the components of requirement document. (8)
(ii) Describe the characteristics of Quality Requirement Specifications. (8)

13. (a) What do you mean by risks in software projects? What are the different types of risks in software projects? How does risk management tackle these risks? What procedure is usually followed? (16)

Or

- (b) (i) Explain the need of planning software projects. What are the broad activities that encompass software project planning? (8)
(ii) What is meant by SQA? Discuss in detail SQA activities. (8)

14. (a) What do you understand by functional independence in the context of software design? How can functional independence in a software design be achieved? (16)

Or

- (b) (i) What is meant by the term coupling in the context of software design? Is it true that in a good design, the modules should have low coupling? Why? (8)
(ii) Describe the various design issues to be considered while designing the software. (8)

15. (a) (i) Explain any one test case design technique with step by step procedure. (8)
(ii) Who will test the software, either developer or an independent test group? Discuss the advantages and disadvantages of them. (8)

Or

- (b) Write short notes on the following:
(i) Coding style. (8)
(ii) Code Review. (8)
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Reg. No. :

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Question Paper Code : 86430

M.Sc. DEGREE EXAMINATION, FEBRUARY/MARCH 2013.

First Semester

DSE 112 – SOFTWARE ENGINEERING

(Common to M.Sc. Information Technology/ M.Sc. Computer Science Engineering/
M.Sc. Software Engineering)

(Regulation 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Compare and contrast software engineering with conventional engineering.
2. Mention characteristics of a software process.
3. “Collection of requirements and analysis plays an important role in development of a quality software”. Comment.
4. Mention the different metrics used to measure goodness of a software.
5. Discuss on fundamental limitations of cost estimation.
6. What do you mean by staffing?
7. List any two desirable properties for system design.
8. Compare and contrast between top down design and bottom up design.
9. Bring out advantages of structured programming.
10. What is functional testing? How it is different from structural testing?

PART B — (5 × 16 = 80 marks)

11. (a) Explain various stages involved in waterfall model along with specification of objectives of each phase. Discuss on the output documentation of the waterfall model and mention its limitations. (16)

Or

(b) (i) What are the two types of metrics employed for software development? Explain. (6)

(ii) It is required to develop a software tool to collect feedback from students on faculty members teaching various courses. Discuss on your overall plan of completion of the project mentioning various metrics that you recommended for the delivery of the software tool.

(10)

12. (a) Thesaurus is a form of a dictionary describing the synonyms of primary words in a particular language. Imagine various activities (functions) involved in maintaining a digital form of a thesaurus. Give an SRS document towards development of such a thesaurus. Explain how your SRS meets the expected properties of a good SRS. (16)

Or

(b) (i) What are the benefits of a good SRS? Explain. (6)

(ii) Imagine various entities and activities involved in a restaurant. Give a context diagram and DFD for a restaurant system of your choice. (10)

13. (a) (i) List and explain the major risks in a software project. (8)

(ii) Explain different structures available to setup a team. Bring out their pros and cons. (8)

Or

(b) What is meant by cost schedule mile stone chart? Bring out its importance in project monitoring. Discuss on its advantages over other plans of project monitoring. (16)

14. (a) Discuss on various types of coupling and cohesion with an illustrative example. (16)

Or

(b) (i) What is data flow graph? Illustrate with an example its ability in representing a software system. (8)

(ii) What are the different metrics used to verify the design of a software? (8)

15. (a) (i) What is information hiding? What are its advantages? Explain. (8)
(ii) What do you mean by symbolic execution? Write pseudo code for
binary search. (8)

Or

- (b) (i) What is debugging? How does it differ from testing? Explain. (8)
(ii) What is meant by reliability of software? How it is different from
availability of a software? (8)
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Reg. No. :

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Question Paper Code : 78530

M.Sc. DEGREE EXAMINATION, AUGUST 2012.

First Semester

Software Engineering

DSE 112 – SOFTWARE ENGINEERING

(Common to M.Sc. Information Technology/M.Sc. Computer Science Engineering/
M.Sc. Software Engineering)

(Regulation 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is a software process? List out the generic framework activities that are present in every software process?
2. State the reason why software requirements elicitation is difficult.
3. Distinguish between user requirement specification and software requirement specification with an example.
4. What is a software metrics? How is it differ from software measurement?
5. What is Software Design?
6. What is Reengineering and Reverse engineering? Give an example.
7. Differentiate verification and validation with an example.
8. What are the problems that are encountered when top-down integration is chosen?
9. What is Unit Testing? Why is a highly coupled module difficult to Unit test?
10. Differentiate White-box testing and Black-box testing.

PART B — (5 × 16 = 80 marks)

11. (a) Explain the SDLC of Waterfall model and Spiral model. Also discuss the specific advantages and disadvantages of these two process models with an example. (16)

Or

- (b) (i) Explain the concept of Project Management Process. (8)
(ii) Describe the Components of Configuration Management. (8)

12. (a) (i) What is SRS? Explain the components of SRS. (8)
(ii) Describe the various issues in functional and Non-functional requirements with an example. (8)

Or

- (b) An XYZ organization uses the following method to compute Gross Pay for their employees :

Every employee may either be on a regular pay-scale or on a consolidated salary. For all other employees, gross pay is a combination of the BASIC, DA, HRA and CCA.

DA depends on Basic. If Basic is below Rs. 8000 per month, DA is Rs. 4000 per month else it is Rs. 6000. Towards HRA, the employee is paid up to a maximum of 30 % of his or her basic. For the rent paid by the employee, 10 % of the basic is first deducted. If the remaining amount is less than 30 % of the Basic of the employee, the full remaining is paid as HRA, otherwise 30% of the Basic is paid as HRA, CCA is paid only for employee posted in Delhi or Bombay and is Rs. 1000 per month for Basic less than Rs. 8000 per month and Rs. 1600 per month other wise. Represents the above calculation using the following tools.

- (i) Decision Tree. (4)
(ii) Decision Table. (4)
(iii) Structured English. (4)
(iv) Nassi Shneidermann Diagram. (4)
13. (a) (i) Explain the COCOMO Cost Estimation techniques with an example. (8)
(ii) Discuss the function point estimation method with an example. (8)

Or

- (b) Write short notes on :
(i) Software quality assurance. (4)
(ii) Quality standards. (4)
(iii) Risk Identification. (4)
(iv) Risk Estimation. (4)

14. (a) (i) "Modularity is very important design principles of System development" What are the different steps to be followed to maintain the Modularity of system? (8)
(ii) Explain the various types of cohesion and coupling with an example. (8)

Or

- (b) Discuss the various steps involved in transform mapping and transaction mapping. (16)

15. (a) (i) Discuss the importance of Top-down and Bottom up approach with an example. (8)
- (ii) Explain the difference between Functional Testing versus Structural Testing with an example. (8)

Or

(b) Write short notes on the following :

- (i) Cyclomatic complexity. (4)
- (ii) Loop testing. (4)
- (iii) Basis path testing. (4)
- (iv) Acceptance testing. (4)
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Reg. No. :

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Question Paper Code : 88530

M.Sc. DEGREE EXAMINATION, FEBRUARY 2012.

First Semester

Software Engineering

DSE 112 — SOFTWARE ENGINEERING

(Common to M.Sc. Information Technology/Computer Science)

(Regulation 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List out the characteristics of a software process.
2. Define SCM and write the three major components of SCM.
3. Bring out the importance's of an SRS document in an software organization.
4. What do you mean by prototyping? Give an example.
5. Write the types of data binding.
6. Differentiate between cost and performance risk.
7. If a module has logical cohesion, what kind of coupling is this module likely to have with others?
8. What do you mean by stepwise refinement?
9. Define Topological Complexity.
10. At which stage reliability estimation has to be done?

PART B — (5 × 16 = 80 marks)

11. (a) Compare waterfall and prototyping model and bring out the limitations of Waterfall model that you can overcome in prototyping model. (16)

Or

- (b) (i) What are software metrics? What is the role of metrics in project and process Management? (8)
- (ii) Why CMM is important of a software process? Bring out the five levels of CMM. (8)
12. (a) (a) Draw the DFD, Context Diagram and Object model for a library management system. (16)

Or

- (b) (i) Draw an ER diagram for a company database representing the relationship, cardinality, association and participation constraints. (8)
- (ii) Design a SRS for an Airline reservation system. (8)
13. (a) Explain COCOMO model. Use it to estimate the effort required to build a software for a simple ATM that produces 12 screens, 10 reports and will require approximately 80 software components. Assume average complexity and average developer maturity. (16)

Or

- (b) Write a detailed note on Risk Management activities. (16)
14. (a) Explain the difference between coupling and cohesion and justify how it helps in a good modular design with appropriate examples. (16)

Or

- (b) (i) Compute the cyclometric complexity to find the largest of two numbers. Depict with a flow graph. (8)
- (ii) Write about the types of metrics used for a structured design. (8)
15. (a) (i) Bring out the rules that has to be followed for writing a good code. (8)
- (ii) Write a detailed note on program verification methods used for a good coding. (8)

Or

- (b) (i) Write the benefits of code inspection and reviews. (8)
- (ii) Discuss about the types of metrics used for coding practice. (8)

Reg. No. :

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Question Paper Code : 98530

M.Sc. DEGREE EXAMINATION, AUGUST 2011.

First Semester

Software Engineering

DSE 112 — SOFTWARE ENGINEERING

(Common to M.Sc. Computer Science and Information Technology)

(Regulation 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List the characteristics of a software process.
2. What is software base line?
3. What are requirement metrics? Name the two popular requirement metrics.
4. Mention the significance of using Prototyping in requirements analysis.
5. Draw the Rayleigh curve for manpower ramp-up.
6. Give four examples of configuration Items.
7. What are the features of structured design?
8. What is graph impurity? What is its value for a pure tree?
9. What is code reading?
10. What is structured programming?

PART B — (5 × 16 = 80 marks)

11. (a) (i) What are the Primary challenges of software engineering? Explain each of them. (10)
(ii) State the KPAs required for each of the maturity levels of CMM. (6)

Or

- (b) (i) Explain the Time Boxing Model in detail. (8)
(ii) Briefly explain the various aspects of software configuration management. (8)

12. (a) (i) Explain the Function Point method for Measuring the Software Size. (10)
(ii) State and briefly explain the characteristics of a good SRS. (6)

Or

- (b) (i) Explain the use of DFD in analyzing the user requirements with an example. (10)
(ii) List the important items of a Requirement Checklist. (6)
13. (a) (i) In what phases of the software development the Defects are injected? In what phases they are removed? Explain. (8)
(ii) Explain the process of Risk Assessment. (8)

Or

- (b) (i) Describe the features of COCOMO estimation model with an example. (10)
(ii) Explain the importance of Project Monitoring and Tracking. (6)
14. (a) (i) State and briefly explain the various design principles. (8)
(ii) Explain the use of Structured Charts with an example. (8)

Or

- (b) (i) Explain the significance of Cohesion and Coupling in designing software. (8)
(ii) What are Design Metrics? Explain any two of them. (8)
15. (a) (i) Explain the importance of Static Analysis. (8)
(ii) What do you understand by "information hiding"? Explain in detail. (8)

Or

- (b) Write short notes on the following :
(i) Functional versus Structural testing (8)
(ii) Reliability Estimation. (8)
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Reg. No. :

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Question Paper Code : 85937

M.Sc. DEGREE EXAMINATION, FEBRUARY 2011.

First Semester

Software Engineering

DSE 112 — SOFTWARE ENGINEERING

(Common to M.Sc. Computer Science and Information Technology)

(Regulation 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define Software Engineering.
2. Mention stages in software development process.
3. What are the characteristics of a good SRS?
4. What do you mean by problem analysis?
5. Mention various parameters to be considered for cost estimation.
6. What is risk management?
7. Compare and contrast coupling versus cohesion.
8. What are the differences between verification and validation?
9. What are the control structures used in structured programming?
10. What is structural testing?

PART B — (5 × 16 = 80 marks)

11. (a) "Software engineering is unlike other engineering discipline works with a logical entity " justify with an illustrative example and parameters.

Or

- (b) Explain various stages involved in a project management process.

12. (a) Design an SRS for the following problem (you can assume your own information to make it consistent and unambiguous).

"It is required to design and develop a good dynamic thesaurus for english language supporting insertion and deletion of primary words and secondary (synonyms) words in addition to searching for synonyms".

Or

- (b) (i) What do you mean by software requirement analysis and specifications? (10)
- (ii) What are the challenges in it? (3)
- (iii) Explain with an illustrative example. (3)
13. (a) Explain COCOMO model with a neat diagram give the COCOMO model for your own example software project.

Or

- (b) What do you mean by quality assurance? What are the various components in it. Explain.
14. (a) Give the various software design tools. Explain any three of them along with the pros and cons of each.

Or

- (b) Bring out the importance of data design and procedural design. Explain the method of step-wise refinement for procedural design.
15. (a) What do you mean by information hiding? What are its benefits in improving quality of a software? Discuss.

Or

- (b) (i) What is reliability of software? How is it different from availability of software? (8)
- (ii) Explain a simple model for estimating the reliability of a software system. (8)

Reg. No. :

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Question Paper Code : GG 3543

M.Sc. DEGREE EXAMINATION, AUGUST 2010.

First Semester

Software Engineering

DSE 112 — SOFTWARE ENGINEERING

(Common to M.Sc. Computer Science and Information Technology)

(Regulation 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. State the basic objectives of Software Engineering.
2. What are Software metrics? Why is it important?
3. List the characteristics of a system requirement specification.
4. Define data dictionary.
5. What are milestones?
6. Distinguish between verification and validation.
7. Distinguish between data design and function oriented design.
8. What is design walkthrough?
9. State the major issues for code inspection and reviews.
10. Define error, fault and failure.

PART B — (5 × 16 = 80 marks)

11. (a) Explain about various software development process models and compare them.

Or

- (b) Discuss about the problems of Software Engineering and list out the characteristics of a software process.

12. (a) Elaborate on the role of specification languages in constructing the software requirement specification.

Or

- (b) Explain how the structured analysis model and object oriented model are helpful in problem analysis.

13. (a) (i) Discuss how to estimate the cost and staff requirements for a project. (8)

- (ii) Why is risk management essential in a software development process? List out the major risk and recovery process. (8)

Or

- (b) Explain the techniques to monitor a project and what are the quality assurance plans required to analyse the project.

14. (a) Describe about modularity in detail and explain its role in structured design.

Or

- (b) Elaborate on various techniques used in detailed design.

15. (a) Discuss about the static and dynamic methods of program verification.

Or

- (b) What is the goal of testing? Explain about the functional and structural testing in detail.

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Question Paper Code : YY 3553

M.Sc. DEGREE EXAMINATION, FEBRUARY 2010.

First Semester

Software Engineering

DSE 112 — SOFTWARE ENGINEERING

(Common to M.Sc. Computer Science and Information Technology)

(Regulation 2007/2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write different stages of software development cycle.
2. Distinguish between software and program.
3. Define software engineering.
4. Distinguish between DFD and flowchart.
5. What are the differences between cohesion and coupling?
6. Explain data design.
7. What is testing? How is it different from debugging?
8. Explain integration testing.
9. What is meant by software verification?
10. What is meant by structured programming?

PART B — (5 × 16 = 80 marks)

11. (a) Explain with a suitable example the software configuration management process. (16)

Or

- (b) What are the qualitative software metrics? How are these different from quantitative software metrics? Explain in detail. (16)

12. (a) What are the characteristics of a good SRS? Explain any four in detail. (16)

Or

- (b) What are the responsibilities of a system analyst? Should he possess a strong technical skill? Why? (16)

13. (a) Explain COCOMO model in detail with a supporting illustrative example. (16)

Or

- (b) Explain different strategies for team members organization. Bring out pros and cons of each. (16)

14. (a) With a suitable example explain how architectural design is carried out. (16)

Or

- (b) (i) Explain any two design tools. (8)

- (ii) Discuss the verification and validation process with its metrics. (8)

15. (a) What do you mean by Information hiding? What are its advantages? Explain. (16)

Or

- (b) Consider the program segment to solve a quadratic equation and explain the concept of symbolic execution. (16)