No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS

Term-End Examination

December, 2013

BCS-051 : Introduction to Software Engineering

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question no. **1** is **compulsory** and carries 40 marks. Attempt **any three** questions from rest*

1. (a) Write the structure of SRS as per IEEE standards. **25**

(b) Explain any two characteristics of a good function oriented design. **10**

(c) Explain water Fall Model with the help of a diagram. **5**

2. (a) Draw first three levels of DFDs for a "Student Admission System" . Make assumptions wherever necessary. **10**

(b) Define the terms "Black Box Testing" and "White Box Testing". **10**

3. (a) Draw PERT chart for the development of "Student Admission System". **10**

(b) Draw Class Diagram for any system of your choice. Include a short note on the system chosen. **10**

4. (a) Develop a test case for any testing technique for "Student Admission System". **10**

(b) Define the term "Software Project Management". Explain various tasks involved in it. **10**

5. (a) Draw ERD for any system of your choice. Indicate the title of the system chosen. **10**

(b) Write a short note on Software Configuration Management. **10**

No. of Printed Pages : **2**

BCS-051

BACHELOR OF COMPUTER APPLICATIONS

Term-End Examination

December, 2013

BCS-051 : Introduction to Software Engineering

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question no.* **1** *is* ***compulsory*** *and carries 40 marks. Attempt* ***any three*** *questions from rest*

1. (a) Write the structure of SRS as per IEEE standards. **25**

(b) Explain any two characteristics of a good function oriented design. **10**

(c) Explain water Fall Model with the help of a diagram. **5**

2. (a) Draw first three levels of DFDs for a "Student Admission System" . Make assumptions wherever necessary. **10**

(b) Define the terms "Black Box Testing" and "White Box Testing". **10**

3. (a) Draw PERT chart for the development of "Student Admission System". **10**

(b) Draw Class Diagram for any system of your choice. Include a short note on the system chosen. **10**

4. (a) Develop a test case for any testing technique for "Student Admission System". 10

(b) Define the term "Software Project Management". Explain various tasks involved in it. 10

5. (a) Draw ERD for any system of your choice. Indicate the title of the system chosen. 10

(b) Write a short note on Software Configuration Management. 10

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS

01873

Term-End Examination

June, 2014

BCS-051 : Introduction to Software Engineering

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question no. **1** is **compulsory** and carries **40** marks. Attempt **any three** questions from the rest.*

1. (a) Develop SRS for "Railway Reservation System". Make necessary assumptions. Follow IEEESRS format. **25**

   (b) Define the terms "Coupling" and "Cohesion". Write the differences between them. **10**

   (c) What SDLC model will you use for "Railway Reservation System" ? Justify your answer. **5**

2. (a) Draw first three levels of DFDs for a "Railway Reservation System". Make assumptions, wherever necessary. **10**

   (b) Define the terms "System Testing" and "Integration Testing". **10**

3. (a) Draw GANTT chart for the development of "Railway Reservation System". **10**

(b) Draw Use Case Diagram for a system of your choice. Include a short note on the system chosen. **10**

4. (a) Develop a test case for any testing technique for "Railway Reservation System". **10**

(b) Write a short note on Software Metrics. **10**

5. (a) Draw structure chart for any system of your choice. Indicate the title of the system chosen. **10**

(b) Write a short note on Software Quality Assurance. **10**

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

04054

December, 2014

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question no. **1** is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

---

1. (a) Develop SRS for "Library Information System". Make necessary assumptions. Follow IEEE SRS format. *15*

(b) Explain the solution design methods in Function Oriented Design. *10*

(c) Explain Waterfall Model with feedback. *5*

(d) Write short notes on any ***two*** of the following : *10*

(i) Structure Chart

(ii) PERT Chart

(iii) Software Quality Assurance

2. (a) Draw first two levels of DFDs for a "Library Information System". Make assumptions wherever necessary. *10*

(b) Differentiate between "Black Box Testing" and "White Box Testing". Give suitable examples for both types of testing. *10*

3. (a) Draw GANTT chart for the development of "Library Information System". *10*

(b) Explain the rules to create a use case. Apply them to an example. *10*

4. (a) Explain any one testing technique and use it to develop a test case for "Library Information System". *10*

(b) How do you identify necessary utility objects in Object Oriented Design ? *10*

5. (a) Explain the different categories of Software Maintenance. *10*

(b) Write short notes on any ***two*** of the following : *10*

(i) Data Dictionary

(ii) Coupling

(iii) Cohesion

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

01993

June, 2015

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number **1** is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

---

1. (a) Explain IEEE SRS format and apply it to develop SRS for "Student Admission System". Make necessary assumptions. *25*

(b) Explain any ***two*** of the following with suitable examples : *10*

(i) Function Oriented Design

(ii) Object Oriented Design

(iii) Testing Tools

(c) Differentiate between Waterfall model and Spiral model. *5*

2. (a) Draw the first two levels of DFDs for a "Student Admission System". Make assumptions wherever necessary. *10*

(b) Define the terms "Integration Testing" and "Regression Testing". *10*

3. (a) Draw GANTT chart for the development of "Student Admission System". *10*

(b) Explain the term "Software Matrices". *10*

4. (a) Develop a test case for any testing technique for "Student Admission System". *10*

(b) Explain the Prototype Model with the help of a suitable example. *10*

5. (a) Explain the various debugging strategies. *10*

(b) Write a short note on Reverse Engineering. *10*

04844

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

December, 2015

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number **1** is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

---

1. (a) Explain IEEE SRS format and apply it to develop SRS for an "Online Examination System". Make necessary assumptions. *25*

(b) What is waterfall model for software development ? Explain the situation, in which the spiral model for software development should be preferred over waterfall model. *10*

(c) What is a class diagram ? Explain with the help of an example. *5*

2. (a) Draw the first two levels of DFDs for an "Online Examination System". Make necessary assumptions. *10*

(b) Draw a GANTT chart for the development of an "Online Examination System". *10*

3. (a) What is 'acceptance' testing ? Explain briefly alpha and beta testing. *10*

(b) Write a short note on software maintenance. *10*

4. (a) Define the term 'Software Quality'. Explain McCall's Software Quality Factors in brief. *10*

(b) What is a static object ? Explain the specifications of static objects for a problem of your choice. *10*

5. (a) What is system testing ? Explain recovery testing and performance testing with the help of examples. *10*

(b) Write a short note on Capability Maturity Models (CMM). *10*

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

00986

Term-End Examination

June, 2016

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number 1 is* ***compulsory*** *and carries 40 marks. Attempt any* ***three*** *questions from the rest.*

1. (a) Explain IEEE SRS format and apply it to develop SRS for "Online Railway Reservation System". Make necessary assumptions. *20*

(b) What is Use Case Diagram ? Draw a Use Case Diagram for Bank ATM System. *10*

(c) What is Spiral Model for software development ? Explain its primary activities in brief. *10*

2. (a) Draw the first two levels of DFDs for "Online Railway Reservation System". Make necessary assumptions wherever required. 10

(b) Define the term 'Coupling'. Explain the differences between coupling and cohesion. 10

3. (a) Draw a GANTT chart for the development of "Online Railway Reservation System". 10

(b) Explain Software Development Life Cycle (SDLC) in brief. 10

4. (a) What is Software Configuration Management ? Explain the necessity of software configuration management in brief. 10

(b) Write a short note on Software Quality Assurance (SQA). 10

5. (a) What is Function Oriented Design ? Explain the key elements and key features of Function Oriented Design. 10

(b) Write a short note on Regression Testing. 10

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

01875

Term-End Examination

December, 2016

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number 1 is* ***compulsory*** *and carries 40 marks. Attempt any* ***three*** *questions from the rest.*

---

1. (a) Develop an SRS for an "Online Student Registration System". Make necessary assumptions. Follow IEEE SRS format. Briefly explain the characteristics of a good SRS. *15*

(b) What is Spiral model for software development ? Explain the types of software systems developed using this model. *10*

(c) What is PERT chart ? Explain with the help of an example, the creation process of a PERT chart. *10*

(d) What is coupling ? Explain the meaning of a strongly coupled system. *5*

2. (a) Draw the first two levels of DFDs for an "Online Student Registration System". Make necessary assumptions as required. *10*

(b) Develop a test case for any testing technique for an "Online Student Registration System". *10*

3. (a) What is a data dictionary ? Briefly explain the contents of data dictionaries. *10*

(b) What are application logic objects ? Explain with the help of an example. *10*

4. (a) What is Module Testing ? How is it different from Integration Testing ? *10*

(b) What is the need of software planning ? Briefly explain any four types of project plans. *10*

5. Write short notes on any ***four*** of the following : *4×5=20*

(a) Entity Relationship Diagram

(b) Class Diagram

(c) Alpha and Beta Testing

(d) Software Quality Assurance Activities

(e) Project Triangle

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

04489

June, 2017

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number 1 is* ***compulsory*** *and carries 40 marks. Attempt any* ***three*** *questions from the rest.*

---

1. (a) Develop SRS for an "Online Railway Reservation System". Make necessary assumptions. Follow IEEE SRS format. *15*

(b) What is Waterfall Model ? Explain whether this model is suitable for developing a Railway Reservation System or not. *10*

(c) What are static objects ? Explain with the help of an example. *5*

(d) Differentiate between Black Box Testing and White Box Testing, with the help of suitable examples for both types of testing. *10*

2. (a) What is debugging ? Briefly explain any four debugging strategies. 10

(b) Draw the first two levels of DFDs for an "Online Railway Reservation System". Make the necessary assumptions required. 10

3. (a) Draw a Gantt chart for the development of an "Online Railway Reservation System". 10

(b) What is the need of software maintenance ? Explain different types of software maintenance. 10

4. (a) In Object Oriented Design, how are necessary utility objects identified ? Explain with the help of an example. 10

(b) Define the term 'Software Quality'. Also, briefly explain McCall's software quality factors. 10

5. Write short notes on any ***four*** of the following : 4×5=20

(a) Data Dictionary

(b) Capability Maturity Models (CMM)

(c) Software Metrics

(d) Use Case Diagram

(e) Project Planning

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

01760

December, 2017

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number **1** is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

---

1. (a) Explain IEEE SRS format and apply it to develop SRS for an online banking system. Make necessary assumptions. *25*

(b) What is Class Diagram ? Explain with the help of an example. *5*

(c) What is Coupling ? Is there any relation between Coupling and Cohesion ? Explain the meaning of highly coupled system. *10*

2. (a) Draw the first three levels of DFDs for an Online Banking System. Make necessary assumptions. *10*

(b) Explain the terms System testing and Regression testing. *10*

3. (a) Draw a Gantt Chart for the development of an Online Banking System. *10*

(b) Write a short note on Software Maintenance. *10*

4. (a) Write a short note on Capability Maturity Model (CMM). *10*

(b) Draw an ERD for an online banking system. *10*

5. (a) What is Software Quality ? Explain the role of software metrics in quality software development. *10*

(b) What is the need of Software Project Management ? Explain the various tasks involved in it. *10*

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

03585 **June, 2018**

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number **1** is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

1. (a) Develop SRS for an "Online Student Admission System". Make necessary assumptions and follow IEEE SRS format. *15*

(b) Draw use case diagram for an "Online Student Admission System". *10*

(c) A University wants to develop an "Online Student Admission System". Explain which software development model is suitable for this and why. *10*

(d) Explain the need of data dictionary in software development. *5*

2. (a) Draw a PERT chart for the development of an "Online Student Admission System". *10*

(b) Draw the first three levels of DFDs for an "Online Student Admission System". *10*

3. (a) What is software testing ? Explain the need of system testing. Also describe the process of system testing. *10*

(b) Describe software quality assurance. *10*

4. (a) What is function oriented design ? Explain its main elements and features. *10*

(b) Draw ERD for an "Online Student Admission System". *10*

5. (a) What is software configuration management ? Explain the need for software configuration management. *10*

(b) What is acceptance testing ? Explain alpha testing and its process. *10*

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

05193

December, 2018

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number **1** is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

1. (a) What is SRS ? Explain the characteristics of SRS. Develop SRS for an Online Examination System. Make necessary assumptions and follow IEEE SRS format. *20*

(b) Explain the advantages of Spiral model of software development. Describe the nature of software systems which are developed using Spiral model. *10*

(c) What is a class diagram ? Draw a class diagram for a system which maintains attendance of Post-Graduate and Under-Graduate students of an institution. *10*

2. (a) Draw first two levels of DFDs for an Online Examination System. Make necessary assumptions. *10*

(b) Explain module testing with the help of an example. *10*

3. (a) Draw a Gantt chart for the development of an Online Examination System. *10*

(b) What is Use Case ? Draw a Use Case for Online Ticket Booking for a movie. *10*

4. (a) Explain Software Project Control Cycle with the help of a diagram (flow chart). *10*

(b) What is Data Dictionary ? Briefly explain the components of Data Dictionary with the help of an example. *10*

5. (a) What is Software Configuration Management ? Briefly explain the activities in software configuration management. *10*

(b) Explain the process of developing Entity Relationship Diagram (ERD) with the help of drawing an ERD for managing Savings Account in a Banking System. Make necessary assumptions. *10*

42192

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (REVISED)

Term-End Examination

June, 2019

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 Hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question no. 1 is* ***compulsory*** *and carries 40 marks. Attempt any* ***three*** *questions from the rest.*

1. (a) What is SRS ? Explain the benefits of SRS. Develop SRS for Payroll Management System. Follow IEEE SRS format. 20

   (b) What are the key motivating factors for design using object-oriented concept ? 10

   (c) Explain regression testing. 5

   (d) Briefly explain any *two* problems related to software development. 5

2. (a) Draw first two levels of DFDs for "Payroll Management System." 10

(b) Explain "White Box Testing" and "Block Box Testing" with the help of example. 10

3. (a) Draw GANTT chart for development of "Payroll Management System." 10

(b) Explain any *four* debugging strategies. 10

4. (a) Explain the different categories of software maintenance. 10

(b) What is Software Quality Assurance ? Briefly explain McCall Software Quality Model. 10

5. (a) Write short notes on the following : 10

(i) Structure chart

(ii) PERT chart

(b) What is test case ? Explain test case for functional testing with the help of an example. 10

6354

No. of Printed Pages : 3

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (REVISED)

Term-End Examination

December, 2019

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 Hours *Maximum Marks : 100*

Weightage : 75%

Note : *Question No. 1 is* ***compulsory*** *and carries 40 marks. Attempt any* ***three*** *questions from the rest.*

---

1. (a) Explain IEEE SRS format and apply it to develop SRS for an "Online Student Admission System." Make necessary assumptions. 25

(b) What is Spiral Model ? Explain whether this model is suitable for developing an "Online Student Admission System" or not. 10

(c) Explain the function oriented design using an example. 5

2. (a) What is a Data Dictionary ? Briefly explain the contents of data dictionaries. 6

(b) Define the terms "Coupling" and "Cohesion". Explain the different types of coupling and cohesion. 14

3. (a) What is "acceptance testing" ? Also, explain alpha and beta testing techniques. Differentiate between Unit and Integration testing. 10

(b) Explain the Prototype model with the help of an example. 10

4. (a) Write a short note on Re-engineering. How does it differ from Reverse Engineering ? 10

(b) Explain McCall's Quality factors. 10

5. (a) What is meant by "Software Project Management" ? Explain different tasks involved in it. 10

(b) What is meant by Gantt Chart ? What is meant by Pert Chart ? Explain differences between them. 10

No. of Printed Pages : 3

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (REVISED)

Term-End Examination

June, 2020

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 Hours *Maximum Marks : 100*

Weightage : 75 %

Note : *(i) Question No. 1 is compulsory and carries 40 marks.*

*(ii) Attempt any **three** questions from the rest.*

---

1. (a) Develop SRS for *Online Assignment Submission System (OASS)*. SRS should be in IEEE format. 25

   (b) Explain Waterfall model with the help of an example. What are its advantages and disadvantages ? 10

   (c) What is a Use-Case diagram ? Explain with the help of an example. 5

2. (a) Draw the first two levels of DFDs for an OASS. Make necessary assumptions. 10

   (b) Draw a PERT chart for the development of an OASS. 10

3. (a) What is meant by software configuration management ? Explain its significance. 10

   (b) What are application logic objects ? Explain with the help of an example. 10

4. (a) What is Regrssion Testing ? What is its use in integration testing ? Differentiate between white box and black box testing. 10

(b) Explain the process of calculating cost of a project using COCOMO model. 10

5. (a) Explain object oriented design. 10

(b) Explain various SEI CMM levels. 10

No. of Printed Pages : 3

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (REVISED)

Term-End Examination

December, 2020

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 Hours *Maximum Marks : 100*

Weightage : 75%

Note : *Question No.* ***1*** *is compulsory and carries* ***40*** *marks. Attempt any* ***three*** *questions from the rest.*

1. (a) What is SRS ? Explain properties of good SRS. Develop SRS for an 'online shopping system.' Make necessary assumptions using IEEE SRS format. 20

   (b) Draw use case diagram for 'Online Shopping System.' 10

(c) Describe the Waterfall model. Explain the nature of problems for which Waterfall model of software development is suitable. Also briefly explain demerits of Waterfall model. 10

2. (a) Draw first two levels of DFDs for 'Online Shopping System'. Make necessary assumptions. 10

(b) Draw a Gantt chart for the development of an 'Online Shopping System'. 10

3. (a) What is acceptance testing ? Briefly explain alpha and beta testing. 10

(b) Define the terms 'Coupling' and 'Cohesion'. Briefly explain the meaning of 'highly cohesive' system. Is there any relation between 'coupling' and 'cohesion' ? Explain briefly. 10

4. (a) Write a short note on Software Metrics. 10

(b) Draw structure chart for 'Online Shopping System'. 10

5. (a) What is data dictionary ? How is data dictionary created ? Explain with the help of an example. 10

(b) What is class diagram ? Draw a class diagram for 'Online Shopping System'. 10

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

June, 2021

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number **1** is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

1. (a) Develop SRS for "Hospital Management System". Make necessary assumptions and follow IEEE SRS format. *15*

(b) A hospital wants to develop a "Hospital Management System". Explain which software development model is suitable for developing this system. *10*

(c) What is the need of software maintenance ? Briefly explain different types of software maintenance. *10*

(d) Draw use case diagram for a "Hospital Management System". Make necessary assumptions. *5*

2. (a) Draw a PERT chart for "Hospital Management System" of a hospital. *10*

(b) Draw first two levels of DFDs of "Hospital Management System" of a hospital. Make necessary assumptions. *10*

3. (a) Explain System Testing and Integration Testing techniques briefly. *10*

(b) Write a short note on Capability Maturity Model (CMM). *10*

4. (a) What is the need of software configuration management ? Briefly explain the process of software configuration management. *10*

(b) What is Test-case ? Briefly explain the role of Test-case in software testing with the help of test cases for "Hospital Management System". *10*

5. (a) What is Software Project Management ? Explain various tasks involved in it. *10*

(b) Draw ERD for "Hospital Management System". Make necessary assumptions. *10*

No. of Printed Pages : 4

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (REVISED)

Term-End Examination

December, 2021

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 Hours *Maximum Marks : 100*

Note : *Question No.* ***1*** *is compulsory and carries* ***40*** *marks. Attempt any* ***three*** *questions from the rest.*

1. (a) Explain the need for SRS. Develop a SRS for online shopping system of a grocery store. Make necessary assumptions. Follow IEEE SRS format. 20

(b) What is Waterfall Model ? Explain the advantages of using Waterfall model for software system development. 8

(c) What is usecase diagram ? Draw and define the use of any ***four*** symbols used to draw usecase diagram. 6

(d) What is Cohesion ? Briefly explain any ***three*** types of cohesion. 6

2. (a) Draw context diagram and first level DFD for "online shopping system of a grocery store". 10

(b) What is Testing ? Why is it needed ? Explain differences between white box testing and black box testing with the help of examples for both types of testing. 10

3. (a) Draw Gantt chart for development of an "online shopping system". 10

(b) What is Software Configuration Management (SCM) ? Explain the need of SCM with the help of an example. 10

4. (a) What is Capability Maturity Model (CMM) ? Briefly explain the *five* levels of maturity in CMM. 12

(b) What is an Object ? How is it different from class ? Explain use of static objects in problem solving with the help of an example. 8

5. (a) Write short notes on the following : 10

(i) Data Dictionary

(ii) Test cases for unit testing

(b) What are software metrics ? Briefly explain the following software metrics : 10

(i) Object Oriented Metrics

(ii) Software Quality Metrics

No. of Printed Pages : 3

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (REVISED)

Term-End Examination

June, 2022

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 Hours *Maximum Marks : 100*

Weightage : 75%

Note : *Question No.* ***1*** *is compulsory and carries* ***40*** *marks. Attempt any* ***three*** *questions from the rest.*

---

1. (a) Develop an SRS for 'Online Banking System'. Make necessary assumptions. Follow IEEE SRS format. 15

(b) What is function oriented design of software system ? Explain its advantages and disadvantages. 8

(c) Which software development model is suitable for developing 'Online Examination System' ? Justify your selection. Also explain the selected model. 7

(d) What is coupling ? How is it different from cohesion ? 5

(e) Briefly explain cost of software quality. 5

2. (a) Draw the context diagram and first level DFD for 'Online Banking System'. 10

(b) What is software maintenance ? Explain any *two* types of software maintenance in detail. 10

3. (a) Draw use-case diagram for 'Library Management System'. Make necessary assumptions. 10

(b) Draw GANTT chart for development of 'Online Banking System'. 10

4. (a) Draw structure chart for online shopping system. 10

   (b) Explain unit testing and module testing with the help of suitable example for each. 10

5. (a) Write short notes on the following : 10

   (i) PERT chart

   (ii) Project Planning

   (b) What is verification ? How is it different from validation ? Briefly explain any *four* principles of software testing. 10

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (Revised)

Term-End Examination

December, 2022

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 hours *Maximum Marks : 100*

(Weightage : 75%)

Note : *Question number **1** is **compulsory** and carries 40 marks. Attempt any **three** questions from the rest.*

1. (a) Develop SRS for *Online Examination Form Submission System (OEFSS)*. SRS should be in IEEE format. Make necessary assumptions. *25*

(b) Explain *Prototype Model,* with the help of an example. What are its advantages and disadvantages over Waterfall Model ? *10*

(c) What is a Structure Chart ? Explain with the help of an example. *5*

2. (a) Draw the zero and first level DFDs for OEFSS. Make necessary assumptions. *10*

(b) Draw GANTT Chart for the development of OEFSS. *10*

3. (a) Draw ERD for OEFSS. Make necessary assumptions. *10*

(b) Briefly explain different levels of SEI-CMM. *10*

4. (a) Explain the terms "Black Box Testing" and "White Box Testing". *10*

(b) How will you ensure that the software developed by you meets the Quality benchmarks ? Define the term "Software Quality". *10*

5. (a) In Object Oriented Design, list the common utility objects and criteria for identifying utility objects. *10*

(b) Explain various Debugging strategies. *10*

No. of Printed Pages : 2

BCS-051

BACHELOR OF COMPUTER APPLICATIONS (BCA) (REVISED)

Term-End Examination

June, 2023

BCS-051 : INTRODUCTION TO SOFTWARE ENGINEERING

Time : 3 Hours *Maximum Marks : 100*

Weightage : 75%

Note : *Question No.* ***1*** *is compulsory and carries* ***40*** *marks. Attempt any* ***three*** *questions from the rest.*

---

1. (a) Develop SRS for Online Study Center Allocation System (OSCAS) for students who apply for admission to a university. SRS should be in IEEE format. Make necessary assumptions. 25

(b) Explain Iterative Enhamement Model with the help of an example. What are its advantages and disadvantages over Spiral Model ? 10

(c) List the diagrams whose specifications are supported by UML. 5

2. (a) Draw the zero and first level DFDs for OSCAS. Make necessary assumptions. 10

(b) Draw PERT chart for the development of OSCAS. 10

3. (a) Draw ERD for OSCAS. Make necessary assumptions. 10

(b) Draw usecase diagram for OSCAS. 10

4. (a) Explain the five solution design principles in function oriented design. 10

(b) Explain the specification of a static object. 10

5. (a) Explain the *five* maturity levels of SEI-CMM. 10

(b) Briefly, explain 'Step-Wise" framework. 10