(2012 batch onwards)

G 601.5

Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October -2018

JAVA 2 ENTERPRISE EDITION

Time: 3 hrs. **Max Marks: 100**

PART – A

1. Answer any TEN of the following: **(10x2=20)**

a) What are JDBC statements?

b) What do you mean by 1-tier architecture?

c) What is a webserver?

d) What is the difference between GET and POST methods?

e) Mention the benefits of JSP.

f) What is CGI programming?

g) List the features of JDBC.

h) Define ResultSet.

i) What are the advantages of using Java Beans?

j) What are J2EE Containers?

k) What is meant byJ2EE routine?

l) Write a note on tracking sessions.

PART – B

Answer any FOUR of the following: **(4x5=20)**

2. Explain the advantages of prepared statement.
3. Explain the architecture of J2EE.
4. List and explain the major classes and interfaces of JDBC.
5. Write and explain procedure of reading data from a client and sending data to a client using the appropriate headers.
6. Describe the JSP life cycle.
7. Explain the basic JSP tags.

PART – C

Answer any FOUR full questions of the following: **(4x15=60)**

8.a) What are the different types of J2EE technologies? Explain in brief. **(8)**

b) Explain with a code example, the procedure of communicating with databases using JDBC APIs. **(7)**

Contd...2

9.a) List and explain the JDBC components. (8)

b) What are cookies? Explain the usage of cookies in session management. (7)

10.a) Explain the action tags used with Java Beans? (8)

b) What are servlets? Explain the benefits of using a Java servlet. (7)

11.a) Explain the different enterprise architecture types. (8)

b) Explain directive tags in JSP in detail. (7)

12.a) List and explain the different types of JDBC drivers. (8)

b) Explain JSP life cycle. (7)

13.a) Describe the J2EE Communication technologies. (8)

b) Explain the anatomy of Java Servlet. (7)

****

2

(2012 to 2016 Batch)

G 602.5 Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October - 2018

COMPUTER GRAPHICS AND MULTIMEDIA

Time: 3 hrs. **Max Marks: 100**

PART – A

Answer any TEN of the following: **(10x2=20)**

1. a) What is cartography?
   b) Define raster graphics.
   c) Write the nested for loop for filling rectangles.
   d) Define four way symmetry function used to draw a circle.
   e) What is sliver? Give an example.
   f) Define clipping.
   g) What is line style and pen style?
   h) Draw a line using line function.
   i) Write the matrix representation for translation in 2D.
   j) What is sound?
   k) Define information unit.
   l) What is acoustic signal?

PART – B

Answer any FOUR of the following: **(4x5=20)**

2. Explain architecture of raster system.
3. What are images? Explain different image formats.
4. Write DDA line drawing algorithm.
5. Consider a polygon with coordinates A (12, 7), B(15, 8), C(17, 10) scale it by two units in both x and y directions.
6. Explain scaling in 3D.
7. What is multimedia? Explain its applications.

PART - C

Answer any FOUR full questions of the following: **(4x15=60)**

8. a) Write note on uses of computer graphics. **(8)**
   b) Explain window to viewport transformation with suitable diagrams. **(7)**
9. a) Write a program to rotate a line with respect to arbitrary point. **(8)**
   b) Explain the composition of 3D transformation with an example. **(7)**

Contd...2

10. a) Explain transformation as a change in coordinate system. (8)
    b) What is speech? Explain speech generation process. (7)
11. a) Write the algorithm for scan conversion of ellipses. (8)
    b) Explain characteristics of continuous media. (7)
12. a) Prove that two successive 2D rotations are additive. (8)
    b) Write a note on cohen Sutherland line clipping algorithm. (7)
13. a) Explain flood fill and boundary fill algorithms. (8)
    b) Describe mid point algorithm for drawing a circle. (7)

****

3

G 603.5

(2012 to 2016 Batch)

Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October - 2018

OBJECT ORIENTED ANALYSIS AND DESIGN

Time: 3 hrs. **Max Marks: 100**

PART – A

Answer any TEN of the following: **(10x2=20)**

1. a) What are signals?
   b) What is framework?
   c) Define abstraction.
   d) What is a pattern? Explain.
   e) Define a transaction manager.
   f) Define testing. What is integration testing?
   g) Define controller.
   h) Give examples for change event and time event.
   i) What is responsibility?
   j) What is the use of UML state diagram?
   k) What is meant by activity effect with respect to state diagram?
   l) What is overriding? Explain.

PART – B

Answer any FOUR of the following: **(4x5=20)**

2. Explain the three types of models.
3. Write a note on signal event and change event.
4. Explain the concept of decomposition of systems into subsystems using layers and partitions.
5. Write a note on information hiding and the different ways used to hide information.
6. Explain the naming conversions for a class with examples.
7. Write a note on branches in activity diagram. Explain with example.

PART - C

Answer any FOUR full questions of the following: **(4x15=60)**

8. a) Bring out the differences between class diagram and object diagram with example. **(10)**
   b) Explain use case diagram with examples. **(5)**
9. a) Draw the class diagram and sequence diagram for the library system for your college. **(10)**
   b) Explain the development stages in a software development process. **(5)**

Contd...2

10. a) Explain in detail how to choose software control strategy. **(10)**

    b) Explain how to assign operations to class. **(5)**

11. a) What is inheritance? Explain adjustment of inheritance with example. **(10)**

    b) Explain the following concepts i) link ii) associations **(5)**

12. a) Explain the following terms:

    i) Association class ii) Qualified Association

    iii) Generalization iv) Bags and sequences **(10)**

    v) State diagram

    b) Explain actors and sequence diagram. **(5)**

13. a) Design a use case and class diagram for student registration system. Identify links, association name, multiplicity and generalization. **(10)**

    b) Explain interactive interface in the system design. **(5)**

****

4

(2012 onwards)

G 604.5 Reg. No: | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October – 2018

SOFTWARE ENGINEERING

Time: 3 Hours Max. Marks: 100

PART - A

Answer any TEN of the following: (10x2=20)

1. a) Give IEEE definition of software.
   b) What are the basic objectives of software engineering?
   c) What is data dictionary?
   d) Define data abstraction. Why is it needed?
   e) In a DFD, a source is represented by _____ and a process is represented by _____
   f) What is information hiding?
   g) What is the primary goal of coding phase?
   h) Which are the basic approaches in testing?
   i) Define software maintenance.
   j) Define testing.
   k) Mention the two approaches to prototyping.
   l) Define product metrics and process metrics.

PART - B

Answer any FOUR of the following: (4x5=20)

2. Mention and explain the various problems faced in software engineering.
3. Explain the activities of requirement process with a proper diagram.
4. Write a note on PDL with suitable example.
5. Briefly explain functional testing.
6. Explain the software configuration item (SCI).
7. With an example, explain structure chart.

PART - C

Answer any FOUR of the following: (15x4=60)

8. a) With the help of a diagram explain the working of the waterfall model. (6)
   b) Explain any four quality attributes of software engineering. (4)
   c) What is coupling? Explain two factors that effect coupling. (5)

9. a) Write a note on verification in the detailed design phase. (4)
   b) Write a note on SDM strategy. (5)
   c) Explain any three programming style. (6)

Contd...2

10. a) Explain the symbolic execution and execution tree. (6)
    b) What is test oracle? Explain with the help of the diagram. (5)
    c) What do you mean by corrective and preventive maintenance? (4)

11. a) Briefly explain the various characteristics of a software process. (5)
    b) Explain the cause-effect graphing with the help of a diagram. (5)
    c) Write a note on capability maturity model. (5)

12. a) With the help of a diagram explain the DFD of a employee payroll system. (7)
    b) List and explain different levels of cohesion. (8)

13. a) Explain the working of an iterative enhancement model with the help of a diagram. (6)
    b) Write a note on
       i) Design walkthroughs ii) Consistency checkers (6)
    c) Explain the concept of structured programming. (3)

****

5

G 605.5

(2012 to 2016 Batch)

Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October - 2018

E-COMMERCE

Time: 3 hrs. **Max Marks: 100**

PART – A

Answer any TEN of the following: **(10x2=20)**

1. a) Define E-mail. What are its uses?
   b) What is asymmetric cryptography?
   c) Expand VPN and explain.
   d) What is EANCOM?
   e) What is authentication in electronic money?
   f) Mention two goals of SCM.
   g) What do you mean by value chains?
   h) What is constraint programming?
   i) Mention two disadvantages of internet banking.
   j) What is a firewall?
   k) Expand UN/EDIFACT and SMTP.
   l) What do you mean by CORBA ?

PART – B

Answer any FOUR of the following: **(4x5=20)**

2. Explain network with different topologies.
3. Define electronic money and explain EPS.
4. Explain components of EDI system.
5. Explain E-wallet with example.
6. Write a short note on firewalls.
7. Briefly explain value chain management.

PART - C

Answer any FOUR full questions of the following: **(4x15=60)**

8. a) Explain B2B transaction with the help of a diagram with its benefits. **(8)**
   b) Explain cryptography with RSA algorithm **(7)**
9. a) Explain electronic payment systems with its advantages and disadvantages. **(8)**
   b) Explain: i) Article numbering ii) Barcoding **(7)**

Contd...2

10. a) Explain functions of SCM. (8)
    b) Explain : i) E-cash b) e-cheque. (7)
11. a) Explain the ISO-OSI reference model with a neat diagram. (8)
    b) Explain CRM with its components. (7)
12. a) What are the strategies of SCM? Explain. (8)
    b) Explain the concept of digital signature and PKIS. (7)
13. a) With a block diagram explain EDI messages are used to automate the document process. (8)
    b) Briefly explain X.400 MHS functional model. (7)

****

6

(2012 batch onwards)

G 606.5

Reg. No. | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
BCA Semester V – Degree Examination
October - 2018
DESIGN AND ANALYSIS OF ALGORITHMS

Time: 3 hrs. **Max Marks: 100**

PART–A

Answer any TEN of the following: **(10x2=20)**

1. a) What are the types of algorithm efficiencies?
   b) What is pseudocode?
   c) Define Dynamic programming.
   d) Define Dijkstra's algorithm.
   e) Define Big –Omega notation.
   f) What are the requirements that are needed for performing back tracking?
   g) Define optional finish time.
   h) Write any two characteristics of Greedy algorithm.
   i) Is insertion sort better than the merge sort? Why?
   j) Define divide and conquer method.
   k) Write the general format of loop.
   l) What is knapsack problem?

PART–B

Answer any FOUR of the following: **(4x5=20)**

2. Compare backtracking and 'branch and bound' techniques.
3. Write an algorithm for m-coloring problem.
4. Design an algorithm to find the smallest and largest number of an array using divide and conquer technique.
5. Define NP and NP hard problems. Give example.
6. Explain optional search tree with help of an example.
7. Explain in brief, characteristics of dynamic programming.

PART–C

Answer any FOUR full questions of the following: **(4x15=60)**

8. a) Write the Prim's algorithm for finding minimum spanning tree and analyse the algorithm. **(8)**
   b) Define an algorithm. Explain the derivable properties of it. **(7)**
9. a) Write Floyd's algorithm to solve all pairs shortest path problem. **(9)**
   b) Write a pseudo code for the knapsack problem using memory function method. **(6)**

Contd...2

10.a) What is multistage graph? Explain with an example. Write the pseudocode for finding the minimum cost path using forward approach. (8)

b) Evaluate the subset sum problem with set as {3,5,6,7,2} and the sum =15. Derive all the subsets. (7)

11.a) Explain the approximation algorithm for the travelling salesman problem. (8)

b) Describe briefly about the worst case and average case analysis. (7)

12.a) Consider five items along with their respective weights and profit values. (8)

Items I=<11, 12, 13, 14,15>

weight w=<5,10,20,30,40>

Profit value: v<30,20,100,90,160>

the knapsack has capacity w=60. Find an optimal solution to the knapsack problem.

b) Explain 8-Queen problem with an algorithm. (7)

13.a) Write and explain the merge sort algorithm. Sort the following numbers using merge sort. (8)

31,22,85,17,46,52,35,14

b) State the purpose of Warshall's algorithm. Explain with an example. (7)

****

(2017 Batch onwards)

G 601.5 Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October - 2019

JAVA 2 ENTERPRISE EDITION

Time: 3 hrs. Max Marks: 100

PART – A

Answer any TEN of the following. (10x2=20)

1. a) What is ResultSet?
   b) Describe the structure of JSP.
   c) What is session?
   d) What is CGI programming?
   e) What is JDBC?
   f) What is deployment descriptor?
   g) What is a web server?
   h) Write the difference between GET and POST methods?
   i) What is 1- tier architecture?
   j) Write the JDBC code to establish connection with a data source.
   k) What is the action tag used with Java Beans?
   l) Which are the three logical layers of enterprise architecture?

PART – B

Answer any FOUR of the following. (4x5=20)

2. Write a note on J2EE service Technologies.
3. What is the significance of cookies? How do you create cookies in Servlets? Explain with an example?
4. Explain basic JSP tags.
5. What are the advantages of prepared statement? Explain.
6. Explain how to process GET and POST methods in Servlets.
7. What are the advantages of using Java Beans?

PART – C

Answer any ONE FULL question from each unit. (15x4=60)

UNIT – I

8. a) Explain 2- tier and 3- tier architectures. (8)
   b) What are the different types of J2EE technologies? Explain in brief. (7)

9. a) Explain J2EE containers and connectors. (8)
   b) What is the need for enterprise computing? What are the advantages of J2EE? Explain both. (7)

Contd...2

UNIT – II

10. a) What are database drivers? Explain the various JDBC driver types. (8)
    b) List and explain various statement objects in JDBC. (7)

11. a) Explain the JDBC process steps for querying database. (8)
    b) Describe the architecture and features of JDBC. (7)

UNIT – III

12. a) Explain any two methods used to set the HttpResponse headers on a servlet page. (8)
    b) What are the advantages of servelts over CGI programming? (7)

13. a) Explain the structure of a servlet program with an example. (8)
    b) What are servlets? Explain the benefits of using a Java servlet. (7)

UNIT – IV

14. a) Explain the life cycle of JSP. (8)
    b) Explain the key concepts and advantages of Java Beans. (7)

15. a) Explain the following.
    i) Implicit objects in JSP
    ii) JSP architecture (8)
    b) What is JSP? Explain the advantages of JSP over servlets. (7)

****

(2017 batch onwards)

G 602.5 Reg. No. | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
BCA Semester V – Degree Examination
October - 2019
COMPUTER GRAPHICS AND MULTIMEDIA

Time: 3 hrs. **Max Marks: 100**

PART–A

Answer any TEN of the following: **(10x2=20)**

1. a) What are the two drawbacks of DDA algorithm?
   b) What is rasterization?
   c) Write the region out codes for clipping a straight line against a clip window.
   d) What is eight- way symmetry of a circle?
   e) What is scaling?
   f) Define Clipping.
   g) What are line style and pen style?
   h) What is ADC and DAC?
   i) Define multimedia.
   j) What do you mean by bitmap?
   k) List the advantages of digital CD–DA technology.
   l) What do you mean by acoustic signals?

PART–B

Answer any FOUR of the following: **(4x5=20)**

2. Write DDA line drawing Algorithm.
3. Explain architecture of raster system.
4. Consider a polygon with coordinates A (12, 7), B (15, 8), C (17, 10) scale it by two units in both x and y directions.
5. Write a short note on:
   i) filling rectangle ii) replicating pixels
6. Explain the two different projections in 3D viewing.
7. Prove that two successive rotations are 2D additive.

PART–C

Answer any ONE full question from each unit **(4x15=60)**

Unit- I

8.a) Write midpoint circle algorithm to scan convert a circle. **(5)**
   b) Write a note on uses of computer graphics. **(5)**
   c) Write a note on conceptual framework of interactive graphics. **(5)**

OR

9.a) Write ellipse drawing algorithm. **(6)**
   b) Explain the architecture of vector scan display with a neat diagram. **(6)**
   c) Write a note on scan conversion. **(3)**

Contd...2

Unit - II

10.a) Explain Cohen–Sutherland line clipping algorithm (8)

b) Write a short note on following (7)

a) pattern filling b) flood filling

OR

11.a) Write a note on thick primitives. (8)

b) Explain two methods of generating characters. (7)

Unit - III

12.a) Explain window to viewport transformation and derive the matrix for the same. (8)

b) Write the matrix translation, Sealing and rotation about 3 axis in 3D homogeneous co-ordinate system. (7)

OR

13.a) What do you mean by Homogeneous co-ordinates? Explain composition of 2D transformation. (6)

b) Given a Polygon with coordinates A(2,5) B (7, 10) and C (10,2). (9)
i) Translate by 30 units in x-axis and 40 units is y-axis direction
ii) Scale by two units in X direction and one unit in y-axis direction.

Unit - IV

14.a) Explain image compression steps with a block diagram. (5)

b) What is medium? Explain different types of medium. (5)

c) Write the basic steps in computer animation. (5)

OR

15.a) Write a note on optical storage Media. (5)

b) Explain main properties of Multimedia System. (5)

c) Write a note on Digital Image Representation. (5)

****

(2017 Batch onwards)

G 603.5 Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October - 2019

OBJECT ORIENTED ANALYSIS AND DESIGN

Time: 3 hrs. **Max Marks: 100**

PART – A

1. Answer any TEN of the following: **(10x2=20)**

a) Define polymorphism. Give an example.
b) What is interaction model?
c) Define ordering.
d) What is signal event?
e) Define aggregation. How do you represent aggregation in class diagram?
f) What is generalization?
g) Define Abstraction.
h) What is use case?
i) What is layered system?
j) Define refactoring.
k) Write short notes on design optimization.
l) What is Information hiding?

PART – B

Answer any FOUR of the following: **(4x5=20)**

2. Which are the different OO themes? Explain.
3. Give the Guidelines for use case models.
4. Explain sequence diagram with passive objects.
5. Explain about refining with inheritance.
6. Write short notes on procedure driven control.
7. How to assign operations to classes? Explain in detail.

PART C

Answer ONE full question from each unit **(15x4=60)**

UNIT I

8.a) Explain in detail about links and associations. **(8)**
b) Differentiate between class diagram and object diagram. **(7)**

9.a) Write about multiple inheritances in detail. **(8)**
b) What are the properties of association end? Explain with example. **(7)**

Contd..2

(2017 Batch onwards)

G 603.5

Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October - 2019

OBJECT ORIENTED ANALYSIS AND DESIGN

Time: 3 hrs. **Max Marks: 100**

PART – A

1. Answer any TEN of the following: **(10x2=20)**

a) Define polymorphism. Give an example.
b) What is interaction model?
c) Define ordering.
d) What is signal event?
e) Define aggregation. How do you represent aggregation in class diagram?
f) What is generalization?
g) Define Abstraction.
h) What is use case?
i) What is layered system?
j) Define refactoring.
k) Write short notes on design optimization.
l) What is Information hiding?

PART – B

Answer any FOUR of the following: **(4x5=20)**

2. Which are the different OO themes? Explain.
3. Give the Guidelines for use case models.
4. Explain sequence diagram with passive objects.
5. Explain about refining with inheritance.
6. Write short notes on procedure driven control.
7. How to assign operations to classes? Explain in detail.

PART C

Answer ONE full question from each unit **(15x4=60)**

UNIT I

8.a) Explain in detail about links and associations. **(8)**
b) Differentiate between class diagram and object diagram. **(7)**

9.a) Write about multiple inheritances in detail. **(8)**
b) What are the properties of association end? Explain with example. **(7)**

Contd..2

UNIT II

10.a) Explain about state diagram behavior in detail. **(8)**

b) Which are the different types of relationships involved in use case? Explain. **(7)**

11.a) Draw sequence diagram for library system. **(8)**

b) Explain the different notations used in state diagram with example. **(7)**

UNIT III

12.a) Explain the stages of software development process in detail. **(8)**

b) What is library? What are the good qualities of a class library? Explain the problems that limit the ability to reuse code from class library. **(7)**

OR

13.a) Write about application interaction model with steps. **(8)**

b) Which are the two approaches to software development life cycle. **(7)**

UNIT IV

14 a) Explain the different steps for designing algorithms. **(8)**

b) How do you optimize system design? Explain. **(7)**

15 a) Which are the two methods of downward recursion? Explain. **(8)**

b) Write a note on adjustment of inheritance. **(7)**

****

3

(2017 Batch onwards)

G 603.5

Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October - 2019

OBJECT ORIENTED ANALYSIS AND DESIGN

Time: 3 hrs. **Max Marks: 100**

PART – A

1. Answer any TEN of the following: **(10x2=20)**

a) Define polymorphism. Give an example.

b) What is interaction model?

c) Define ordering.

d) What is signal event?

e) Define aggregation. How do you represent aggregation in class diagram?

f) What is generalization?

g) Define Abstraction.

h) What is use case?

i) What is layered system?

j) Define refactoring.

k) Write short notes on design optimization.

l) What is Information hiding?

PART – B

Answer any FOUR of the following: **(4x5=20)**

2. Which are the different OO themes? Explain.

3. Give the Guidelines for use case models.

4. Explain sequence diagram with passive objects.

5. Explain about refining with inheritance.

6. Write short notes on procedure driven control.

7. How to assign operations to classes? Explain in detail.

PART C

Answer ONE full question from each unit **(15x4=60)**

UNIT I

8.a) Explain in detail about links and associations. **(8)**

b) Differentiate between class diagram and object diagram. **(7)**

9.a) Write about multiple inheritances in detail. **(8)**

b) What are the properties of association end? Explain with example. **(7)**

G 603.5

UNIT II

10.a) Explain about state diagram behavior in detail. (8)

b) Which are the different types of relationships involved in use case? Explain. (7)

11.a) Draw sequence diagram for library system. (8)

b) Explain the different notations used in state diagram with example. (7)

UNIT III

12.a) Explain the stages of software development process in detail. (8)

b) What is library? What are the good qualities of a class library? Explain the problems that limit the ability to reuse code from class library. (7)

OR

13.a) Write about application interaction model with steps. (8)

b) Which are the two approaches to software development life cycle. (7)

UNIT IV

14 a) Explain the different steps for designing algorithms. (8)

b) How do you optimize system design? Explain. (7)

15 a) Which are the two methods of downward recursion? Explain. (8)

b) Write a note on adjustment of inheritance. (7)

****

(2017 Batch onwards)

G 604.5 Reg. No. | | | | | | |

St Aloysius College (Autonomous)

Mangaluru

B.C.A. Semester V – Degree Examination

October - 2019

SOFTWARE ENGINEERING

Time: 3 hrs. **Max Marks: 100**

PART – A

Answer any TEN of the following. **(10x2=20)**

1. a) What is Software Engineering?
   b) Define Verification.
   c) Define Software Design.
   d) Expand COCOMO. Mention the levels of COCOMO.
   e) What is Information Hiding?
   f) Define Data Dictionary?
   g) Define PDL. Why is it useful?
   h) Define Review.
   i) Mention the categories of Risk Management.
   j) What are the two classes of software?
   k) What do you understand by the term fault and failure?
   l) What do you mean by Software Quality Assurance?

PART – B

Answer any FOUR of the following. **(4x5=20)**

2. Explain the activities of requirement process with a proper diagram.
3. Comment on the statement " Software does not wear out"
4. Explain in detail the Capability Maturity Model (CMM).
5. Differentiate Black- Box testing and White BOX testing.
6. Write a note on Complete COCOMO model.
7. Briefly explain Control Base testing with suitable example.

PART – C

Answer any ONE FULL question from each unit. **(15x4=60)**

UNIT – I

8. a) Explain the components of SRS. **(8)**
   b) Give the basic phases in software development life cycle. **(7)**

9. a) Draw the schematic diagram of the spiral model of software development. Also discuss the phases in brief. **(8)**
   b) Write a short note on: i) Decision Table ii) E-R diagram **(7)**

Contd...2

UNIT – II

10. a) Explain the various programming styles of Software Engineering. (8)

b) Explain the different levels of cohesion that a module might exhibit. (7)

11.a) Explain the Software Design Principles. (8)

b) Write a short note on:

i) Flow Chart ii) Pseudo-Code (7)

UNIT – III

12.a) Explain Integration testing and its approaches. (8)

b) Explain Top-Down and Bottom-Up approach. (7)

13.a) Define the term "Debugging". Explain various debugging techniques available. (8)

b) What do you mean by Code Walk Through? (7)

UNIT – IV

14.a) Write a short note on Belady and Lehman model for the calculation of maintenance effort. (9)

b) Explain the Software Project Estimation. (6)

15. a) Explain the various software configuration management activities. (8)

b) Explain the categories of software maintenance. (7)

****

5

(2017 batch onwards)

G 605.5 Reg. No. | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
BCA Semester V – Degree Examination
October - 2019
E-COMMERCE

Time: 3 hrs. **Max Marks: 100**

PART–A

Answer any TEN of the following: **(10x2=20)**

1. a) Define E-mail. What are its uses?
   b) State any two needs for E-commerce.
   c) What is decryption?
   d) What is Digital Signature?
   e) What is HTTP? Why it is used?
   f) What are the limitations of EDI?
   g) What are smart cards?
   h) What do you mean by sniffing?
   i) What is a firewall?
   j) What is mobile commerce?
   k) Write the function of ACH.
   l) What are the properties of E-Cash?

PART–B

Answer any FOUR of the following: **(4x5=20)**

2. Write the applications of E-commerce.
3. Discuss the mechanisms available for internet security.
4. Write a note on Firewalls.
5. Write a note on PROS and CONS of online shopping.
6. Explain E-wallet with example.
7. Explain online shopping process.

PART–C

Answer any ONE full question from each unit **(4x15=60)**

Unit- I

8.a) Define E-commerce? Explain advantages and disadvantages of E-commerce. **(6)**

b) With the help of a block diagram, explain B2B transaction. Also list its benefits. **(9)**

OR

9.a) Write a note on types of E-commerce Models **(6)**

b) Write about Impact and benefits of E-commerce. **(9)**

Contd...2

G 601.1

Unit - II

10.a) What do you mean by electronic funds transfer? What are the security issues involved in this. (6)

b) What is cryptography? Explain in detail different types of cryptosystems. (9)

OR

11.a) Write a note on Virtual Private Network. (6)

b) What are the different types of electronic payment systems? Explain each of them. (9)

Unit - III

12.a) Write a note on following (6)

a) WWW Server b) FTP

b) Define EDI. How EDI benefits business relationship between organization and also explain components of EDI. (9)

OR

13.a) Write about architectural framework of electronic commerce. (6)

b) What are the applications of EDI? Mention the advantage and disadvantages of EDI. (9)

Unit - IV

14.a) Differentiate mobile commerce and E-commerce. (6)

b) Write a note on frame work and models of mobile commerce. (9)

OR

15.a) Define mobile commerce. Explain how mobile commerce benefits in online shopping. (6)

b) Write about Internet marketing techniques. (9)

****

6

G 606.5

(2017 Batch onwards)
Reg. No. | | | | | | |

St Aloysius College (Autonomous)
Mangaluru
B.C.A. Semester V – Degree Examination
October - 2019
DESIGN AND ANALYSIS OF ALGORITHMS

Time: 3 hrs. **Max Marks: 100**

PART – A

1. Answer any TEN of the following: **(10x2=20)**

a) Define big Oh notation.
b) What is meant by divide and conquer?
c) Write running time of the optimal BST algorithm.
d) What do you mean by Hamiltonian cycle in an undirected graph?
e) Define spanning tree.
f) What is meant by worst case complexity of an algorithm?
g) Can you differentiate between quicksort and mergesort?
h) Define backtracking.
i) Write any two applications of branch and bound technique.
j) Write any two explicit and implicit constraints for 8-queen problem.
k) Define dynamic programming.
l) What is binary search?

PART – B

Answer any FOUR of the following: **(4x5=20)**

2. Write the pseudo code to find optimal binary search tree using dynamic programming.
3. Write a detailed note on divide and conquer techniques.
4. Define NP and NP hard problems. Give example.
5. Write a short note on selection sort.
6. Define Huffman tree. List the types of encoding in Huffman tree.
7. Compare dynamic programming technique with greedy algorithms.

PART C

Answer ONE full question from each unit: **(15x4=60)**

UNIT I

8.a) Explain merge sort algorithm with an example. **(7)**
b) Explain binary search algorithm with an example. **(8)**

OR

9.a) Explain Strassen's matrix multiplication algorithm. **(7)**
b) Define asymptotic notations used for the best case, average & worst case analysis of an algorithm. **(8)**

Contd..2

UNIT II

10.a) Explain Kruskal's algorithm for finding the minimum spanning tree. (7)

b) Consider a scheduling problem where the six jobs have a profit of (10, 34, 67, 45, 23, 99) and corresponding deadlines (2, 3, 1, 4, 5, 3). Obtain the optimum schedule. (8)

11.a) Write greedy algorithm to generate shortest path. (7)

b) Apply greedy technique to the following fractional Knapsack problem with n=3 m=20, $(P_1, P_2, P_3) = (25, 24, 15)$ and $(w_1, w_2, w_3) = (18, 15, 10)$. (8)

UNIT III

12.a) Explain all pairs shortest path algorithm with an example. Write a time complexity. (7)

b) What is multistage graph? Explain with an example. Write the pseudo code for finding the minimum cost path using forward approach. (8)

13.a) What is O/1 knapsack problem? Explain the steps to solve it using dynamic programming & illustrate with an example. (7)

b) Write a note on string editing problem. (8)

Given x= a, a, b, a, b & Y= b, a, b, b. Each insertion and deletion has unit cost & change cost two units. Find the minimum cost edit sequences that transforms X into Y.

UNIT IV

14 a) Write an algorithm for m-coloring problem. (7)

b) Write a note on 8- Queen's problem. (8)

15 a) Compare backtracking, branch & bound techniques with an example. (7)

b) Explain the classes of P & NP. (8)

****