B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

Seventh Semester

Branch : Computer Science and Engineering

OBJECT-ORIENTED MODELLING AND DESIGN (RT)

(Regular/Supplementary)

Time : Three Hours   Maximum : 100 Marks

*Answer **all** questions.*

Part A

Each question carries 4 marks.

1. What do you mean by object oriented modelling ?
2. What do you mean by metadata ?
3. Briefly explain the operation of evetns and datas.
4. Briefly explain the functions of constraints.
5. What is the need for analysis in object modelling ?
6. What is the need for breaking system into subsystem ?
7. What do you mean by object design ?
8. Define object representation.
9. Explain briefly about Booch's methodology.
10. What are the major advantages of UML ?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) Discuss in detail about the object oriented methodology and themes with neat diagrams.

Or

   (b) Write a short note on the following :—

     (i) Aggregation.

     (ii) Multiple inheritance.

12. (a) With sketches, explain about advanced modelling concepts. Also discuss about the relationship between object and dyamic models.

Or

   (b) What is meant by functional models ? Discuss in detail about data flow diagrams and specifying operations.

13. (a) Discuss in detail about dynamic and functional modelling with neat diagrams.

Or

(b) Write short notes on the following :—

(i) Identifying concurrency.

(ii) Handling of global resources.

14. (a) Explain about design algorithms and design optimization with suitable examples.

Or

(b) Discuss in detail about documentation design decisions. Also compare the different methodologies.

15. (a) With neat diagrams, explain the architecture of Jacobson methodology. Also discuss about its uses.

Or

(b) Write a short note on unified modelling language.

(5 × 12 = 60 marks)

F 9122

B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

Seventh Semester

Branch : Computer Science and Engineering/Information Technology

COMPUTER GRAPHICS (R, T)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer **all** *questions.*

Part A

Each question carries 4 marks.

1. Discuss the basic concepts of Computer Graphics.
2. Explain the applications of Raster scan Graphics.
3. Explain what is meant by line chipping.
4. Briefly explain polygon chipping.
5. Give a brief description of 3D display method.
6. Explain spline representation.
7. Explain gamma correction of intensity.
8. Write brief note on gouraud shading.
9. Briefly explain general computer animation functions.
10. Write a brief note on morphing.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) List the input devices and explain the working of each.

Or

(b) List the display devices and explain the classification of display devices used in computer graphics.

12. (a) Explain in detail Bresenham's circle drawing algorithm.

Or

(b) Explain what is 2D transformation. Briefly explain any *two* geometric transformation applied to graphic object in 2D transformation.

Turn over

13. (a) Explain in detail Bezier curve generation technique.

Or

(b) Describe polygon surface method to represent 3D objects.

14. (a) Briefly explain classification of visible surface detection algorithms.

Or

(b) Explailn the scan line method for hidden surface elimination.

15. (a) Explain in detail the self squaring fractals.

Or

(b) Briefly explain Raster Animation.

(5 × 12 = 60 marks)

B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

Seventh Semester

Branch : Computer Science and Engineering

THEORY OF COMPUTATION (R)

(Regular/Supplementary)

Time : Three Hours   Maximum : 100 Marks

*Answer **all** questions.*

Part A

Each question carries 4 marks.

1. Explain the term countability.

2. What is meant by a formal proof ?

3. State the formal definition of an E-NFA.

4. Design a DFA that accepts the language :

    L = {w/w starts with 01} from the alphabet {0, 1}.

5. Define a pushdown automata.

6. Design a context free grammar that accepts the language $L = \left\{ 0^n 1^n / n \geq 1 \right\}$.

7. Explain the instantaneous description of a turing machine.

8. What is a universal turing machine ?

9. What is meant by intractable problem ?

10. Briefly explain NP hard problem.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Differentiate between Primitive recursive and Partial resursive functions with examples.

Or

12. Write notes on :

    (a) Equinumerous sets.

    (b) Diagonalization principle.

(6 + 6 = 12 marks)

Turn over

13. Explain the different applications of a finite automata.

Or

14. Prove that for every NFA there is a equivalent DFA.

15. Design a pushdown automata that accepts the language L = {w/w contains equal number of 0's and 1's} from the input alphabet {0, 1}.

Or

16. Differentiate between Deterministic and Non-deterministic PDA with examples.

17. Design a turing machine that computes a function $f(m, n) = m + n$ in addition of two integers.

Or

18. Explain the halting problem of turing machine. Prove that it is undecidable.

19. Explain the different classification of problems based on their complexity.

Or

20. Prove that the satisfiability problem is NP complete.

$[5 \times 12 = 60 \text{ marks}]$

F 9140

Reg. No....................................

Name...................................

B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

Seventh Semester

Branch—Computer Science and Engineering

ADVANCED SOFTWARE ENVIRONMENTS (R)

Time : Three Hours

Maximum : 100 Marks

Answer **all** *questions.*

Part A

Each question carries 4 marks.

1. Distinguish between ordinary programming and windows programming.

2. Write the procedure for drawing on windows.

3. List out the features of MFC.

4. What are the steps needed for handling mouse and keyboard events ?

5. Briefly explain CORBA IDL.

6. Explain the steps for implementing CORBA client.

7. What is meant by CORBA object reference ?

8. Explain the DCOM Architecture.

9. Explain the functions of Handling events on X-windows.

10. Describe the layers in X-windows Architecture.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) Describe the features of Windows programming.

Or

(b) Briefly explain Win Main function and message loop.

12. (a) Describe with examples MFC classes.

Or

(b) Discuss how message maps and event handling in done in MFC.

Turn over

13. (a) What is meant by CORBA ? Explain the features.

Or

(b) Briefly explain the functions of Stub and skeleton.

14. (a) Discuss with example the procedure for destroying CORBA objects.

Or

(b) Describe the steps for CORBA object creation in C++ with an example.

15. (a) Explain the Basic Architecture of X-windows systems in detail.

Or

(b) Describe with an example the steps for the creation of child windows.

(5 × 12 = 60 marks)

F 9151   (Pages : 2)   Reg. No..............................

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

Seventh Semester

Branch : Computer Science and Engineering/Information Technology

WEB TECHNOLOGIES (RT)

(Regular/Supplementary)

Time : Three Hours   Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. What are features of XML ?
2. What are attributes ?
3. Explain document type declaration in XML.
4. How we can store XML data in HTML ?
5. What are java beans components ?
6. What are features of Java beans ?
7. Explain request objects in JSP.
8. Discuss about scriptlets.
9. What is EJB ?
10. Explain about entity beans.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain the features of XML.   (6 marks)
    Write XML Vs HTML.   (6 marks)

Or

12. Write notes on :

    (a) Attributes of tags.

    (b) Entity references.

    (c) CDATA section.

(12 marks)

Turn over

13. Explain different applications of XML.

Or

14. How to create XML DTDs ?

(12 marks)

15. Explain different types of bean properties. How to create events in java beans ?

Or

16. How to create a bean into class ? How can we use it ?

(12 marks)

17. Define JSP. Explain templating, conditionals and loops in JSP.

Or

18. Explain how accessing can be done in beans via scriptlets.

(12 marks)

19. What is entity beans ? Discuss in detail the features of entity beans.

Or

20. What are the steps involved in creating and implementing interfaces ?

(12 marks)

[5 × 12 = 60 marks]

F 9182

Reg. No................................

Name................................

B.TECH. DEGREE EXAMINATION, NOVEMBER 2011

Seventh Semester

Branch—Computer Science and Engineering/Information Technology

MOBILE COMPUTING (Elective I) (RT)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer **all** *questions.*

Part A

Each question carries 4 marks.

1. Explain the function of physical layer in a wireless and mobile environment.

2. Explain DCA.

3. Explain Multimedia object transfer protocol.

4. Explain the transport mechanisms used in DAB.

5. List out the advantages of WLANs.

6. Compare 802.11 and 802.16.

7. Write notes on :

    (a) Compatibility.   (2 marks)

    (b) Transparency.   (2 marks)

8. Write note on Routing.

9. Explain WDP.

10. Write note on WTP class I.

[10 × 4 = 40 marks]

Part B

Each question carries 12 marks.

11. Write short notes on :

    (a) MCM.   (6 marks)

    (b) Advantages of Cellular systems.   (6 marks)

Or

12. With neat diagram, explain the simplified reference model.   (12 marks)

Turn over

(12 marks)

13. Write notes on Authentication and Encryption.

Or

(12 marks)

14. Explain the system architecture of GSM system.

15. Explain :

(6 marks)

(a) Infra red *vs* radio transmission.

(6 marks)

(b) Infra structure and adhoc networks.

Or

(12 marks)

16. Explain the reference model of ATM and handover Scenarios.

(12 marks)

17. Explain the Goals, assumptions and requirements of mobile IP.

Or

(12 marks)

18. Explain IPV$_6$.

(12 marks)

19. Explain HTTP.

Or

(12 marks)

20. Explain the usage of HTML.

[5 × 12 = 60 marks]