

G 1272

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Reg. No.....CS.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2012

Seventh Semester

Branch : Computer Science and Engineering/Information Technology.

OBJECT ORIENTED MODELLING AND DESIGN (RT)

(Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. What are the specialities of object oriented database systems?
2. Why constraints on inheritance are needed in OO based system implementation?
3. Discuss the importance of events and states in dynamic modelling.
4. Explain why functional models are used in a database system.
5. Discuss the top-down approach in database design process.
6. Discuss the problems in handling of global resources shared by many tasks.
7. Discuss the object based design principles.
8. Explain the models used in representing association between entities in the design process.
9. Show the UML diagram for representing iteration in the requirement phase of system design.
10. How the documentation of a test model of a ready to implement database is done using UML?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. With the help of an EER diagram explain how inheritance is handled in object oriented DBMS. State the various constraints that usually occur.

Or

12. What is meta data? How this is related to DDL? Discuss the meta data in object based RDBMS.
13. How states are used for dynamic modelling? Discuss nested state diagrams.

Or

Turn over

14. State the components of a data flow diagram. Draw and explain the important operations in a data flow diagram related to a savings bank account management.
15. Explain how the system requirement specification in object modelling is analyzed. Discuss the importance of iteration in this process.

Or

16. Explain the need for concurrency control in object database applications. Discuss the features of typical languages for concurrency control.
17. Compare the methodologies for various approaches of object design aimed at interoperability.

Or

18. Discuss how design optimization is done in object design by adjustment of inheritance and other control measures.
19. Explain Jacobson's Model of design. Draw a UML model for this case.

Or

20. Discuss why unified modelling language is commonly used for OO based design documentation. Draw the top levels of UML diagram needed for a library management application.

(5 × 12 = 60 marks)

Part B

Each question carries 12 marks

21. With the help of an ER diagram explain how inheritance is handled in object oriented DBMS. State the various constraints that usually occur.
22. What is meta data? How this is related to DDL? Discuss the meta data in object based DBMS.
23. How states are used for dynamic modelling? Discuss nested state diagrams.

Or

Turn over

B.TECH. DEGREE EXAMINATION, MAY 2012

Seventh Semester

Branch : Computer Science and Engineering

COMPUTER GRAPHICS (RT)

(Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. Explain the potential applications of Computer Graphics.
2. What are display processors ? Explain in detail.
3. Explain the principle of clipping.
4. Explain the concept of windowing.
5. Explain the features of 3D graphics in detail.
6. Write a note on B-spline curves.
7. What is 3D viewing ? Explain.
8. Explain the basic illumination models in detail.
9. What is Morphing ? Explain in detail.
10. Explain the principle of animation, with a neat sketch.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain in detail the basic concepts in Computer Graphics.
Or
12. Write technical notes on :
 - (a) Display files. (6 marks)
 - (b) Graphical input and output devices. (6 marks)
13. Explain in detail the principle of line clipping and polygon clipping.
Or
14. Compare and contrast 2D graphics and 3D graphics.

Turn over

15. Describe in detail the various 3D display methods.

Or

16. Explain the following in detail :—

(a) Spline representations.

(6 marks)

(b) 3D transformation.

(6 marks)

17. Explain the classification of visible, surface detection algorithms.

Or

18. Give an account on polygon-rendering methods.

19. Explain in detail the classification of fractals.

Or

20. Write short notes on :

(a) Raster Animation.

(6 marks)

(b) Applications of Morphing.

(6 marks)

[5 × 12 = 60 marks]

B.TECH. DEGREE EXAMINATION, MAY 2012**Seventh Semester**

Branch : Computer Science and Engineering

THEORY OF COMPUTATION (R)

(Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Mark

Part A*Answer all questions.**Each question carries 4 marks.*

1. Define a partial recursive function.
2. Explain the term uncountability.
3. State the formal definition of NFA.
4. Design an E-NFA for the regular expression $(0 + 1)^*$.
5. Explain the definition of a context free grammar.
6. Differentiate between left most and right most derivation.
7. Define a turing machine.
8. What is meant by a turing computable function ?
9. Explain a class P problem.
10. Differentiate between class NP and NP hard.

(10 × 4 = 40 marks)

Part B*Answer all questions.**Each question carries 12 marks.*

11. Define a set and a relation. What are the different properties of a relation ? (12 marks)
- Or
12. What is a primitive recursive function ? Show that the function $f(x, y) = x + y$ is primitive recursive.
 13. State the Pumping Lemma for regular languages. Prove that the language $L = \{0^n 1^n, n \geq 1\}$ is not regular.

(6 + 6 = 12 marks)

Or

Turn over

14. Explain any method to convert a DFA into a regular expression.

15. Design a PDA that accepts the language $L = \{0^n 1^m / n > m\}$.

Or

16. Explain the different steps involved in the reduction of a context free grammar.

17. Design a turing machine which performs the function $f(m, n) = m \div n$, ie proper subtraction of two integers, defined as $m \div n = m - n$ if $(m > n)$ otherwise 0.

Or

18. Explain in detail the Church's thesis.

19. Prove that the directed hamiltonian circuit problem is NP-complete.

Or

20. Briefly explain :

(a) NP-completeness.

(b) Satisfiability problem.

(6 + 6 = 12 marks)

[5 × 12 = 60 marks]

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, MAY 2012

Seventh Semester

Branch : Computer Science and Engineering

ADVANCED SOFTWARE ENVIRONMENTS (R)

(Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Explain with an example on event driven programming.
2. Explain Menus and Buttons in Windows programming.
3. What is the sequence of steps that take place when a MFC based windows program gets executed ?
4. Explain the CWinApp classes.
5. What are the features of CORBA? Explain.
6. Explain the steps for implementing CORBA server.
7. How do you destroy CORBA objects?
8. How CORBA object creation is done in C++?
9. What is a command line option? Explain.
10. Describe the steps for creating graphics context.

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. (a) Explain in detail the components of Windows API.

Or

(b) With examples, explain how window programming is different from ordinary programs.
12. (a) Discuss MFC features and advantages.

Or

Turn over

(b) Describe the steps for handling mouse and keyboard events.

13. (a) Discuss in detail the CORBA IDL.

Or

(b) Describe the fundamental concepts in distributed objects.

14. (a) Discuss in detail the steps for managing references at server.

Or

(b) With a neat diagram, explain CORBA Architecture.

15. (a) Explain the Basic Architecture and layers in Xwindows.

Or

(b) Write notes on :

(i) Xwindows programming.

(ii) Handling events.

(5 × 12 = 60 marks)

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B.TECH. DEGREE EXAMINATION, MAY 2012

Seventh Semester

Branch : Computer Science and Engineering/Information Technology

WEB TECHNOLOGIES (RT)

(Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Explain the concept of SGML.
2. What is entity reference?
3. Explain document type declaration in XML.
4. What is the need of element type declarations?
5. Explain the bound properties in Java beans.
6. What are the features of Java beans?
7. What is JSP?
8. How we can access beans via scriptlets?
9. What is entity beans?
10. What is EJB?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Write the differences between XML and HTML.

Or

12. Explain :
 - (a) Attributes of Tags.
 - (b) Entity reference.

(6 + 6 =12 marks)

Turn over.

13. Discuss in detail about the attribute types in XML.

Or

14. How one can store XML data in HTML document?

15. Explain in detail about the Java beans components.

Or

16. How to create events in Java beans?

17. Using an example, discuss how to create a JSP page.

Or

18. Explain Templating, conditional and loops in JSP.

19. Describe in detail about the types of beans.

Or

20. Discuss the features of entity beans.

[5 × 12 = 60 marks]

B.TECH. DEGREE EXAMINATION, MAY 2012

Seventh Semester

Branch : Computer Science and Engineering/Information Technology

MOBILE COMPUTING (Elective I) (RT)

(Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

Each question carries 4 marks.

1. Explain MCM.
2. Explain the following :
 - (a) Frequency planning.
 - (b) Infra structure needed.
3. Explain Authentication.
4. Explain the applications of Satellites.
5. List out the disadvantages of WLANs.
6. Explain the protocol architecture of IEEE 802.11
7. Explain reverse tunneling.
8. List the advantage of TCP with I-TCP.
9. Explain Caching.
10. Explain the different ways that WTA extends the basic WAE application model.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain cellular systems.

Or

12. Name the different layers used in wireless and mobile environment and explain each.

Turn over

13. Explain the DECT protocol layer with a neat diagram

Or

14. Explain DAB.

15. Explain the Bluetooth architecture.

Or

16. Explain MAC.

17. Explain Tunneling and Encapsulation.

Or

18. Explain mobile adhoc networks.

19. Explain www s/w architecture.

Or

20. Explain WTP.

(5 × 12 = 60 marks)