

F 3620

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Reg. No.....^{CS}.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2010

Seventh Semester

Branch—Computer Science and Engineering/IT

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 are links and association ? Give an example of a ternary association.
2. What is sample object model ?
3. Discuss the uses of data flow diagrams in object modelling.
4. Compare and contrast object dynamic and functional model.
5. What is concurrency control problem and mention a method to ensure correctness ?
6. Write notes on iterating the analysis.
7. Define physical packaging.
8. Explain briefly the various representations of an object.
9. What are the various views in UML ? Describe.
10. Explain the term "Notations and Models".

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. (a) Discuss in detail about the object oriented modelling concepts with examples. (12 marks)

Or

- (b) Discuss the use of generalization in object modelling. How multiple inheritance is handled. (12 marks)

- 12: (a) Write short notes on :

(i) Events and states. (6 marks)

(ii) Major and minor elements of object model. (6 marks)

Or

Turn over

- (b) With neat diagram explain about functional models and also discuss about functions of constraints. (12 marks)

13. (a) Describe the various architectural frameworks common in system. (12 marks)

Or

- (b) Discuss in detail about analysis in functional modelling. (12 marks)

14. (a) Explain in detail about design of association and the ways of documenting design objects in OO based design process. How version control is done ? (12 marks)

Or

- (b) Explain in detail about :
 (i) Object design algorithm with example. (6 marks)

- (ii) Implementation of control. (6 marks)

15. (a) Discuss the notations and models used in Booch's methodology. Explain the advantage. (8 marks)

- Discuss the difference between Booch and Jacobson methodology. (4 marks)

Or

- (b) Explain in detail analysis model and design model with neat diagram. (12 marks)

[5 × 12 = 60 marks]

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2010

Seventh Semester

Branch : Computer Science and Engineering/Information Technology

WINDOWS PROGRAMMING—(Elective I) (RT)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all the questions.

Each question carries 4 marks.

1. What are the basic features provided by VB language ?
2. What are the major properties and measurement to be set when working with forms ?
3. List out any *two* standard controls with proper example.
4. Mention the use of directory list box.
5. Write note on dialog controls.
6. Explain the significance of tree view control.
7. Explain the function of MCI control.
8. List out the different multimedia file format which can be used in any VB application.
9. Describe how clipboard help to transfer images and text between applications.
10. Describe the graphic methods and controls used in VB.

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. What is event driven programming ? Also with the help of examples explain how VB handles events ?

(12 marks)

Or

12. Explain the various datatypes and control statements supported by VB with the help of example.

(12 marks)

13. Write notes on the following controls :—

- (a) Frames.
- (b) File.
- (c) Drive.

(12 marks)

Or

14. Compare the features available in MDI with SDI.

(12 marks)

Turn over

15. Describe the various dialog controls with example.

(12 marks)

Or

16. How properties and methods are added to active-X control ?

(12 marks)

17. Explain the various multimedia controls in VB.

(12 marks)

Or

18. Discuss the methods and controls which support graphics in VB.

(12 marks)

19. How databases are accessed using DAO and RDO data control.

(12 marks)

Or

20. (a) How images are captured from screen ? Explain.

(6 marks)

(b) Discuss how mouse operations can be handled outside the program window.

(6 marks)

[5 × 12 = 60 marks]

(30 × 4 = 60 marks)

Part B

Each question carries 12 marks

11. What is event-driven programming? Also with the help of examples explain how VB handles events?

(12 marks)

12. Explain the various datatypes and control statements supported by VB with the help of examples.

(12 marks)

13. Write notes on the following controls -

- (a) Frame
- (b) File
- (c) Image

(12 marks)

(12 marks)

Time over

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2010

Seventh Semester

Branch : Computer Science and Engineering

THEORY OF COMPUTATION (R)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. What is meant by Computable and Non-computable ?
2. Define a grammar and what are various types of grammars.
3. What are regular sets ?
4. Draw a DFA for the regular expression $(a^* b^*)^*$.
5. Define Pumping Lemma for regular language.
6. Show that $\{a^n b a^n / n = 0, 1, 2, \dots\}$ is not regular.
7. Define PDA and what are the languages accepted by PDA.
8. What is meant by Halting of a TM ?
9. Differentiate Tractable and Intractable problems.
10. What is an NP hard problem. Give example.

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. Show that factorial of number is a primitive recursive function.

Or

12. (a) Show that multiplication is a computable function on the set of natural numbers.
(b) Discuss the computability of $f(x) = 1$ for x th digit of $Z = 3$ and $f(x) = 0$ otherwise Z is decimal expansion of $\pi = 3.14285714 \dots$
13. (a) Construct a DFA to accept the language $L = ((a/b)^* / (a b)^*)^*$.
(b) Show that $\{0^x / x \text{ is prime}\}$ is not content free.

Or

Turn over

14. Find a minimal DFA for the language $L = \{a^n b^m : n \geq 2, m \geq 1\}$.

15. Construct a PDA to accept $L = \{w \in \{a, b\}^* / w = wR\}$.

Or

16. Prove that content free language is closed under Union.

17. Design a Turing Machine to compute a function f where, $f : \sum_0^* \rightarrow \sum_0^*$, $\sum_0 = \sum_1 = \{a, b\}$, $f(w) = \bar{w}$, \bar{w} is the result of replacing an occurrence of a in w by b and vice versa.

Or

18. Explain Church's Thesis and its application. Also explain Godelization.

19. Show that halting problem of a Turing Machine is not NP-complete.

Or

20. What are complexity classes and tractable and intractable problems.

(5 x 12 = 60 marks)

Part B

Answer all questions. Each question carries 12 marks.

Or

11. Show that factorial of number is a primitive recursive function.

12. (a) Show that multiplication is a computable function on the set of natural numbers.
(b) Discuss the computability of $f(x) = 1$ for x th digit of $\pi = 3$ and $f(x) = 0$ otherwise. π is decimal expansion of $\pi = 3.14285714 \dots$

13. (a) Construct a DFA to accept the language $L = \{a^m b^n / m \geq n\}$.

(b) Show that $\{0^n / x \text{ is prime}\}$ is not content free.

Or

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2010

Seventh Semester

Branch—Computer Science and Engineering / I.T.

COMPUTER GRAPHICS (RT)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Answer **all** questions.

Part A

Each question carries 4 marks.

1. What are Interactive graphics system ?
2. Distinguish between Raster scan and vector scan display systems.
3. How does light-pen locate position on screen ?
4. What is the use of Windowing ?
5. Define Resolution and aspect ratio.
6. Explain Scaling and clipping.
7. Define Surface Rendering.
8. What is polygon-rendering method ?
9. Write the matrix form of the 3D rotation of a point through 30 degree in clock-wise direction about X-axis.
10. What are self-squaring Fractals ?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain the construction and working of Graphics Display unit.

Or

12. How will you classify the display devices used in Computer Graphics ?
13. Translate a point (12, 7) by 5 in x direction and 5 in y direction; scale by 2 and 1 in x and y direction, and rotate by 30° in clockwise. Find the final co-ordinates.

Or

Turn over

- 14. Obtain the reflection of the diamond shaped polygon, whose vertices are A(-1, 0), B (0, - 2), C (1, 0) and D(0, 2) about the line $y = x + 2$.
- 15. Enumerate and explain the 3D display methods.

Or

- 16. Explain the fundamental principles of 3D transformations.
- 17. Discuss the various methods of the visible surface detection algorithms.

Or

- 18. Explain the detailed principle of 3D rendering.
- 19. Explain the various animation techniques stressing Raster Animation and morphing methods.

Or

- 20. How to classify the Fractal image and explain methods of Fractal generation ?
(5 × 12 = 60 marks)

Part B

Each question carries 12 marks.

- 11. Explain the construction and working of Graphics Display unit.

Or

- 12. How will you classify the display devices used in Computer Graphics ?

- 13. Translate a point (12, 7) by 5 in x direction and 5 in y direction; scale by 2 and 1 in x and y direction and rotate by 30° in clockwise. Find the final co-ordinates.

Or

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F 3688

(Pages : 2)

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

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2010

Seventh Semester

Branch : Computer Science and Engineering

LAN TECHNOLOGY (Elective – I) (R)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 4 marks.

1. Name different LAN topologies. Discuss advantages and disadvantages of each.
2. With sketch, explain a ring topology used for LAN.
3. Differentiate slotted CSMA/CD and unslotted CSMA/CD.
4. Briefly explain FBM/PC network.
5. With block diagram, explain the function of bridges in LAN.
6. What is segment switching? Explain.
7. What is print spooler? Explain its working.
8. Explain the structure of a peer-to-peer network.
9. Discuss the security aspects in a LAN.
10. Discuss print queue and printing environment.

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. With diagram explain bus, star and mesh topologies used in LAN. List its features.

Or

12. What is FDDI? Explain transmission scheme of FDDI.
13. With block diagram, explain token ring MAC sublayer. Explain the operation of transmitter and receiver.

Or

14. What is DQDB? With structure, explain upstream and downstream file transfer.

Turn over

15. What is a HUB? Explain the operation of a repeater hub with configuration, topology and structure.

Or

16. Explain the operation of token ring configuration with :

- (a) Single hub;
- (b) Station coupling unit; and
- (c) Multiple hub.

17. Describe the networking and software applications of a peer-to-peer network.

Or

18. Explain evolution, challenges and functions of network operating systems.

19. Describe a network management system and its functions.

Or

20. Explain the terms physical and logical security of LAN. Give the condition of convergence of both.

(5 × 12 = 60 marks)

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. With diagram explain bus star and mesh topologies used in LAN. List its features.

Or

12. What is FDDI? Explain transmission scheme of FDDI.

13. With block diagram explain token ring MAC sublayer. Explain the operation of transmitter and receiver.

Or

14. What is DQDB? With structure, explain upstream and downstream file transfer.

Turn over

F 3690

(Pages : 2)

Reg. No.....

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2010

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. Discuss about Multicarrier modulation.
2. Write the goals of Mobile IP.
3. Explain LEO satellite system.
4. Explain the term "Frequency Reuse".
5. Write a note on Digital Video Boardcasting.
6. Discuss about Tunnelling and Encapsulation process.
7. Discuss in WML.
8. What is Mobile Computing ?
9. Write the features of WML.
10. What are Adhoc networks ?

(10 × 4 = 40 marks)

Part B

Each question carries 12 marks.

11. Explain Mobile Telephone System in detail with a neat diagram. (12 marks)

Or

12. Explain :

(a) Cellular systems. (6 marks)

(b) Advantages of mobile computing with an eg. (6 marks)

13. Explain with a neat diagram the system architecture of a GSM system. (12 marks)

Or

14. Explain the different satellite systems GEO and MEO. (12 marks)

Turn over

15. Discuss in detail the protocol layers of Bluetooth. (12 marks)

Or

16. (a) Compare 802.11 and 802.16. (6 marks)

(b) Discuss the handover scenarios of ATM. (6 marks)

17. Describe traditional TCP, Indirect TCP, snooping TCP and Mobile TCP transmissions in detail. (12 marks)

Or

18. Explain IPV6 in detail. (12 marks)

19. Describe the architecture of WAP.

Or

20. Explain the WWW system architecture briefly. (12 marks)

[5 × 12 = 60 marks]

Part B

Each question carries 12 marks.

11. Explain Mobile Telephone System in detail with a neat diagram. (12 marks)

Or

12. Explain: (a) Cellular systems. (6 marks)

(b) Advantages of mobile computing with an eg. (6 marks)

13. Explain with a neat diagram the system architecture of a GSM system. (12 marks)

Or

14. Explain the different satellite systems GEO and MEO. (12 marks)

Turn over

F 3647

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2010

Seventh Semester

Branch : Computer Science and Engineering

ADVANCED SOFTWARE ENVIRONMENTS (R)

(Regular/Supplementary)

Maximum : 100 Marks

Time : Three Hours

Part A

Answer all questions.

Each question carries 4 marks.

1. What is the first windows version OS ? What are features of it ?
2. What is meant by event driven programming ?
3. Explain MFC.
4. What are message maps ?
5. Explain distributed objects.
6. What are CORBA server ?
7. Discuss the exception handling.
8. What is DCOM Architecture ?
9. Define X-Windowing.
10. What are layers in X-windows ?

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. What is Windows programming and components of windows API ?
Or
12. How to create windows and the windows procedures ?
13. What is the life cycle of an MFC application and message maps ?
Or
14. Explain MFC windows and Handling mouse and keyboard.

Turn over

15. Discuss the features in CORBA.

Or

16. How to implement simple CORBA server and CORBA client ?

17. Make a comparative analysis of CORBA and DCOM Architectures.

Or

18. Compare the object creation in JAVA and C++ for CORBA.

19. What are the command line options and resources of X-window applications ?

Or

20. Explain X-windows client-servers and the topology with remote program applications.

(5 × 12 = 60 marks)

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2010

Seventh Semester

Branch—Computer Science and Engineering/Information Technology

WEB TECHNOLOGIES (RT)

(Regular/Supplementary)

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all the questions.

Each question carries 4 marks.

1. Write the features of SGML.
2. Write about accessing beans via scriptlets.
3. Explain JSP.
4. Explain about Attribute defaults.
5. Write the principle of creating Java Beans.
6. Discuss the basics of EJB.
7. Explain Entity References.
8. What are the features of Entity Beans ?
9. What are Scriptlets ?
10. Write the features of JavaBeans.

(10 × 4 = 40 marks)

Part B

Answer all questions.

Each question carries 12 marks.

11. (a) Explain the features of XML. (6 marks)
 - (b) Compare in detail XML and HTML. (6 marks)
- Or*
12. Discuss about the Attributes of Tags. (12 marks)
 13. (a) Explain the principle of storing XML data in HTML document. (6 marks)
 - (b) Discuss the different XML applications. (6 marks)

Or

Turn over

14. Explain the principle of creating XML DTDs. (12 marks)

15. Explain the steps to design Java Beans. (12 marks)

Or

16. What is Customisation ? Explain how custom property editors are provided. (12 marks)

17. (a) Explain about accessing beans via scriptlets. (6 marks)

(b) Write about reading and setting properties of Java Beans. (6 marks)

Or

18. Explain the principle of creating simple JSP pages in detail. (12 marks)

19. Discuss about stateful session beans and its development. (12 marks)

Or

20. Discuss the types of beans in detail. (12 marks)

[5 × 12 = 60 marks]

Part B

Answer all questions.
Each question carries 12 marks.

11. (a) Explain the features of XML. (6 marks)

(b) Compare in detail XML and HTML. (6 marks)

Or

12. Discuss about the Attributes of Tags. (12 marks)

13. (a) Explain the principle of storing XML data in HTML document. (6 marks)

(b) Discuss the different XML applications. (6 marks)

Or

Turn over