

F 4225

3

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2015

Seventh Semester

Branch : Computer Science and Engineering / Information Technology

OBJECT ORIENTED MODELLING AND DESIGN (RT)

(Old Scheme—Prior to 2010 Admissions—Supplementary/Mercy Chance)

Time : Three Hours

Maximum : 100 Marks

Part A

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

1. Describe the object oriented methodology models.
2. What are link attributes and role names ? Give *one* example each.
3. Explain scenarios and event traces.
4. Discuss state generalization.
5. List the steps involved in system design.
6. Explain the two types of interface formats.
7. What is meant by object design ?
8. Explain how design decisions are documented.
9. Give an illustration for synchronization in activity diagram.
10. Explain about active classes.

(10 × 4 = 40 marks)

Part B

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

11. Describe aggregation concurrency and concurrency within an object.
Or
12. Explain multiple inheritance with a suitable example.
13. Explain about process, data flow and data store in data flow diagrams
Or
14. Discuss the technique of identifying events and building a state diagram.
15. Describe analysis in dynamic modelling and functional modelling.
Or

Turn over

16. Explain steps in breaking a system into subsystem and identifying concurrency.
17. Describe the three basic approaches to implementing the dynamic model.

Or

18. Explain in detail the various stages of designing algorithms.
19. Describe UML class diagrams with symbols and notations.

Or

20. Explain Booch's method of macro and micro development approaches.

(5 × 12 = 60 marks)

F 4622

(Pages : 2)

Reg. No.....

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2015

Seventh Semester

Branch : Computer Science and Engineering

CS 01 07 01—WEB TECHNOLOGIES

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

*Answer all questions.
Each question carries 3 marks.*

1. What are character entities ?
2. Explain XML document structure.
3. What are perlscalars ?
4. Mention the origins and uses of PHP
5. How do rails work with databases ?

(5 × 3 = 15 marks)

Part B

*Answer all questions.
Each Question carries 5 marks.*

6. Explain ordered lists and unordered lists with an example.
7. What is DTD ? Give the declaration syntax for internal and external DTDs.
8. List and explain any *five* string functions in perl.
9. Explain about relational operators in PHP.
10. Describe the rails layout template.

(5 × 5 = 25 marks)

Part C

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

11. Discuss about the syntax and example of anchor tags and href tags.

(12 marks)

Or

Turn over

12. Explain CSS syntax using selector, property and value for assigning style properties. (12 marks)
13. (a) List the basic rules of XML. (6 marks)
(b) Explain the need for using document type definitions. (6 marks)

Or

14. With suitable examples explain simple and complex data types in XML Schema. (12 marks)
15. (a) Explain string functions in perl with suitable examples. (6 marks)
(b) Give the syntax and example of Foreach statement in Perl. (6 marks)

Or

16. Write a program to create a hash with a set of student-name and student-id pairs. Populate the hash with five sets of data. Prompt the user for student-id and print both the details. (12 marks)

17. Explain the two types of array in PHP with suitable examples. (12 marks)

Or

18. What is a Cookie ? Explain with PHP sample code how to create, read and delete a cookie. (12 marks)

19. Illustrate with neat diagrams and explain the traditional and ajax browser-server interactions. (12 marks)

Or

20. Explain how rails implements ajax in detail. (12 marks)

[5 × 12 = 60 marks]

F 4635

(Pages : 2)

Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2015

Seventh Semester

Branch : Computer Science and Engineering

CS 010 702—COMPILER CONSTRUCTION (CS)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Define phases of compiler.
2. What is recursive descent parsing ?
3. Define runtime stack.
4. Define ICG.
5. Define various types of errors.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Draw a DFD that accepts the four reserved words case, const and continue from c language.
7. Explain shift reduce parsing.
8. Discuss memory allocation in block structured languages.
9. Explain quadruples.
10. Discuss data descriptors.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. (a) Explain the tokens using regular expressions.

Or

- (b) Discuss the lexical analysis and its role.

Turn over

12. (a) Given the following grammar construct SLR parsing $X \rightarrow YX/Z$, $Y \rightarrow XY/W$ table for string ZWWZ.

Or

(b) Explain operator precedence parsing.

13. (a) Explain memory allocation strategies.

(b) Discuss the role of declaration statements in intermediate code generation.

14. (a) Explain machine dependent and independent code optimization technique.

Or

(b) Give the semantic rules for declarations in a procedure.

15. (a) Write a note on (i) cross compilers ; (ii) Incremental compilers.

(6 + 6 = 12 marks)

Or

(b) Explain the basic issues in code generation.

[5 × 12 = 60 marks]

F 4648

(Pages : 2)

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2015

Seventh Semester

Branch : Computer Science and Engineering

CS 010 703—COMPUTER GRAPHICS (CS)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Explain the concept of Translation.
2. Compare DDA algorithm with Bresenham's line drawing algorithm.
3. Explain backface detection method.
4. Write a note on Octrees.
5. Compare Raster scan and Random scan displays.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Explain 2D rotation.
7. Describe quadric surface method to represent 3D object.
8. Write a note on A-buffer method.
9. Explain basic illumination models.
10. Explain 2D reflection in detail.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Explain the graphical Input Devices.

Or

12. Explain the steps in Bresenham's line drawing algorithm.

Turn over

13. Describe Sutherland-Hodgeman Polygon clipping algorithm.

Or

14. Explain Cohen-Sutherland line clipping algorithm.

15. Briefly explain the 3D display methods.

Or

16. Explain Bezier curve representation technique and its properties.

17. Write a note on 3D viewing.

Or

18. Explain parallel projection and perspective projection of 3D objects.

19. Describe the various polygon rendering methods.

Or

20. Explain how are fractals classified with examples.

(5 × 12 = 60 marks)

F 4660

(Pages : 2)

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2015

Seventh Semester

Branch : Computer Science and Engineering

CS 010 704—OBJECT ORIENTED MODELING AND DESIGN (CS)

(New Scheme—2010 Admissions onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Describe object modelling.
2. What is an event and a state ?
3. How is a target system organised using system design.
4. What are the steps involved in object design.
5. Mention the purpose of use case diagrams.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Explain link attributes and role names.
7. Describe how operations are controlled ?
8. Differentiate between dynamic modelling and functional modelling.
9. List the steps to be performed by the designer during object design.
10. Describe the class notation with an example.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Describe the various stages involved in the object oriented methodology.

Or

12. Explain in detail about the three types of object oriented models.

Turn over

13. Describe process and data flows used in data flow diagrams.

Or

14. Explain the following : (i) Entry and Exit Actions ; (ii) Internal Actions.

15. Explain in detail the common architectural frameworks.

Or

16. Describe the handling of the boundary conditions of a system.

17. Explain the process of combining the three models to obtain operation on classes.

Or

18. Describe the approaches to implementation of control in object design.

19. Explain the primary goals in the design of unified modelling language.

Or

20. Illustrate the sequence diagram symbols and briefly explain the notations.

(5 × 12 = 60 marks)

F 4670

(Pages : 2)

Reg. No.....

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2015

Seventh Semester

Branch : Computer Science and Engineering

CS 010 705—PRINCIPLES OF PROGRAMMING LANGUAGES (CS)

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. What is explicit declaration and implicit declaration ?
2. What is names constants ?
3. Differentiate between while and do while statement.
4. Define Actual Parameter and formal Parameters.
5. What is Exception Handling ?

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Explain the attributes of a good language.
7. Write a note on Enumeration data types.
8. Describe briefly on unconditional branching.
9. With an example, briefly explain user defined overloaded operators.
10. Explain and write a program to calculate the sum of a vector of numbers in LISP.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Explain on separate compilation.

Or

12. Explain binding and binding times.

Turn over

13. What is a datatype ? Explain how elementary data types are specified and implemented.

Or

14. Explain Type Checking and Strong Typing.

15. Write short note on Iterative statements.

Or

16. Write an essay on Selective statements.

17. Explain simple call return subprograms.

Or

18. Explain Parameter Passing methods.

19. Explain the features of ADA. Also write an example to show the sum of an array.

Or

20. Explain the features of Prolog. Also write an example to calculate the sum of an array.

(5 × 12 = 60 marks)

F 4693

(Pages : 2)

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2015

Seventh Semester

Branch : Computer Science and Engineering/Information Technology

CS 010 706 L03/IT 010 706 L05—OPERATING SYSTEM KERNEL DESIGN
(Elective II) [CS, IT]

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. What is a microkernel ? Explain.
2. What is a system call ?
3. What are memory zones ?
4. What is a character device ? Explain.
5. What is the use of spin lock ?

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Explain process state.
7. Briefly explain page descriptors.
8. Explain file system mounting in Linux O.S. What is use of VFS ?
9. Explain Ext2 file system block allocation.
10. Explain briefly device driver registration.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each full question carries 12 marks.

11. (a) Explain Unix kernel model with neat diagram.

Or

- (b) Explain how Linux performs its time keeping.

Turn over

12. (a) Explain process, threads and process descriptor handling in detail.

Or

(b) Explain briefly different interprocess communication mechanism that Linux supports.

13. (a) Explain page frame management.

Or

(b) Explain page fault exception handler.

14. (a) Discuss the different VFS data structure.

Or

(b) Explain data block allocation in Linux O.S.

15. (a) Explain buffering strategies of device drivers.

Or

(b) Explain, writing of dirty buffer to disks.

(5 × 12 = 60 marks)

F 4695

(Pages : 2)

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2015

Seventh Semester

Branch : Computer Science and Engineering

CS 010 706 L06—CLIENT SERVER ARCHITECTURE AND APPLICATIONS
(Elective II) [CS]

(New Scheme—2010 Admission onwards)

[Regular/Supplementary]

Time : Three Hours

Maximum : 100 Marks

Part A

Answer all questions.

Each question carries 3 marks.

1. Define Client server computing.
2. What are the design issues of client server application.
3. Define multitasking.
4. What is synchronization ?
5. Define communications.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Write the functions of cross platform computing.
7. Discuss client server interactions.
8. Explain threads in detail.
9. Discuss context switching.
10. Explain interprocess communications.

(5 × 5 = 25 marks)

Part C

Answer all questions.

Each question carries 12 marks.

11. Write advantages and disadvantages of client server computing.

Or

12. Discuss client server database in detail.

Turn over

13. Discuss optimizing applications for client-server managements.

Or

14. Explain client server interaction protocol.

15. What are the advantage and drawbacks of multiple processes.

Or

16. How multiprogramming will differ from multitasking.

17. Discuss scheduling implemetnation in detail.

Or

18. Explain semaphore implementation in NT and Netware.

19. Explain client server security concepts.

Or

20. Write a note on building portable client server applications.

(5 × 12 = 60 marks)