

F 6757

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Reg. No.....

Name.....

B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

Seventh Semester

Branch : Computer Science and Engineering

CS 010 701—WEB TECHNOLOGIES [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. Give any *two* examples for HTML tags.
2. Why XML has been widely used as a language for a variety of applications ?
3. Outline the use of Common Gateway Interface.
4. Name the access modifiers in PHP.
5. What is AJAX ?

(5 × 3 = 15 marks)

Part B

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

6. Explain the parts of a style rule in CSS with an example.
7. "XSL is the bridge between XML and HTML". Elucidate.
8. Write a Perl program to accept a number, check whether the number is a prime number or not and print the result.
9. Write a PHP program to accept three numbers, find the greatest and print the result.
10. Outline the naming conventions in Rails with respect to model-view-controller design pattern.

(5 × 5 = 25 marks)

Part C

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

11. Explain with an example XHTML document structure.

Or

12. Write a detailed note on CSS font properties.

Turn over

13. Present an example of an HTML document and an XML document, and outline the similarities and differences between HTML and XML.

Or

14. What is an XML schema ? Develop an XML schema for a "Banking System". State the functional requirements you are considering.
15. (a) Write a Perl program to sort an array of 'n' numbers in ascending order. (6 marks)
(b) Explain with an example Hashes in Perl. (6 marks)

Or

16. Explain with examples pattern matching in Perl.
17. Explain with an example the control statements in PHP.

Or

18. Write a detailed note on cookies and sessions in PHP.
19. Appraise the features of Rails open source Ruby framework.

Or

20. Write a detailed note on Ajax on Rails.

[5 × 12 = 60 marks]

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

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. Express the following expression as a sequence of token after the lescical analysis phase
$$A = P (1 + r/n) nt.$$
2. What is viable prefix property ?
3. What is heap allocation ? Discuss its importance.
4. What is directed acyclic graph ? What are its uses ?
5. Outline the functionalities of getReg (I) function in the Code-generation Algorithm for an instruction I.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Define regular expressions and regular definition. Write a regular definition to represent date and time in the following format : DAY - MONTH -YEAR.
Example : 23 - JUN - 1997.
7. What is left factoring ? How can this be eliminated ?
8. What is type conversion ? When does a compiler perform type conversion ?
9. What is a flow graph ? Describe how to construct a flow graph from basic blocks.
10. Write about different types of errors and error handling in compiler.

(5 × 5 = 25 marks)

Turn over

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

11. (a) Why is it important to look ahead in a lexical analyzer. Suggest a scheme that can handle large look aheads safely.
- (b) Draw a transition diagram to represent relational operators in C.

Or

12. Describe the various phases of a compiler and tract it with the program segment
 $f - val = o - val + rate * 3.75.$
13. Show that the following grammar is LL (1) :
- $S \rightarrow Aa Ab | Bb Ba$
 $A \rightarrow t.$
 $B \rightarrow t.$

Or

14. (a) Consider the CFG and the string :

$$S \rightarrow SS + | SS * | a$$

$$aa + a^*$$

give a leftmost and a rightmost derivation for the string.

(6 marks)

- (b) Explain the working of Recursive-Descent Parser.

(6 marks)

15. Illustrate the parser stack implementation of Postfist SDTs (Syntax Directed Translation) for a desktop calculator.

Or

16. Write about procedure cells and different types of parameter passing methods.
17. Explain with suitable examples the various optimizations applied to basic blocks.

Or

18. Write a syntax directed definition for three address code generation of expressions.
19. Illustrate the various ways of implementing a symbol table.

Or

20. Explain target code generation from expression trees.

[5 × 12 = 60 marks]

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

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 5 marks.

1. Write a note on joysticks.
2. Write the Cartesian slope intercept equation for a straight line.
3. What are Bezier curves ?
4. Write a note on rendering.
5. Present an outline of Gouraud shading.

(5 × 3 = 15 marks)

Part B

Answer all questions

Each question carries 5 marks.

6. Outline the difference between raster-scan displays and random-scan displays.
7. Explain with an example two dimensional rotation of a straight line.
8. What are polygon tables ? Give example.
9. Present an outline of the classification of visible-surface detection algorithms.
10. Write a note on texture mapping.

(5 × 5 = 25 marks)

Turn over

Part C

Answer all questions

Each question carries 12 marks.

11. (a) Explain with a diagram the basic operation of a cathode ray tube. (8 marks)
(b) Write a note on flat panel displays. (4 marks)

Or

12. Write a detailed note on hardcopy devices.
13. Explain with an example the Bresenham's line drawing algorithm.

Or

14. What is line clipping ? Outline with an example the Cohen-Sutherland line clipping algorithm.
15. Explain with an example any *two* three dimensional transformations.

Or

16. (a) Explain with an example interpolation splines and approximation splines. (6 marks)
(b) Write a note on Bezier surfaces. (6 marks)
17. (a) Illustrate with an example transformation from world to viewing co-ordinates. (8 marks)
(b) Write a short note on parallel projections. (4 marks)

Or

18. Explain with an example scan-line method for visible-surface detection.
19. What is dithering ? Present an outline of dithering techniques

Or

20. What is a fractal ? Classify fractals and discuss the same.

[5 × 12 = 60 marks]

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B.TECH. DEGREE EXAMINATION, NOVEMBER 2017

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 an interpreter ? Outline the advantages in implementing a language with a pure interpreter.
2. What is a data type ? Give example.
3. Give an example for conditional targets on assignment statements in Perl.
4. Outline the difference between a procedure and a function.
5. What is recursion ? Give example.

(5 × 3 = 15 marks)

Part B

Answer all questions.

Each question carries 5 marks.

6. Write a note on functional programming.
7. When a programming language is said to be strongly typed ? Discuss.
8. What is referential transparency ? What are the advantages of referential transparency ?
9. Outline the design issues for subprograms.
10. Appraise the reasons why implementing subprograms with stack-dynamic local variables is more difficult than implementing simple subprograms.

(5 × 5 = 25 marks)

Turn over

Part C

Answer all questions.

Each full question carries 12 marks.

11. "The design and evaluation of a particular programming language is highly dependent on the domain in which it is to be used". Elucidate with an example.

Or

12. Appraise the influence of computer architecture and programming design methodologies on language design.

13. What is scope of a variable ? Explain with an example static scope and dynamic scope,:

Or

14. What is a heap ? Appraise with an example heap management.

15. "The operator precedence and associativity rules of a language dictate the order of evaluation of its operators". Elucidate with an example.

Or

16. (a) Explain with an example two-way selection statements and multiple-selection statements.

(6 marks)

- (b) What is an iterative statement ? Outline the design issues for iterative counter-controlled statements.

(6 marks)

17. What is parameter passing ? Explain with an example pass-by-value and pass-by-result.

Or

18. Write a note on generic subprograms and appraise the generic functions in C++.

19. What are nested subprograms ? Explain with an example.

Or

20. What is exception handling ? Explain with an example exception handling in C++.

[5 × 12 = 60 marks]