

D 90006

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Name..... JLUDA MP

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**THIRD SEMESTER B.TECH. (ENGINEERING) [14 SCHEME] DEGREE  
EXAMINATION, NOVEMBER 2015**

**CS/IT 14 306—SWITCHING THEORY AND LOGIC DESIGN**

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer any eight questions.*

1. Prove :  $X.Y + X'.Z + Y.Z = X.Y + X'.Z$ .
2. Simplify the following expression using Boolean Algebra :-
  - (i)  $(A B + A (C D + C D'))$
  - (ii)  $(B C' + A' D) (A B' + C D')$
3. Design a 8 to 3 encoder with proper diagram and logic diagram.
4. Implement a Boolean expression  $F(A, B, C) = \sum m(1, 2, 6, 7)$  using approximate Multiplexers.
5. Write short notes about ripple counters.
6. List the applications of Flip-flops.
7. Write notes on Fault diagnosis and tolerance.
8. Describe the fault classes models in detail.
9. Explain with example how don't care conditions are implemented in K map minimization.
10. Write notes on EPROM and EEPROM.

(8 × 5 = 40 marks)

**Part B**

11. Explain the following with suitable example :
  - (a) Quine McClusky Algorithm.
  - (b) Generalization of DeMorgan's laws.

*Or*

12. Discuss in detail about switching expressions with suitable examples.
13. Design the carry look ahead adder for a 4 bit binary number.

*Or*

14. ~~What is a data selector ? Design a 16 : 1 MUX using 4 : 1 MUX with relevant diagrams and explanations.~~
15. Explain with neat diagrams and tables about different Flip-flops.
- Or*
16. Explain excitation table for the various types of Flip flops.
17. Explain the different fault tolerance techniques in detail.
- Or*
18. Write detailed notes on Fault diagnosis and testing.

(4 × 15 = 60 marks)

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**THIRD SEMESTER B.TECH. (ENGINEERING) [14 SCHEME] DEGREE  
EXAMINATION, NOVEMBER 2015**

**CS/IT 14 303—COMPUTER ORGANIZATION AND DESIGN**

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer any eight of the following questions.*

1. ✓ 1 Enumerate the basic building blocks of a computer.
- 2 Write the characteristics of RISC processor.
- ✓ 3 Distinguish between signed and unsigned number.
- ✓ 4 What are the main components of ALU ?
- ✓ 5 What is a data path ?
- ✓ 6 What is an exception ?
- ✓ 7 Define the term 'polling'.
- 8 Distinguish between synchronous and asynchronous I/O controllers.
- ✓ 9 Define the various hazards in computer architecture.
- ✓ 10 How does cache memory improve the system performance ?

(8 × 5 = 40 marks)

**Part B**

✓ II (a) Explain in detail with necessary examples, various addressing modes.

Or

(b) Discuss in detail about various bus structures in computers.

✓ III. (a) Explain in detail about the process of performing addition and subtraction in computer architecture.

Or

(b) Elaborate in detail about floating point representation and arithmetic.

✓ IV. (a) Explain in detail about single and multi-cycle implementations.

Or

**Turn over**

- (b) Explain in detail about pipeline hazards.
- V. (a) With a neat diagram explain in detail about common framework in memory hierarchy.
- Or
- (b) Discuss in detail about the working of Input-Output interfaces.

(4 × 15 = 60 marks)

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**THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE [14 SCHEME]  
EXAMINATION, NOVEMBER 2015**

**EN 14 302—COMPUTER PROGRAMMING IN C**

(Common to all Branches)

Time : Three Hours

Maximum : 100 Marks

**Part A**

*Answer any eight questions.  
Each question carries 5 marks.*

1. What is the function of CPU in a Computer ?
2. List down the features of the third generation computers.
3. Describe the functions of operating system.
4. In what way switch statement differ from an if statement ?
5. With a suitable program in 'C' illustrate 'if' statement.
6. Main is a user-defined function. How does it differ from other user-defined functions ?
7. Write a program in 'C'. Which will read a text and count all occurrences of a particular word ?
8. Explain the need for array variables.
9. Explain Nested structure and array of structures.
10. What is a pointer ? How it is initialized ?

(8 × 5 = 40 marks)

**Part B**

*Answer all questions.  
Each question carries 15 marks.*

11. With a neat sketch, explain the memory hierarchy. Explain the different secondary memory in a computer.

*Or*

12. Briefly explain the following :—

(i) LAN.

(ii) WiFi.

13. Describe the most commonly used input and output operators in 'C'.

*Or*

14. With suitable example, explain any three commonly used input and output functions in 'C'.

**Turn over**

15. Explain in detail the parameters passing mechanism and discuss the different cases.

*Or*

16. What are arrays? With suitable program illustrate two dimensional arrays. Write down the general form of multidimensional arrays.

17. Write a program using pointers to read in an array of integers and print its elements in reverse order.

*Or*

18. Illustrate the use of putW and getW functions. Write a program to copy the contents of one file into another.

(4 × 15 = 60 marks)

