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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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Name.....

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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)

