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Name.....

Reg. No.....

**THIRD SEMESTER B.TECH. (ENGINEERING) [14 SCHEME] DEGREE
EXAMINATION, NOVEMBER 2016**

IT/CS 14 306—SWITCHING THEORY AND LOGIC DESIGN

Time : Three Hours

Maximum : 100 Marks

Part A

Answer any eight questions.

1. Minimize $F = \Sigma (0, 1, 2, 3, 4, 6, 7, 8, 9, 11, 15)$ using K map.
2. Prove : $X.Y + X'.Z + Y.Z = X.Y + X'.Z$
3. Discuss about Parity generators and checkers.
4. Draw the logic circuit diagram for a binary adder/sub-tractor.
5. Explain triggering of flip-flops.
6. Explain D and T flip-flops and the difference.
7. Write notes on Fault diagnosis and tolerance.
8. Describe the fault classes models in detail.
9. Minimize $F(A, B, C, D) = \Sigma (0, 2, 4, 5, 6, 7, 8, 10, 13, 15)$ using K map.
10. Design a 8 to 3 encoder with proper diagram and logic diagram.

(8 × 5 = 40 marks)

Part B

11. Discuss in detail about switching expressions with suitable examples.

Or

12. Simplify the Boolean function, F together with the don't care conditions, d in
 - (a) Sum of Products form.
 - (b) Product of Sum form.

$$F(w, x, y, z) = \Sigma (2, 3, 4, 5, 6, 7, 11, 14, 15)$$

$$D(w, x, y, z) = \Sigma (0, 8, 9).$$

13. What is a data selector? Design a 16 : 1 MUX using 4 : 1 MUX with relevant diagrams and explanations.

Or

Turn over

14. Design a 5 to 32 decoder using 3 to 8 decoder and provide necessary block diagrams.
15. Design a Binary counter with detailed logic diagram.
- Or*
16. Show that a JK Flip-flop can be converted to a D flip-flop with an inverter between the J and K inputs.
17. Discuss in detail about Test generation methods.
- Or*
18. Explain path sensitization method and Boolean difference method.

(4 × 15 = 60 marks)

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**THIRD SEMESTER B.TECH. (ENGINEERING) [14 SCHEME] DEGREE
EXAMINATION, NOVEMBER 2016**

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 a Sector in a hard disk ? why we need of it ?
2. Draw a block diagram of a memory which has 8 words and 4 bits each.
3. Discuss the facilities provided by an operating system to a user.
4. State memory requirements for each data types in 'C'.
5. With syntax and a program illustrate the use of while statements in 'C'.
6. Explain with one example how pointers are used in place of arrays.
7. What are header files ? Explain their functions.
8. Discuss user defined functions with examples.
9. Explain file processing in 'C'.
10. Explain how functions can be used to swap contents of two variables using pointer.

(8 × 5 = 40 marks)

Part B

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

11. Explain the following :
 - (i) Machine language.
 - (ii) Assembly language.
 - (iii) High level language.

Or

12. What is LINUX ? What are the functions of BIOS in PCs ? Why is BIOS stored in a ROM ?
13. Differentiate between break and Continue Statements with Suitable programme.

Or

14. Write a C program to reverse a number and to check the number is a palindrome.

Turn over

15. Explain local variables and global variables. Write a function to compute the average of sum of squares of 'n' numbers. Write the main program also.

Or

16. Write a C program to find the second largest number in a given array of number n . What are arrays? Explain how they are declared?
17. Explain file processing in 'C'. What is error handling in file?

Or

18. Write a function using pointers to add two matrices and to return the resultant matrix to the calling function.

(4 × 15 = 60 marks)



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