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**THIRD SEMESTER B.TECH (ENGINEERING) DEGREE [2014 SCHEME]  
EXAMINATION, NOVEMBER 2017**

Computer Science/Information Technology Engineering  
IT/CS 14 303—COMPUTER ORGANIZATION AND DESIGN

Time : Three Hours

Maximum : 100 Marks

*Answer all questions. Draw suitable diagrams where necessary.*

**Part A**

1.  Enumerate the various structures of Bus.
2. What do you mean by Accumulator ?
3.  What is the difference in terms of memory space occupied between a signed and unsigned number ?
4.  What is the method to represent floating point Arithmetic ?
5.  What is a processor ?
6.  Bring out the benefits of Multiprogramming.
7. Enumerate the types of Memory.
8. Write the characteristics of I/O controllers.
9.  List the various addressing modes in Computer architecture.
10. Differentiate between Synchronous I/O and Asynchronous I/O.

(8 × 5 = 40 marks)

**Part B**

1. (a) Explain in detail about various bus structures of Computers.  

*Or*

(b) Discuss in detail about instruction sequencing and instruction sets in a Computer system.
2. (a) Explain in detail about the process of performing addition and multiplication in Computer architecture.  

*Or*

(b) Explain in detail about the process of performing logical operations in a Computer system.

**Turn over**

IV (a) Explain in detail about the process of simple cycle implementations.

Or

(b) Explain in detail about various pipeline hazards.

V (a) With a neat diagram explain in detail virtual memory and cache.

Or

(b) Discuss in detail about various interfaces in I/O devices.

(4 × 15 = 60 marks)

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**THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE (2014 SCHEME)  
EXAMINATION, NOVEMBER 2017**

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

Time : Three Hours

Maximum : 100 Marks

**Part A**

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

1. Why do we have a variety of memories in a computer ?
2. Explain how data is organized in a floppy disk.
3. What details are to be specified by an instruction to a computer ?
4. What are the data types in C ? Explain.
5. With syntax and a program illustrate the use of 'if' statements in 'c'.
6. What is an array ? Explain how it is different from an ordinary variable.
7. Discuss brief in functions with example.
8. Write a 'C' program to find the value of the factorial of a number 'n' (integer).
9. Write a function to compute the average of sum of squares of 'numbers'.
10. What is meant by the following terms :
  - (i) Nested structure.
  - (ii) Array of structures.

(8 × 5 = 40 marks)

**Part B**

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

11. Draw a flowchart to find the sum of the series  $1 + 3 + 5 + 7 + \dots + n$ . Explain the main characteristic of a memory cell.

*Or*
12. Differentiate between if . . . else and else . . . if statement. Explain break statement in 'C'.
13. What is an operating system ? Why a computer need it ? List the facilities provided by it to a user. What are the functions of BIOS in PC's ?

*Or*
14. Discuss briefly about various internet working devices. What is WiFi ?

**Turn over**

15. Write a function space ( $x$ ) that can be used to provide a space of 'x' positions between two output numbers. Explain how does the function 'main' differ from other user-defined functions.

*Or*

16. Explain how does a structure differ from an array. Write a program to illustrate the comparison of structure variables.
17. Write a program to copy the contents of one file into another. How does an append mode differ from a write mode ?

*Or*

18. Explain how functions can be used to swap contents of ten variables using pointer. Write a C program to find the sum of all elements of an array using pointers.

(4 × 15 = 60 marks)

