

TDC Even Semester Exam., 2019

COMPUTER SCIENCE

(Honours)

(6th Semester)

Course No. : BCSH-603

(System Programming)

Full Marks : 35

Pass Marks : 12

Time : 2 hours

*The figures in the margin indicate full marks
for the questions*

Answer **five** questions, selecting **one** from each Unit

UNIT—I

1. (a) What are the advantages of the IBM 360 machine's multiple register scheme over machines with fewer or specialized registers? 2
- (b) Draw and explain the different data formats for the system 360. 5

J9/1565

(Turn Over)

2. (a) Draw the structure of the CPU for von Neumann machine and describe its components. 5
- (b) Write the advantages of using assembly language over machine language. 2

UNIT—II

3. (a) Give an overview of Pass I of a two-pass assembler with neat diagram. 5
- (b) What is the utility of symbol table? 2
4. (a) What features of assembly language require us to build a two-pass assembler? 2
- (b) Given the following source program :

```
JOHN START 100
      USING *, 15
      L      1, FIVE
      A      1, FOUR
      ST     1, TEMP
FOUR   DC    F 4
FIVE   DC    F 5
TEMP   DS    1 F
      END
```

Show the content of symbol table at the end of Pass I. 5

J9/1565

(Continued)

(3)

UNIT—III

5. (a) Describe the input and output of the macroprocessor with an example. 5
(b) An assembly language program performs a certain action at 10 places. Under what conditions would you code this action as a macro? 2
6. (a) What is meant by macroexpansion? Define the types of macroexpansion. 1+2=3
(b) What are the assembler directives used for macrodefinition? Define them. 2
(c) What are the data structures used by the macroprocessor? 2

UNIT—IV

7. (a) Explain the design of an absolute loader. 5
(b) List two advantages of binding at execution time over binding at load time. 2
8. (a) Briefly explain the design of direct linking loader. 5
(b) What does a relocating loader do? 2

(4)

UNIT—V

9. Show the main functions of each phase of compilation with a suitable assignment statement as an example. 7
10. (a) What is a parser? Name two different parsers. 2+1=3
(b) What are the different forms of intermediate code? Show any one with an example. 1+3=4
