UG Even Semester (CBCS) Exam., May—2017

COMPUTER SCIENCE

(6th Semester)

Course No. : MCS–603 (C)

(System Software)

Full Marks : 75

Pass Marks : 30

Time : 3 hours

The figures in the margin indicate full marks for the questions

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

UNIT—I

1. *(a)* Compare between SIC machine and SIC/XE machine. 5

(b) Explain the addressing modes of SIC machine with suitable examples. 4

(c) Explain the functions of various registers in VAX architecture. 5

(d) What is the meaning of instruction ADDW2? 1

2. *(a)* Compare between CISC machine and RISC machine. 5

(b) Explain the data formats of ultra SPARC architecture. 4

(c) Write a short note on Cray T3E architecture. 5

(d) What do you mean by delayed branches? 1

UNIT—II

3. *(a)* Write a machine language program to add 1 to 10 using LOOP. 5

(b) Distinguish between the following : 2×2=4

(i) BCT and BNE

(ii) DS and DC

(c) Explain the purposes of Pass 1 and Pass 2 in assembler. 6

4. *(a)* Write an assembly language program to perform sorting. 5

(b) Establish the interrelation between databases of Pass 1 and Pass 2. 6

(c) Compare between machine-op-table (MOT) and pseudo-op-table (POT). 4

UNIT—III

5. *(a)* What is macro? What do you mean by macro processor? 1+2=3

(b) Write a macro to find larger between two numbers. 4

(c) Explain the macro definition table (MDT). 4

(d) What are the advantages and disadvantages of incorporating the macro processor into Pass 1? 4

6. *(a)* What do you mean by 'dummy argument' in macro instruction? What are the different types of arguments? Explain with examples. 1+3=4

(b) What are the basic tasks of macro processor? 4

(c) What are the disadvantages of two-pass macro processor? 3

(d) Explain the purposes of MDI and MDLC variables in single-pass macro processor. 4

UNIT—IV

7. *(a)* What are the limitations of 'compile-and-go' louder? 3

(b) Explain the uses of EXTRN and ENTRY pseudo op with the help of suitable examples. 6

(c) What is binder? 1

(d) Explain the external symbol dictionary card. 5

8. *(a)* What do you mean by overlay structure of subroutines? Give example. 2+1=3

(b) What are the basic informations must be available to direct linking loader? 5

(c) What are the different types of address constant? 3

(d) What is the difference between Global External Symbol Table (GEST) and Local External Symbol Array (LESA)? 4

UNIT—V

9. *(a)* What do you mean by compiler? What are the different phases of compiler? Explain with the help of a diagram. 2+6=8

(b) What are the different databases used by lexical phase of compiler? 5

(c) What are the rules for converting an arithmetic statement into a parse tree? 2

10. *(a)* What do you mean by machine independent phase and machine dependent phase? 3

(b) What are the different types of databases used by the compiler? 7

(c) Write a short note on YACC compiler. 5

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