System Programming Paper – V

P. Pages : 2

Time : Three Hours

|| *0155* ||

KNT/KW/16/7297

Max. Marks :80

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Notes : 1. All questions carry marks as indicated.
2. Solve Question 1 OR Questions No. 2.
3. Solve Question 3 OR Questions No. 4.
4. Solve Question 5 OR Questions No. 6.
5. Solve Question 7 OR Questions No. 8.
6. Solve Question 9 OR Questions No. 10.
7. Solve Question 11 OR Questions No. 12.
8. Due credit will be given to neatness and adequate dimensions.
9. Assume suitable data whenever necessary.
10. Illustrate your answers whenever necessary with the help of neat sketches.
11. Use of non programmable calculator is permitted.

1. a) Explain the instruction format of IBM 360. **5**

b) Explain Pass 1 of Assembler in detail with the help of flowchart and databases. **8**

OR

2. a) For the following ALP show its symbol table, literal table, base table and generated machine code: **8**

```
TEST      START
BEGIN     BALR      15,0
          USING     BEGIN +2, 15
          SR        4,4
          L         3, = F '10'
LOOP      L         2, DATA (4)
          A         2, = F '49'
          ST        2, DATA (4)
          A         4, = F '4'
          BCT       3, *-16
          BR        14
DATA      DC        F '1,2,3,4'
          END
```

b) Differentiate between: **5**
i) Open subroutine and closed subroutine. ii) Pure procedure and Impure procedure.

3. a) What is the use of conditional macro calls? **3**

b) Explain the necessity of stack for implementing macro call within macro definition. **5**

c) What databases are used by the two passes of macro processor? **5**

OR

4. Explain in detail the two pass macro processor with the help of neat and clean flowchart. What macro facilities are restricted in this design? **13**

5. a) Write short notes on: **8**
i) Absolute loader. ii) Binders and Module Loader.

	b)	Explain in detail Dynamic Linking and Dynamic Loading.	6

<div align="center">OR</div>

6.	a)	What are the basic functions of Loader? Explain.	3

	b)	Show the entries in ESD, TXT and RLD cards for the following program:	11

```
            JOHN        START
                        EXTERN      SUM, DATA
                        ENTRY       LOOP, POINTER
                        BALR        15,0
                        USING       *,15
                        SR          4,4
                        L           1, FOUR
                        A           2, FOUR
                        ST          2, FOUR
                        BR          14
            FOUR        DC          F '4'
            LOOP        DC          A (SUM + 4)
            POINTER     DC          A (LOOP-DATA)
                        DC          A (POINTER-LOOP)
                        DC          A (POINTER)
                        END
```

7.	a)	Explain in detail the format of common object file, in detail.	8
	b)	Write short note on Source Code Control System (SCCS).	5

<div align="center">OR</div>

8.	a)	Explain make and Link Editor.	5
	b)	Explain in detail storage classes.	4
	c)	What is the structure of COFF symbol table? Explain.	4

9.	a)	Explain the steps in installation of Unix device drivers in detail.	8
	b)	Design a device driver for handling a RAM disk.	5

<div align="center">OR</div>

10.	a)	Explain the following entry point and routine for device driver of a line printer: i) init ii) Lpwork iii) Open	6
	b)	Differentiate between Character Driver and STREAM Driver.	7

11.	a)	What is compiler? Explain various phases of compiler.	8
	b)	Write short note on Regular Expression.	6

<div align="center">OR</div>

12.	a)	What is cross compiler? How does it use bootstrapping concept?	6
	b)	How tokens are recognized by lexical phase? Explain in detail.	8

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