B.E. (Computer Science Engineering) Fourth Semester (C.B.S.)

System Programming Paper – V

P. Pages : 2

Time : Three Hours

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* 0 7 7 6 *

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. Assume suitable data whenever necessary.

1. a) What is the difference between: **10**
   i) Procedure and Processor.   ii) Procedure and program.
   iii) Multiprocessing and multiprogramming. iv) Open subroutine and closed subroutine.
   v) Pure code and Impure code.

   b) Differentiate between user viewpoint and system viewpoint for design of operating system. **4**

OR

2. a) Explain general machine architecture of IBM 360|370. **5**

   b) Explain the following instructions: **3**
   i) USING   ii) EXTERN   iii) BALR.

   c) Explain various instruction formats of IBM 360. **6**

3. a) Explain with flowchart simple onepass macro processor. **8**

   b) What are the features of macro facility? **5**

OR

4. For the following program show MNT, MDT, ALA and expanded assembly language **13**
   program.

```
            MACRO
            STORE       & ANS
            ST          1, & ANS
            MEND
            MACRO
            TRY         & ADD, & DEST
            SR          1, 1
            MACRO
            & ADD       & A, & B
            L           1, & A
            A           1, & B
            MEND
& DEST      DS          F
            MEND
ARITH       START       O
            USING       *, 15
            TRY         PLUS, RESULT
            PLUS        N₁, N₂
            STORE       RESULT
N₁          DC          F'4'
N₂          DC          F'5'
            END
```

5.	a)	Draw a detailed flowchart for pass-2 of Direct Linking Loader of IBM 360 m/c.	**7**

	b)	Write short notes on **any two**.
		   i) Compiler and Go Loader.
		   ii) Dynamic Linking and Dynamic loading.
		   iii) Absolute Loader.
			6

OR

6.	a)	Explain the term dynamic Loading & dynamic Linking with suitable example.	**6**
	b)	What are the advantages of dividing loader into two separate programs viz: i) Binder ii) Module Loader.	**3**
	c)	Explain the formats of GEST and LESA of Direct Linking loader.	**4**

7.	a)	Explain coff symbol table and string table.	**7**
	b)	Explain the concept of storage classes.	**6**

OR

8.	a)	What is symbolic debugger? Explain in brief.	**5**
	b)	Write short notes on: i) Source code control system. ii) Link Editor.	**8**

9.	a)	Explain various sections involved in line printer driver.	**8**
	b)	What are the major design issues of Unix device driver? Explain.	**6**

OR

10.	a)	Explain in detail different types of windows device drivers?	**8**
	b)	What is Device Driver? Explain the necessity of Device Driver.	**6**

11.	a)	What are the different phases of compiler? Explain in brief.	**8**
	b)	Explain cross compiler and boot strapping.	**5**

OR

12.	a)	Explain YACC in detail.	**4**
	b)	List reasons for separating the analysis phase of compiling into lexical analysis and parsing.	**3**
	c)	What is compiler? Explain in brief the various databases used in Lexical phase of compiler.	**6**

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