B.E. Sixth Semester (Computer Engineering) (C.B.S.)
System Software

P. Pages : 3

Time : Three Hours

0113

KNT/KW/16/7416

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.
9. Illustrate your answers whenever necessary with the help of neat sketches.

1. a) Why do assembler needs two passes over the source program? What will be the restrictions if we want to have a One pass assembler? How problem of forward reference is handled in one – pass assembler? **6**

   b) Draw and explain general machine structure. **7**

OR

2. a) Discuss databases used in pass – 1 and pass – 2 of two pass assembler with their format. **6**

   b) For the following assembly language program show variable table entries and generated machine code. **7**

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
	LTORG	
DATA	DC	F' 1, 2, 3, 4, 7, 3, 2, 6, 8'
	END	

3. For the following assembly language program show   **13**

    a) The MDT

    b) The MNT and

    c) The expanded assembly language programm.

	MACRO	
	STORE	& ANS
	ST	1, & ANS
	MEND	
	MACRO	
	PERFORM	&ADD, &DEST
	SR	1,1
	MACRO	
	&ADD	&A, &B
	L	1, &A
	A	1, &B
	MEND	
&DEST	DS	F
	MEND	
ARITH	START	0
	USING	*, 15
	PERFORM	PLUS, RESULT
	PLUS	NUM1, NUM2
	STORE	RESULT
NUM1	DC	F'4'
NUM2	DC	F'5'
	END	

OR

4. a) Define macro and explain the features of macro facility provided by the macro processor of IBM 360/370   **9**

    b) Explain the use of MDLC and MDI in the algorithm for one – pass macro processor handling macro definition within macro.   **4**

5. a) What are different loading schemes? explain with example.   **7**

    b) What are the four cards used by direct linking loader? Give details of each.   **6**

OR

6. a) What are the functions of lender? how they are performed in relocating lender?   **7**

    b) Write short note on dynamic loading and linking.   **6**

7. a) Explain the phases of compiler?   **7**

    b) What are compiler writing tools.   **6**

OR

8.	a)	What are the errors that may encounter in each phase of a compiler.	**7**
	b)	Explain in brief top – down and bottom – up parsing.	**6**
9.	a)	Define device driver? What the steps involved in installation of device driver.	**7**
	b)	Explain the working of device driver for line printer.	**7**

OR

10.	a)	What are different types of device driver? Explain any two in detail.	**7**
	b)	Compare device driver in unix vs device driver in windows.	**7**
11.	a)	Draw the block diagram of Intel® Net Burst micro architecture.	**7**
	b)	What are basic modes of operation of Intel IA – 32 architecture and Intel 64 architecture?	**7**

OR

12.	a)	Explain Intel IA – 32 Memory models.	**7**
	b)	Write short note on General system and application programming Register.	**7**

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