

M.S.Ramaiah Institute of Technology  
Department of Information Science & Engineering  
(Autonomous Institute, affiliated to VTU)  
**System Software (IS602)**

**MOBILES ARE BANNED**

CIE TEST No: II  
**C**

Semester: VI

Sections: **A, B & C**

Max. Marks: 30  
01.04.2014

Time: 12:30-1:30PM

Date:

**Answer the following.**

	<b>PART-A</b>	<b>Marks</b>																								
1	<p>Discuss why the bit-mask method of specifying program relocation is efficient than the modification record method for the SIC program. Write the bit-mask for the following object code of SIC program.</p> <table> <tr> <th><u>Loc</u></th><th><u>Source Statements</u></th><th><u>Object code</u></th></tr> <tr> <td>0015</td><td>ENDFIL LDA EOF</td><td>00002A</td></tr> <tr> <td>0018</td><td>STA THREE</td><td>0C0039</td></tr> <tr> <td>001B</td><td>LDL ZERO</td><td>080033</td></tr> <tr> <td>001E</td><td>EOF BYTE C'EOF'</td><td>454F46</td></tr> <tr> <td>0021</td><td>THREE WORD 3</td><td>000003</td></tr> <tr> <td>0024</td><td>ZERO WORD 0</td><td>000000</td></tr> <tr> <td></td><td>END</td><td></td></tr> </table>	<u>Loc</u>	<u>Source Statements</u>	<u>Object code</u>	0015	ENDFIL LDA EOF	00002A	0018	STA THREE	0C0039	001B	LDL ZERO	080033	001E	EOF BYTE C'EOF'	454F46	0021	THREE WORD 3	000003	0024	ZERO WORD 0	000000		END		5
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2	Design the algorithm for the pass-2 of a linking loader.	5																								
3	Differentiate between linking loaders and linkage editors.	5																								
	<b>PART B</b>																									
4	Illustrate the generation of unique labels and keyword macro parameters with the examples.	10																								
5	<p>a) Explain the various data structures used in the implementation of one pass macro processor.</p> <p>b) Write a short note on macro processing within language translators.</p>	10																								
6	<p>a) List any five advantages of the general purpose macro processor.</p> <p>b) The following is the macro definition of RDBUFF macro. Expand the macro call: RDBUFF F2, BUFFER, LENGTH, (01,05).</p> <pre> RDBUFF      MACRO      &amp;INDEV, &amp;BUFADR, &amp;RECLTH, &amp;EOR &amp;EORCT      SET        %NITEMS(&amp;EOR)               CLEAR     X               CLEAR     A +LDT         #4096 \$LOOP       TD         =X'&amp;INDEV'               JEQ        \$LOOP               RD         =X'&amp;INDEV' &amp;CTR        SET        1               WHILE (&amp;CTR LE &amp;EORCT)                 COMP     =X'0000&amp;EOR[&amp;CTR]'                 JEQ        \$EXIT &amp;CTR        SET        &amp;CTR+1               ENDW               STCH       &amp;BUFADR, X               TIXR       T               JLT        \$LOOP \$EXIT       STX         &amp;RECLTH               MEND           </pre>	10																								