M S RAMAIAH INSTITUTE OF TECHNOLOGY
(Autonomous Institute, affiliated to VTU)
DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

Term:	23.01.2017 to 13.5.2017	**Course Code:**	IS631
Course:	System Software	**Semester:**	VI – A, B & C
CIE:	Test – II	**Max Marks:**	30
Date:	03-04-2017	**Time:**	9.30am – 10.30am

Portions for Test: Lecture Nos. from L18 to L34 as per lesson plan.
Instructions to Candidates: Answer any two full questions.
Note: Mobiles and Programmable Calculators are strictly prohibited.

Sl No	Questions	Marks	BL	CO
1a)	Differentiate between linkage editor and linking loader.	03	An	CO2
1b)	Given the following object program with relocation bit mask, write the contents of the memory locations given the starting address as 3000 H COPY 000000 0103D T 000000 18 ED0 140033 481039 000036 280030 300015 481061 3C0003 00002A T 000018 15 E00 0C0036 481061 080033 4C0000 454F46 000003 000000 T 001033 0A 800 100036 4C0000 F1 001000 E 000000	05	A	CO3
1c)	Explain Multipass assemblers with an example.	07	U	CO2
2a)	Given the following ESTAB and the object program depict the contents of the memory **ESTAB:** Control Section Symbol name Address Length PROGA 3000 0045 LISTA 3030 ENDA 3044 PROGB 3045 0054 LISTB 3053 ENDB 3083 PROGC 3099 0051 LISTC 4001 ENDC 4010 **Object Program**: H PROGA 000000 000045 D LISTA 000030 ENDA 000044 R LISTB ENDB LISTC ENDC . T 000020 0A 03201D 77100004 050014 . T 000037 0F 000014 FFFFF6 00003F 000014 FFFFC0 M 000024 05+LISTB M 000037 06+LISTC M 00003A 06+ENDC M 00003A 06-LISTC M 00003D 06+ENDC E 000020	08	An	CO3
2b)	Describe the working of load and go assembler.	07	U	CO2
3 a)	Given the following SIC program, write the object program as produced by one pass assembler given the opcodes as follows: STL-14,JSUB-48, LDA-00, COMP 28, JEQ-30,	(07)	An	CO2

	J-30, STA-0C, LDL-08, RSUB-4C. RDREC is at location 203D and WRREC is at location 2062. Loc 1000 COPY START 1000 1000 EOF BYTE C'EOF' 1003 THREE WORD 3 1006 ZERO WORD 0 1009 RETADR RESW 1 100C LENGTH RESW 1 100F BUFFER RESB 4096 200F FIRST STL RETADR 2012 CLOOP JSUB RDREC 2015 LDA LENGTH 2018 COMP ZERO 201B JEQ ENDFIL 201E JSUB WRREC 2021 J CLOOP 2024 ENDFIL LDA EOF 2027 STA BUFFER 202A LDA THREE 202D STA LENGTH 2030 JSUB WRREC 2033 LDL RETADR 2036 RSUB			
b)	Write an algorithm with documentation for a bootstrap loader for SIC/XE machine.	**(08)**	**U**	**CO3**