

1 Explain the following

- A) Five Functions of an operating System
- B) Re-entrant code
- C) Memory Buffer Register
- D) Decimal Packed data format
- E) Logical (characters) Data Format

2 The following program computes the following

$$A = 2 * B + 2 * C - 1$$

- 1) Compute START
- 2) USING *,15
- 3) L 1,B
- 4) SLA 1,1
- 5) L 2,C
- 6) SLA 2,1
- 7) AR 1,2
- 8) S 1,=F'1'
- 9) ST 1,A
- 10) BR 14
- 11) A DC F'0'
- 12) B DC F'5'
- 13) C DC F'7'
- 14) END

Verify that preceding program works correctly by simulating the instructions one by one and filling the table below

Instruction	Register 1	Register2	Location A
3			
4			
5			
6			
7			
8			
9			

3	<p>A) Assume STOMP is defined by</p> <pre>STOMP DC C'CERASURE'</pre> <p>How will the following instructions execute differently</p> <pre>MVC STOMP+1(8), STOMP</pre> <pre>MVC STOMP(8), STOMP + 1</pre> <p>B) What will be in register 3 after each instruction in the following sequence of instructions</p> <pre>LA 3, = A (XYZ)</pre> <pre>LR 3,3</pre> <pre>L 3, = F'5'</pre> <pre>LA 3, 10(2,5)</pre>
4	Explain the design of a macro processor. How it handles nested calls.
5	Explain the structure & working of a) symbol table b) literal table c) base table d) machine operation table e) Pseudo operation table
6	Explain relocating loaders with transfer vector concept.
7	What is save area? What are its contents? How it is working as a stack. Explain in detail with example.
8	Give five different system software's with their working & the tools/software available of each type.