

**SYED AMMAL ARTS AND SCIENCE COLLEGE RAMANATHAPURAM**  
**(Affiliated to Alagappa University)**

2.5.1 .Mechanism of internal assessment is transparent and robust in terms of frequency and variety

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## **1. Mechanism of internal assessment**

- Students are briefed through faculty-wise opening addresses in orientation programmes by the Principal/HODs about internal assessment, question paper patterns and university examinations.
- The university norms relating to internal assessment are communicated to the students through the college academic calendar
- Evaluation methods and examination schedules are made available on the college websites.
- For effective understanding of the evaluation process, the faculty members give classwise/ course-wise instructions about unique features of internal/external evaluation of that course
- Internal examination schedule is displayed on department and college notice boards well in advance. Two internal examinations are held per semester.
- Changes in schedules, patterns, methods if any, are immediately notified to the students through notice boards and also through classroom briefing by the concerned subject teachers.
- The internal assessment mark lists are displayed on the notice boards.
- The subject teacher briefs the students in the classroom about their attendance and performance in the internal examinations.
- It is a practice of the college to show internal examination answer books after evaluation to the students in the class for self-evaluation.
- Students are free to interact with the teacher to resolve grievances if any, regarding the assessment.
- All records of internal Examinations such as Question papers, valued answer sheets , summary of marks sheets, are properly maintained by the teachers

### Mark Distribution for Theory Subjects

S.No.	Evaluation Parameters	Weightage
1.	Average of two internal assessments	15 marks
2.	Assignment	5 marks
3.	Seminar	5 marks
<b>Total</b>		<b>25 marks</b>

### Mark Distribution for Practical Subjects

S.No.	Evaluation Parameters	Weightage
1.	Average of two internal practical assessments	20 marks
2.	Record work	20 marks
<b>Total</b>		<b>40 marks</b>

### Mark Distribution for Project work

S.No.	Evaluation Parameters	Weightage
1.	Two review meetings	2 x 15 = 30 marks
2.	Overall performance	10 marks
<b>Total</b>		<b>40 marks</b>

**2. CIA Schedule in Academic Calendar  
SYED AMMAL ARTS AND SCIENCE COLLEGE  
ACADEMIC CALENDER 2019-2020**

DAY	DATE	DAY ORDER	JUNE 2019	NO OF WORKING DAYS
			PARTICULARS	
Saturday	1			
Sunday	2			
Monday	3			
Tuesday	4			
Wednesday	5		<b>Ramzan</b>	
Thursday	6			
Friday	7			
Saturday	8			
Sunday	9			
Monday	10			
Tuesday	11			
Wednesday	12			
Thursday	13			
Friday	14			
Saturday	15			
Sunday	16			
Monday	17	I	<b>Reopen for II UG, III UG &amp; II PG Students</b>	1
Tuesday	18	II		2
Wednesday	19		<b>Reopen for I UG Students - PTA Meeting for I year UG students(PTA)</b>	3
Thursday	20	III	<b>Bridge Course starts for I UG</b>	4
Friday	21	IV	<b>International Yoga Day</b>	5
Saturday	22	V		6

Sunday	23		<b>Holiday</b>	
Monday	24	VI		7
Tuesday	25	I		8
Wednesday	26	II	<b>Bridge Course ends for I UG</b>	9
Thursday	27	III		10
Friday	28	IV		11
Saturday	29	V		12
Sunday	30		<b>Holiday</b>	

DAY	DATE	DAY ORDER	JULY 2019	NO OF WORKING DAYS
			PARTICULARS	
Monday	1	VI		13
Tuesday	2	I		14
Wednesday	3	II		15
Thursday	4	III		16
Friday	5	IV		17
Saturday	6		<b>Holiday</b>	
Sunday	7		<b>Holiday</b>	
Monday	8	V		18
Tuesday	9	VI		19
Wednesday	10	I		20
Thursday	11	II	<b>World Population Day</b>	21
Friday	12	III		22
Saturday	13	IV		23
Sunday	14		<b>Holiday</b>	
Monday	15	V		24
Tuesday	16	VI		25
Wednesday	17	I		26

Thursday	18	II		27
Friday	19	III		28
Saturday	20	IV		29
Sunday	21		<b>Holiday</b>	
Monday	22	V		30
Tuesday	23	VI		31
Wednesday	24	I		32
Thursday	25	II	<b>Reopen for I PG Students</b>	33
Friday	26	III		34
Saturday	27	IV	<b>A.P.J.Abdul Kalam Memorial Day</b>	35
Sunday	28		<b>Holiday</b>	
Monday	29	V	<b>I Internal Examination Commences</b>	36
Tuesday	30	VI		37
Wednesday	31	I		38

DAY	DATE	DAY ORDER	AUGUST 2019	NOOF WORKING DAYS
			PARTICULARS	
Thursday	1	II		39
Friday	2	III		40
Saturday	3		<b>Holiday</b>	
Sunday	4		<b>Holiday</b>	
Monday	5	IV		41
Tuesday	6	V		42
Wednesday	7	VI		43

Thursday	8	I		44
Friday	9	II		45
Saturday	10	III		46
Sunday	11		<b>Holiday</b>	
Monday	12		<b>Bakrid</b>	
Tuesday	13	IV		47
Wednesday	14	V		48
Thursday	15		<b>Independence Day</b>	
Friday	16	VI		49
Saturday	17	I		50
Sunday	18		<b>Holiday</b>	
Monday	19	II		51
Tuesday	20	III		52
Wednesday	21	IV		53
Thursday	22	V		54
Friday	23		<b>Krishna Jayanthi</b>	
Saturday	24	VI		55
Sunday	25		<b>Holiday</b>	
Monday	26	I		56
Tuesday	27	II		57
Wednesday	28	III		58
Thursday	29	IV		59
Friday	30	V		60
Saturday	31	VI		61

DAY	DATE	DAY ORDER	SEPTEMBER 2019	NO OF WORKING DAYS
			PARTICULARS	
Sunday	1		<b>Holiday</b>	
Monday	2		<b>Vinayagkar Chathurthi</b>	
Tuesday	3	I		62
Wednesday	4	II		63
Thursday	5	III	<b>Teachers Day</b>	64
Friday	6	IV		65
Saturday	7		<b>Holiday</b>	
Sunday	8		<b>Holiday</b>	
Monday	9	V		66
Tuesday	10		<b>Muharram</b>	
Wednesday	11	VI		67
Thursday	12	I		68
Friday	13	II		69
Saturday	14	III	<b>World First Aid Day</b>	70
Sunday	15		<b>Holiday</b>	
Monday	16	IV	<b>II Internal Examination Commences</b>	71
Tuesday	17	V		72
Wednesday	18	VI		73
Thursday	19	I		74
Friday	20	II		75
Saturday	21	III		76
Sunday	22		<b>Holiday</b>	
Monday	23	IV		77
Tuesday	24	V		78
Wednesday	25	VI		79
Thursday	26	I		80



Friday	27	II		81
Saturday	28	III		82
Sunday	29		<b>Holiday</b>	
Monday	30	IV		83

DAY	DATE	DAY ORDER	OCTOBER 2019	NO OF WORKING DAYS
			PARTICULARS	
Tuesday	1	V		84
Wednesday	2		<b>Gandhi Jayanthi</b>	
Thursday	3	VI		85
Friday	4	I		86
Saturday	5		<b>Holiday</b>	
Sunday	6		<b>Holiday</b>	
Monday	7		<b>Ayudha pooja</b>	
Tuesday	8		<b>Vijaya Dashami</b>	
Wednesday	9	II	<b>Model Examination Commences</b>	87
Thursday	10	III		88
Friday	11	IV		89
Saturday	12	V		90
Sunday	13		<b>Holiday</b>	
Monday	14	VI		91
Tuesday	15	I	<b>Dr.APJ Abdul Kalam's Birthday</b>	92
Wednesday	16	II	<b>ESE Practical Commences for UG Students</b>	93
Thursday	17	III		94
Friday	18	IV		95
Saturday	19	V		96
Sunday	20		<b>Holiday</b>	
Monday	21	VI		97
Tuesday	22	I		98

Wednesday	23	II		99
Thursday	24	III	<b>ESE Practical Commences for PG Students</b>	100
Friday	25	IV		101
Saturday	26	V		102
Sunday	27		<b>Deepavali</b>	
Monday	28	VI		103
Tuesday	29	I		104
Wednesday	30	II		105
Thursday	31	III	<b>Last Working Day for UG &amp; II PG Students</b>	106

DAY	DATE	DAY ORDER	NOVEMBER 2019	NO OF WORKING DAYS
			PARTICULARS	
Friday	1			
Saturday	2		<b>Holiday</b>	
Sunday	3		<b>Holiday</b>	
Monday	4			
Tuesday	5			
Wednesday	6		<b>ESE Exam Commences for UG Students</b>	
Thursday	7			
Friday	8			
Saturday	9			
Sunday	10		<b>Milad-un-Nabi</b>	
Monday	11		<b>Last Working Day for I PG Students</b>	
Tuesday	12			
Wednesday	13			
Thursday	14		<b>Children's Day</b>	
Friday	15			
Saturday	16			
Sunday	17			
Monday	18			
Tuesday	19		<b>World Toilet Day</b>	
Wednesday	20		<b>ESE Exam Commences for PG Students</b>	

Thursday	21			
Friday	22			
Saturday	23			
Sunday	24		<b>Mega Alumni Meet</b>	
Monday	25			
Tuesday	26			
Wednesday	27			
Thursday	28			
Friday	29			
Saturday	30			

DAY	DATE	DAY ORDER	DECEMBER 2019	NO OF WORKING DAYS
			PARTICULARS	
Sunday	1		<b>World Aids Day</b>	
Monday	2			
Tuesday	3			
Wednesday	4			
Thursday	5			
Friday	6			
Saturday	7			
Sunday	8			
Monday	9	I	<b>Even Semester Begins</b>	1
Tuesday	10	II		2
Wednesday	11	III		3
Thursday	12	IV		4
Friday	13	V		5
Saturday	14	VI		6

Sunday	15		<b>Holiday</b>	
Monday	16	I		7
Tuesday	17	II		8
Wednesday	18	III		9
Thursday	19	IV		10
Friday	20	V		11
Saturday	21	VI		12
Sunday	22		<b>Holiday</b>	
Monday	23	I	<b>Farmer's Day</b>	13
Tuesday	24	II		14
Wednesday	25		<b>Christmas</b>	
Thursday	26	III		15
Friday	27	IV		16
Saturday	28	V		17
Sunday	29		<b>Holiday</b>	
Monday	30	VI		18
Tuesday	31	I		19

DAY	DATE	DAY ORDER	JANUARY 2020	NO OF WORKING DAYS
			PARTICULARS	
Wednesday	1		<b>New Year</b>	
Thursday	2	II		20
Friday	3	III		21
Saturday	4		<b>Holiday</b>	
Sunday	5		<b>Holiday</b>	
Monday	6	IV		22
Tuesday	7	V		23
Wednesday	8	VI		24
Thursday	9	I		25

Friday	10	II		26
Saturday	11	III	<b>National Youth Day</b>	27
Sunday	12		<b>Holiday</b>	
Monday	13	IV		28
Tuesday	14		<b>Samathuva Pongal Celebration</b>	29
Wednesday	15		<b>Pongal</b>	
Thursday	16		<b>Thiruvalluvar Day</b>	
Friday	17		<b>Uzhavar Tirunal</b>	
Saturday	18	V		30
Sunday	19		<b>Holiday</b>	
Monday	20	VI		31
Tuesday	21	I		32
Wednesday	22	II		33
Thursday	23	III		34
Friday	24	IV	<b>National Girl Child Day</b>	35
Saturday	25	V	<b>Voter's Day</b>	36
Sunday	26		<b>RepublicDay</b>	
Monday	27	VI	<b>I Internal Examination Commences</b>	37
Tuesday	28	I		38
Wednesday	29	II		39
Thursday	30	III		40
Friday	31	IV		41

DAY	DATE	DAY ORDER	FEBRUARY 2020	NO OF WORKING DAYS
			PARTICULARS	
Saturday	1		<b>Holiday</b>	
Sunday	2		<b>Holiday</b>	
Monday	3	V		42
Tuesday	4	VI		43
Wednesday	5	I		44
Thursday	6	II		45
Friday	7	III		46
Saturday	8	IV		47
Sunday	9		<b>Holiday</b>	
Monday	10	V		48
Tuesday	11	VI		49
Wednesday	12	I		50
Thursday	13	II		51
Friday	14	III		52
Saturday	15	IV		53
Sunday	16		<b>Holiday</b>	
Monday	17	V		54
Tuesday	18	VI		55
Wednesday	19	I		56
Thursday	20	II		57
Friday	21	III		58
Saturday	22	IV		59
Sunday	23		<b>Holiday</b>	
Monday	24	V	<b>II Internal Examination Commences</b>	60
Tuesday	25	VI		61
Wednesday	26	I		62

Thursday	27	II		63
Friday	28	III	<b>National Science Day</b>	64
Saturday	29		<b>7<sup>th</sup> Graduation Day</b>	

DAY	DATE	DAY ORDER	MARCH 2020	NO OF WORKING DAYS
			PARTICULARS	
Sunday	1		<b>Holiday</b>	
Monday	2	IV		65
Tuesday	3	V		66
Wednesday	4	VI		67
Thursday	5	I		68
Friday	6	II		69
Saturday	7		<b>Holiday</b>	
Sunday	8		<b>International Women's Day Holiday</b>	
Monday	9	III		70
Tuesday	10	IV		71
Wednesday	11	V		72
Thursday	12	VI		73
Friday	13	I		74
Saturday	14	II		75
Sunday	15		<b>Holiday</b>	
Monday	16	III	<b>ESE Practical Commences for UG &amp; PG Students</b>	76
Tuesday	17	IV		77
Wednesday	18	V		78

Thursday	19	VI		79
Friday	20	I		80
Saturday	21	II		81
Sunday	22		<b>Holiday</b>	
Monday	23	III	<b>Model Examination Commences</b>	82
Tuesday	24	IV		83
Wednesday	25	V		84
Thursday	26	VI		85
Friday	27	I		86
Saturday	28	II		87
Sunday	29		<b>Holiday</b>	
Monday	30	III		88
Tuesday	31	IV	<b>Last Working Day for UG &amp; PG Students</b>	89

DAY	DATE	DAY ORDER	APRIL 2020	NO OF WORKING DAYS
			PARTICULARS	
Wednesday	1			
Thursday	2			
Friday	3			
Saturday	4		<b>Non-Academic Day</b>	
Sunday	5		<b>Holiday</b>	
Monday	6		<b>Mahavir Jeyanthi</b>	
Tuesday	7		<b>ESE Exam Commences for UG Students</b>	
Wednesday	8			
Thursday	9			
Friday	10		<b>Good Friday</b>	
Saturday	11			
Sunday	12			
Monday	13			

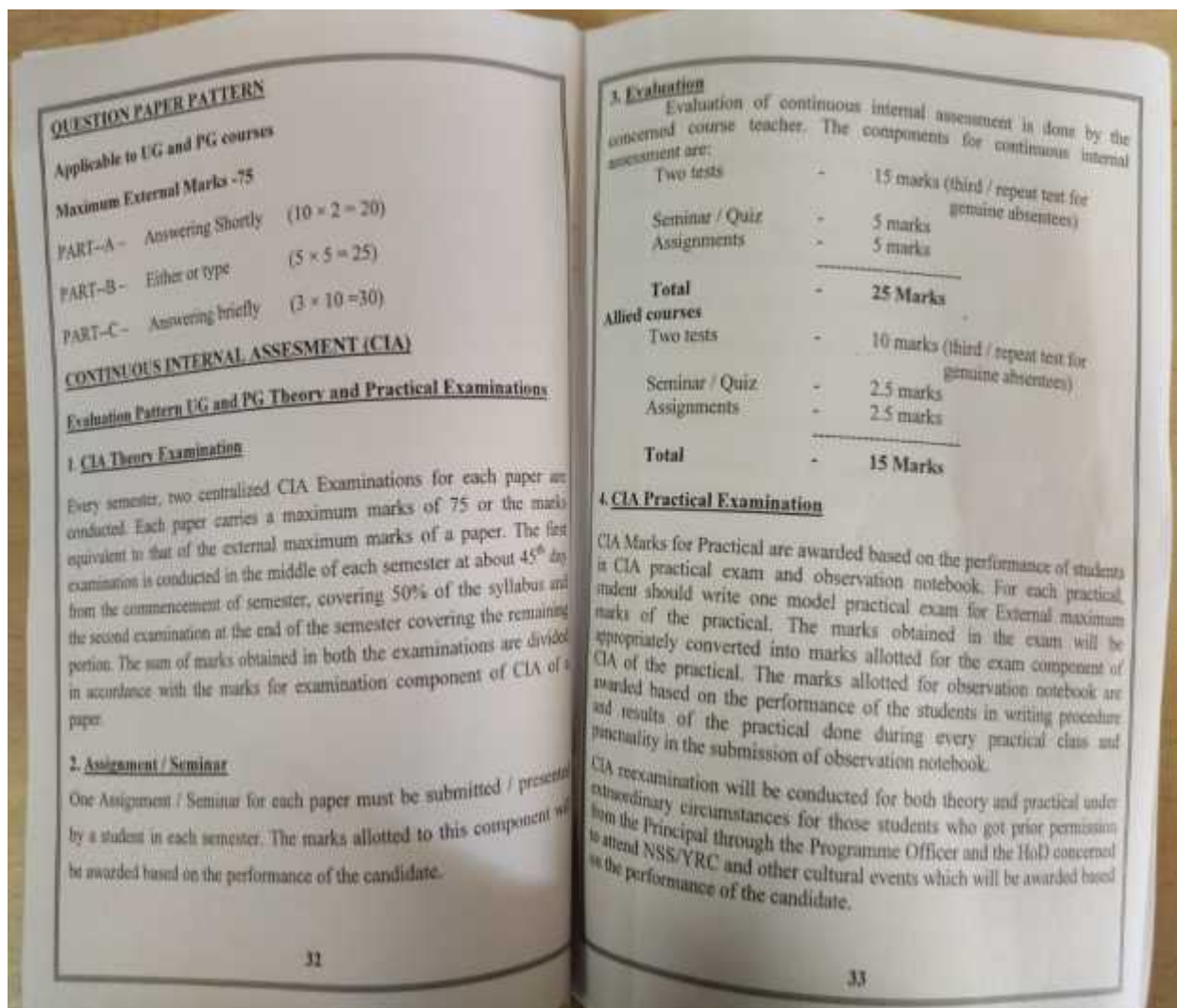


Tuesday	14		<b>Tamil New year</b>	
Wednesday	15			
Thursday	16			
Friday	17			
Saturday	18			
Sunday	19			
Monday	20		<b>ESE Exam Commences for PG Students</b>	
Tuesday	21			
Wednesday	22			
Thursday	23			
Friday	24			
Saturday	25			
Sunday	26			
Monday	27			
Tuesday	28			
Wednesday	29			
Thursday	30			

DAY	DATE	DAY ORDER	MAY 2020	NO OF WORKING DAYS
			PARTICULARS	
Friday	1		<b>May Day</b>	
Saturday	2			
Sunday	3			
Monday	4			
Tuesday	5			
Wednesday	6			
Thursday	7			
Friday	8			
Saturday	9			
Sunday	10			
Monday	11			
Tuesday	12			
Wednesday	13			
Thursday	14			

Friday	15			
Saturday	16			
Sunday	17			
Monday	18			
Tuesday	19			
Wednesday	20			
Thursday	21			
Friday	22			
Saturday	23			
Sunday	24		<b>Ramzan</b>	
Monday	25			
Tuesday	26			
Wednesday	27			
Thursday	28			
Friday	29			
Saturday	30			
Sunday	31			


### 3. Internal marks split up information in Academic Calender





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**SYED AMMAL ARTS AND SCIENCE COLLEGE**  
 (AFFILIATED TO ANNA UNIVERSITY, KANNIYAKUMARI)  
 Dr. T.M.Ammanur Saib, DEPARTMENT HEAD, PULLAMANNAR(P.O),  
 RAJAGANAPURAM-625119

OUR COLLEGE | ADMISSION | ACADEMICS | EXAMINATIONS | ALUMNI | FACILITIES | NAAC | GRIEVANCES | PLACEMENTS | FAQs

Distribution of Marks between Theory, Practical and Project:

Core / Elective	Internal	External	Total
Theory papers	25	75	100
Practical papers	40	60	100

Allied courses	Internal	External	Total
Theory papers	15	60	75
Practical papers	20	30	50

Project	Internal	External	Total
UG	40	60	100
PG	50	150	200


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# SYED AMMAL ARTS AND SCIENCE COLLEGE

(Affiliated to Alauddin University, Kavaratti)  
Dr. E.M. Ammal (Social, Development Studies, Psychology (P)),  
Kavaratti (P.O)-844022

- OUR COLLEGE
- ADMISSION
- ACADEMICS
- EXAMINATIONS
- ALUMNI
- FACILITIES
- NAAC
- GRIEVANCES
- PLACEMENTS
- FAQS

### EVALUATION:

Evaluation for each course shall be done by a continuous internal assessment by the concerned course teacher as well as by an end semester examination and will be consolidated at the end of the course. The components for continuous internal assessment are:

Two tests -	15 marks (third / repeat test for genuine absentees)
Seminar / Quiz -	5 marks
Assignments -	5 marks
<hr/>	
Total -	25 Marks

### Allied courses

Two tests -	10 marks (third / repeat test for genuine absentees)
Seminar / Quiz -	2.5 marks
Assignments -	2.5 marks
<hr/>	

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13/10/2020

## 5. Internal Exam Schedule circulated to the students


**SYED AMMAL ARTS AND SCIENCE COLLEGE**  
**RAMANATHAPURAM**  
**DEPARTMENT OF COMPUTER SCIENCE**  
**I - INTERNAL EXAMINATION TIME TABLE 2019-2020**

Year/Date	27.01.2020	28.01.2020	29.01.2020	30.01.2020	31.01.2020
I-B.Sc	721T Tamil	722E English	7BCE2C1 Object Oriented Programming With C++	7BSOA2 Desktop Publishing	-
II-B.Sc	741T Tamil	742E English-II	7BCE4C1 Java Programming	7BITA4 Operation Research	-
III-B.Sc	7BCE6C1 Computer Networks	7BCE6C2 Computer Graphics	7BCE6C3 Software Engineering	7BCEE3A Vb.Net And Asp.Net Programming	-
I-M.Sc	7MCE2C1 Computer System Architecture	7MCE2C2 .Net Technology	7MCE2C3 Distributed Operating System	7MCE2E1 Mobile Computing	7MCE2E6 Digital Image Processing

  
 Signature of HOD  
 HOD of Computer Science  
 Syed Ammal Arts & Science College  
 Ramanathapuram - 621 014.



  
 Signature of Principal  
**PRINCIPAL**  
 Syed Ammal Arts and Science Coll  
 KOOTTAMPULLI, Pullankudi P  
 Ramanathapuram, Dist

**6. Sample Answer Script of a student**





37  
50

Reg no: 4115314004

Roll no: 18M4E12

Class: I - MSc

Sub: Computer Architecture

Date: 29.1.19

INTERNAL EXAM

PART - C

12. processor bus :-

\* The part of the computer that performs data processing operations is called central processing unit, referred as CPU.

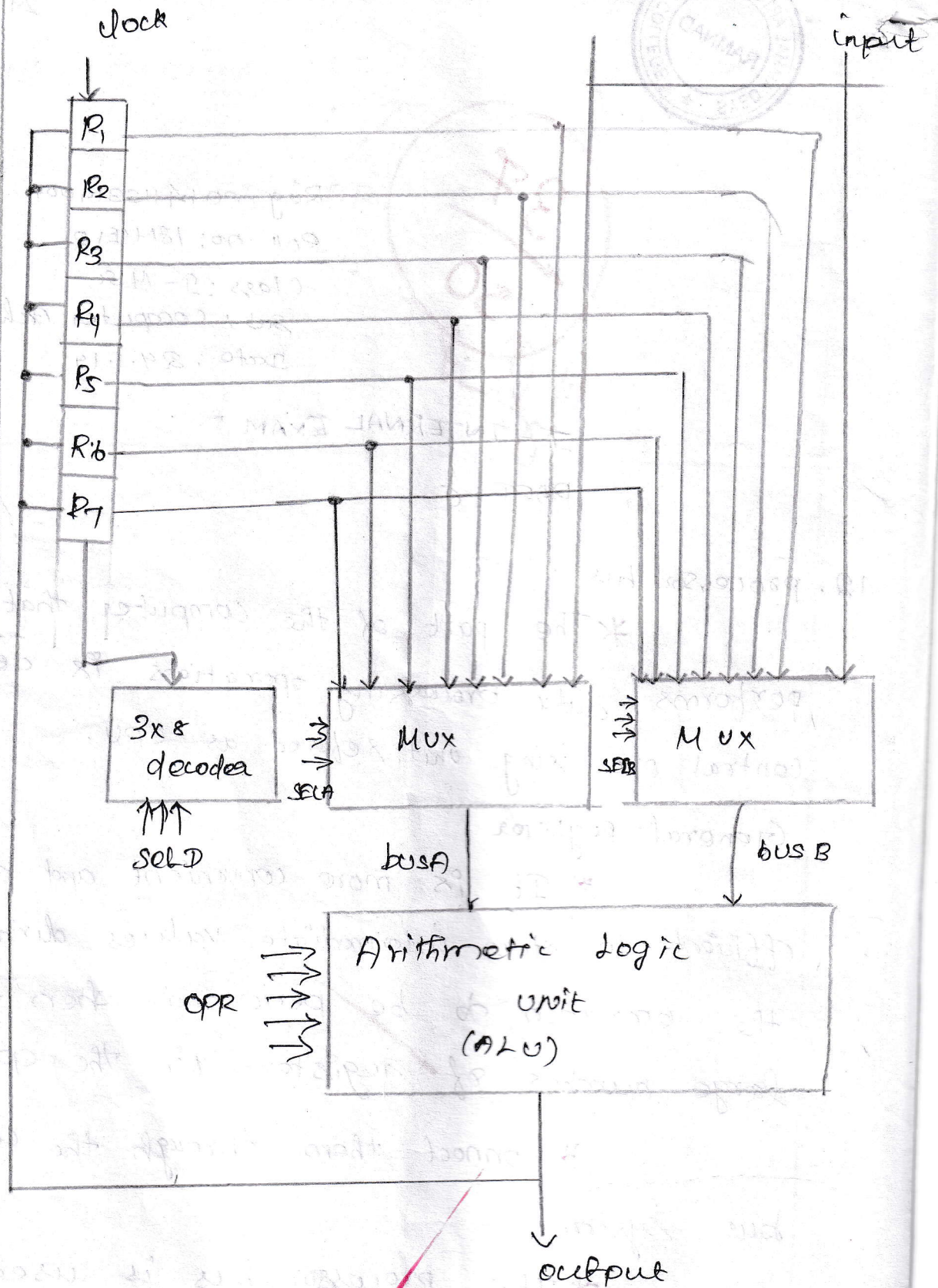
General Register :-

\* It is more convenient and more efficient to store intermediate values during the operation to be performed. When the large number of registers in the CPU.

\* Connect them through the common bus system.

\* The processor bus is used to transfer the data among all registers.

\* The bus organization with seven CPU register as shown in the following diagram.



\* The bus system with seven CPU registers contains two multiplexers to form the buses A and B. The decoder determines

to Arithmetic logic unit to determine which operation to be performed. The selection lines of ALU, indicates the operation. The lines from output bus store the result to any one of the Register.

\* The control unit is used to control the inputs to be given:

Ex:-

$$R_1 \leftarrow R_2 + R_3$$

Mux A Selector (SELA)

\* places the content of  $R_2$  to Bus A

Mux B Selector (SELB)

\* places the content of  $R_3$  to Bus B

operation code selector (OPR)

\* provides arithmetic addition.

destination selector (SELD)

\* Transfer the output to  $R_1$

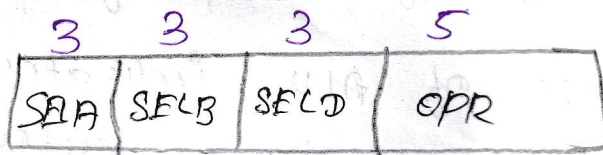
Control word:

\* There are 14 bit word and their values specifies a control word.

\* It has four fields

\* Each field with 3 bits,

the last field has five bits.



\* The registers in the processor bus are described as

	SEL A	SEL B	SEL D	Registers
000	R1P	R1P	R1P	<del>R1P</del>
001	R1	R1	R1	R1
010	R2	R2	R2	R2
011	R3	R3	R3	R3
100	R4	R4	R4	R4
101	R5	R5	R5	R5
110	R6	R6	R6	R6
111	R7	R7	R7	R7

ALU - (Arithmetic Logic Unit)

\* The ALU provides, arithmetic and logical operations and it also provides shift operation

\* Various arithmetic operations like addition, subtract, divide, multiplication are provide. The opr field contains five bits to specify these operation

Ex:-

Addition

ADD

# Examples of micro operations

\* The 14 bit control word is needed to specify the micro operation. Each field is used to specify the operation

$$R_1 \leftarrow R_2 - R_3$$

\* This performs the subtract operations among the registers.

Control word

Symbol	$R_2$	$R_3$	$R_1$	SUB
Field	SELA	SELB	SELD	OPR
Binary	010	011	001	00011

\* The content of  $R_3$  is subtracted with the content of  $R_2$  and the results is stored in the register  $R_1$ .

subtraction operation contains the bits 00011.

\* These way each operation are executed during the micro operation

## 1. Micro operation

\* The operations executed on data stored in register is called micro operation

\* The micro operation is an elementary operation that are performed on one or more register.

Ex.:

$$R_1 \leftarrow R_2 + R_3$$

\* The examples of micro operations are shift, count, clear... etc.

\* Most computer operations are evaluated as micro operation

## 2. Interrupt

Interrupt are some disturbances arised during the execution of program.

There are three types of interrupts

\* External interrupt (H/W failure)

\* Internal interrupt (divided by zero, code missing... etc)

\* These are most common types of - interrupts

29/1/19

### 3. Addressing mode

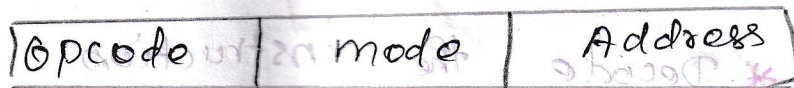
\* The way the operands are chosen during the program execution.

\* The addressing mode specifies rules for interpreting or modifying the address field of the instruction

\* To give the program versatility to the user.

\* To reduce the number of bits used in the address part of the instruction

Ex:

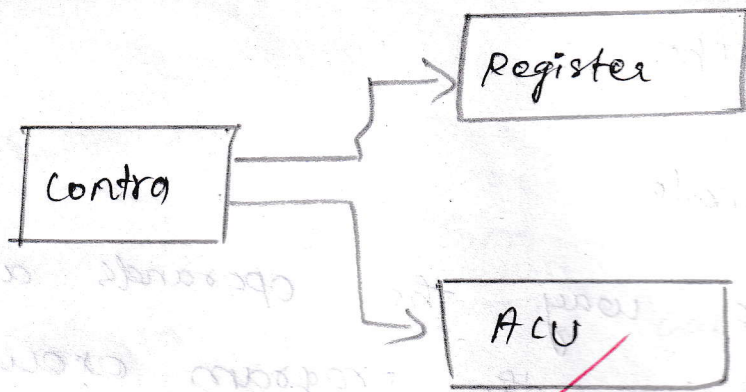


### 4. ALU :

\* The arithmetic logic unit provides the arithmetic and logical operations.

It also provides shift operations.

\* The ACU performs micro operations



\* It performs all the operations on CPU.

5. Three phases

\* To evaluate each instruction in the program, the instruction cycle performs the following three phases

\* Fetch the instruction from memory

\* Decode the instruction

\* Execute the instruction

\* These are the three phases of instruction cycle.

PART - B

6. Register Stack ::

A stack is a storage



29/1/19

# Last - In - First - out (LIFO)

Two operations

The two operations are

push or insert (push-down)

pop or delete (POP-UP)

Register stack :

The register is performed on the large portion of memory unit in CPU.

If the stack full, then Full  $\leftarrow 1$ ,

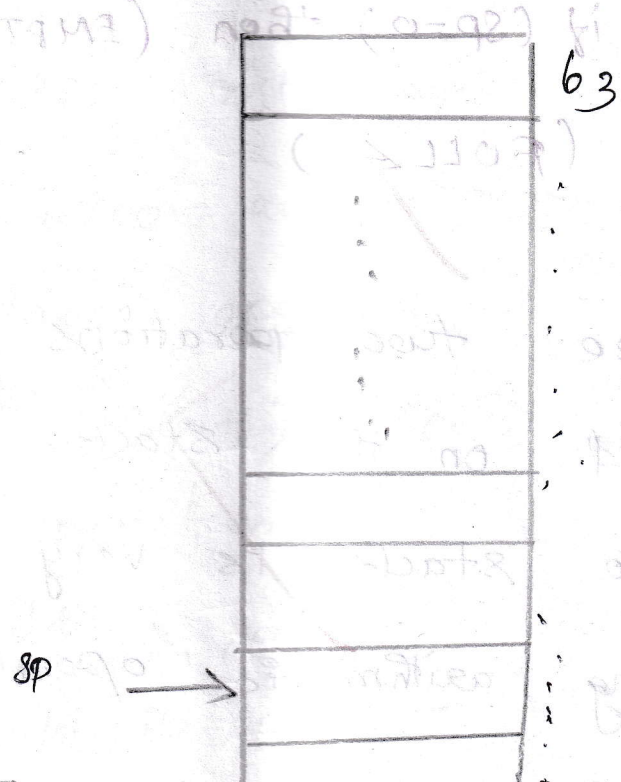
otherwise 0

If the stack is empty, then EMPTY  $\leftarrow 1$

otherwise 0.

EMPTY

FULL



holds starting point of the stack.

\* It is incremented or decremented after the stack operation is performed.

Micro operation for push

$$SP \leftarrow SP + 1;$$

$$M[SP] \leftarrow DR;$$

if ( $SP = 0$ ) then ( $FULL \leftarrow 1$ )

( $EMPTY \leftarrow 0$ )

Micro operation for pop

$$DR \leftarrow M[SP];$$

$$SP \leftarrow SP - 1;$$

if ( $SP = 0$ ) then ( $EMPTY \leftarrow 1$ )

~~( $FULL \leftarrow 0$ )~~

\* These two operations are performed on the stack.

\* The stack is very useful for evaluating arithmetic operations.

uses two operands \*

Ex:  $x = (a+b) * (c+d)$

```
mov R1, a
add R1, b
mov R2, c
add R2, d
mul R1, R2
mov x, R1
```

One-address instruction

uses one operand

Ex:- Accumulator

```
mov a
add b
```

Zero-address instruction

Example for this is stack

$x = (a+b) * (c+d)$

```
Ex:
push a
push b
add
push c
push d
```

$$X = (a+b) * (c+d)$$

load A

load B

load C

load D

Add A, B

Add C, D

Mul A, C

These computer instructions are executed.

## 8. Transfer instruction

Data transfer and manipulation instruction contains

\* Data transfer instruction

\* Data manipulation instruction

\* Program control

Data transfer instruction:

This instruction is used to transfer the data from one location to another without changing the binary information.

It is used for move the

During the transfer of data, the content of data does not change. The data transfer instructions and their mnemonics are.

Instruction	Mnemonics
Load	LD
Store	ST
Move	MOV
Exchange	XCH
Input	IN
Output	OUT
push	PUSH
pop	POP

The load instructions are used for load the data from memory.

The store instructions is used for store the data to memory.

push and pop instruction is used in stack organization.

Move instruction is used for

to data from processor

1. between memory and input unit
2. between memory and processor registers
3. between the two processor registers.

## 9. Addressing

\* The operation field specifies the operations to be performed.

\* The way the operands are chosen during the program execution.

\* The addressing mode field specifies the address part of the instruction.

\* few types of addressing modes are:

1. Implied mode
2. Immediate mode
3. Register mode
4. Register indirect mode
5. Auto increment or decrement mode
6. Direct mode
7. Indirect mode

## Implied mode

In this, the operand is implicitly defined in the instruction

Ex:- Complement accumulator

## Immediate-mode

In this mode, the operand is defined address field itself

Ex:- constant value

MOV #200, R1

Numerical representation for addressing mode.

200	load	Mode
201	Add	500
202	next	
399		450
400		500
500		800
600		900
700		325
800		300

PC = 201

XR = 100

R1 = 400

AC

### 13. Inter Register transfer.

\* A register is temporary storage are reside within the CPU.

\* Registers are designated by the letters and followed by numbers.

Ex:-

R<sub>1</sub>, R<sub>2</sub>

### Register Transfer Language

The symbolic notations used to describe the micro operations is called register transfer language.

Registers are

PC - program counter

AR - Address register

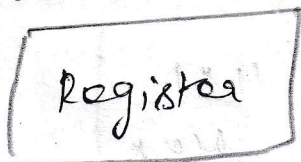
DR - Data register

R<sub>1</sub>, R<sub>2</sub> - processor registers.

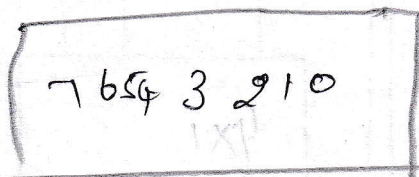
### Register specification.

Registers are in the rectangular box.

Ex:-

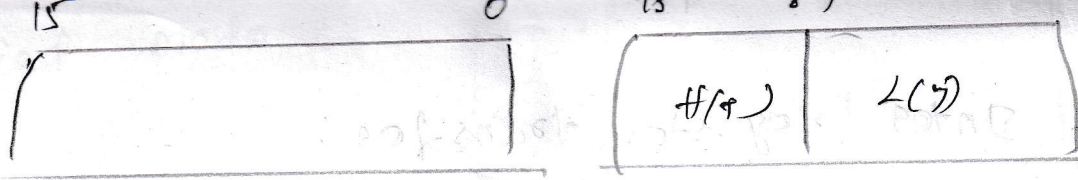


a) Register



b) individual





c) Storage bits

↑) dividing into two parts.

Bus and memory transfer

Bus and memory transfer is a efficient way to transfer the data from one place to another

The two ways to constructor

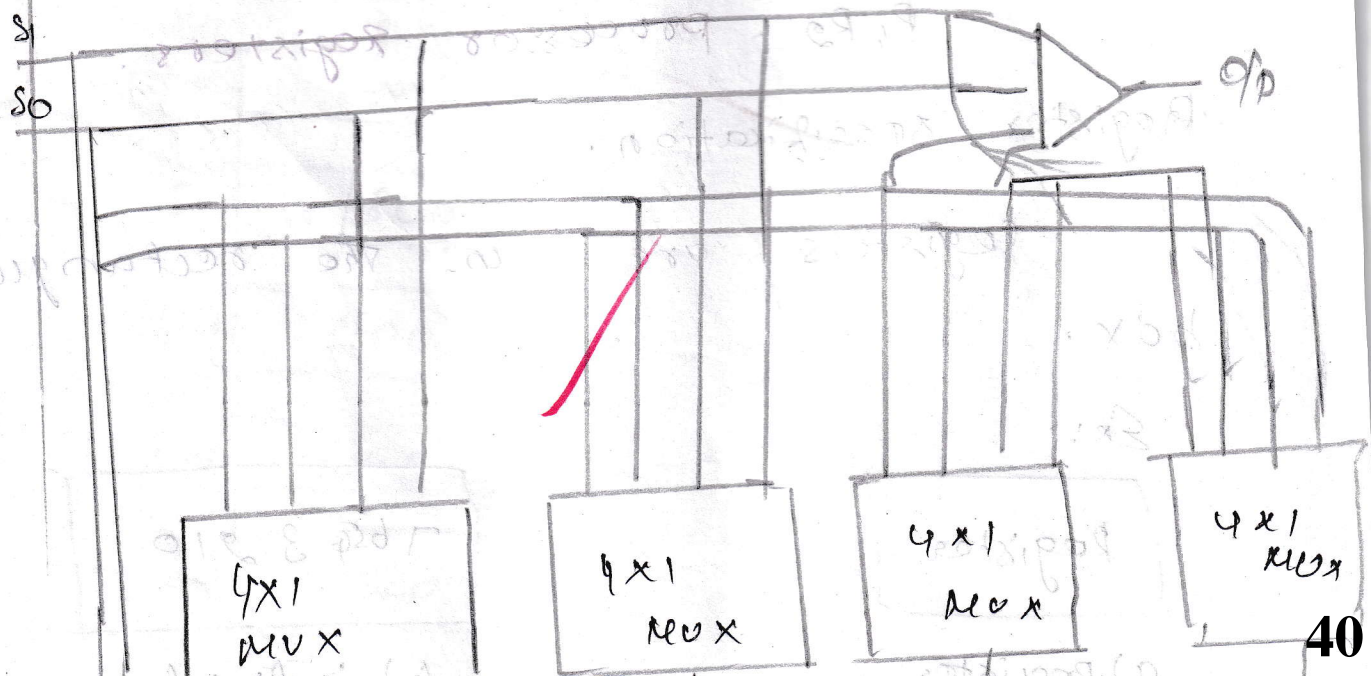
Common bus system (multiplexer)

Three state buffer

Common bus system

It is constructed using four

multiplexers,



S <sub>1</sub>	S <sub>0</sub>
0	0
0	1
1	0
1	1

Three state buffers :-

\* It is constructed using the logical gates in the CPU.

\* These common bus system and buffers are used to transfer the information.

Memory read and write

\* The memory read and write operations is used transfer the data.

Read:

to read the data from

memory

MARK-DR

write operation

\* To write the data on the memory

$DR \leftarrow M[AR]$