



## GOVERNMENT POLYTECHNIC MUMBAI

EVEN TERM: 2024-25

(1)

### UNIT TEST : I

#### PROGRAMME: INFORMATION TECHNOLOGY

COURSE NAME : DS

COURSE CODE: CO23104

SEMESTER:SECOND

CLASS – FIRST YEAR

SHIFT : First Shift/ Second Shift

MAX MARKS: 20 TIME: 1 Hour

#### Q1) Attempt the following

(3x2=06)

- a) Define Data structure with classification. (CO1,R)
- b) Define Stack data structure. (CO3,R)
- c) Define advantages of Data Structure. (CO1,R)

#### Q2) Attempt the following

(4x2=08)

- a) Sort the following elements by using selection sort  
54,23,88,95,46,12,61,4 (CO2,U)

OR

- b) Sort the following elements by using Bubble Sort  
56,10,23,9,34,45,15,6 (CO2,u)

- a) Explain the following terms w.r.t Stack  
1.PUSH 2. POP 3. Empty Stack 4.Stack Overflow

(CO3,U)

OR

- b) Perform following operations on stack and return TOP of stack  
size of stack 6

PUSH(10),PUSH(12),PUSH(15),POP(),POP(),PEEK(),  
PUSH(20),PUSH(56),POP() (CO3,U)

(2x3=6)

#### Q3) Attempt any two of following

- a) State limitations of Array data structure (CO1,U)
- b) Search 23 number from array by using binary search (CO2,A)  
10,23,27,32,35,56,67,78,89,90 (CO2,A)
- c) Sort elements using Insertion sort 89,12,74,35,55,45

CO	R	U	A	TOTAL
CO1	4		3	7
CO2		8	6	14
CO3	2	8		10
TOTAL	6	15	10	31