SIMATS

ASSIGNMENT NO - 4

COURSE CODE - CSA0389.

COURSE NAME - DATA
STRUCTURE.

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1) Develop a c program to implement the Tree traversal

(Inorder, preorder, postorder)

```
# include <stdio.h >
# include <stdlib.h>
 struct Node {
    int data;
    struct Node * left;
    struct Node * Right;
  };
 struct Node* createNode (int data) {
     struct Node * newNode =(struct Node *) malloc ( sizeof (s Node))
      newnode -> data =data;
      newNode -> left = NULL;
      newNode -> right = NULL;
       return new node;
void inorder ( struct node * root ) {
     if(root==NULL)
      return;
      inorder (root -> left );
      printf ("%d", root -> data);
      preorder (root -> left );
      preorder ( root-> right);
  }
 void postorder ( struct node * root ) {
    if(root == NULL)
     return;
   postorder ( root -> left );
   postorder ( root -> right );
```

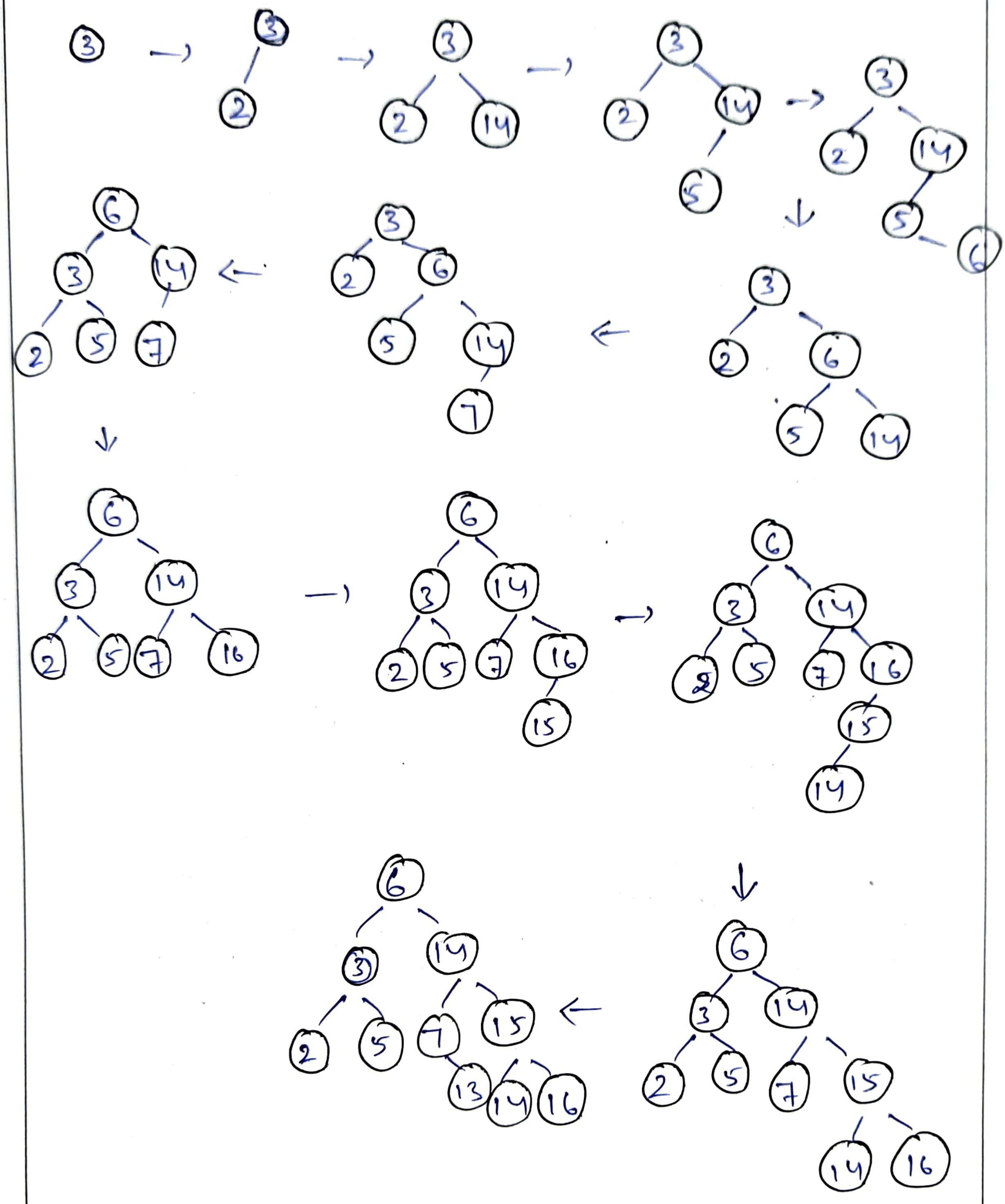
4(1)

```
        printf ("%.d", root->data);
}
int main() {
struct node * root = create node (1);
root->left = create node (2);
root->right = create node (3)
root->left->left = create node (4)
root->left->right = create node (5)
 root->right->left = create node (6)
 root->right->right = create node (7).
 printf("Inorder traversal :");
  inorder (root)
    printf ("\n");
   printf (" preorder traversal:");
   preorder(root);
   printf("\n") ;
   printf (" postorder traversal:");
   postorder (root);
   printf (" \n");
   return 0;
  }
```

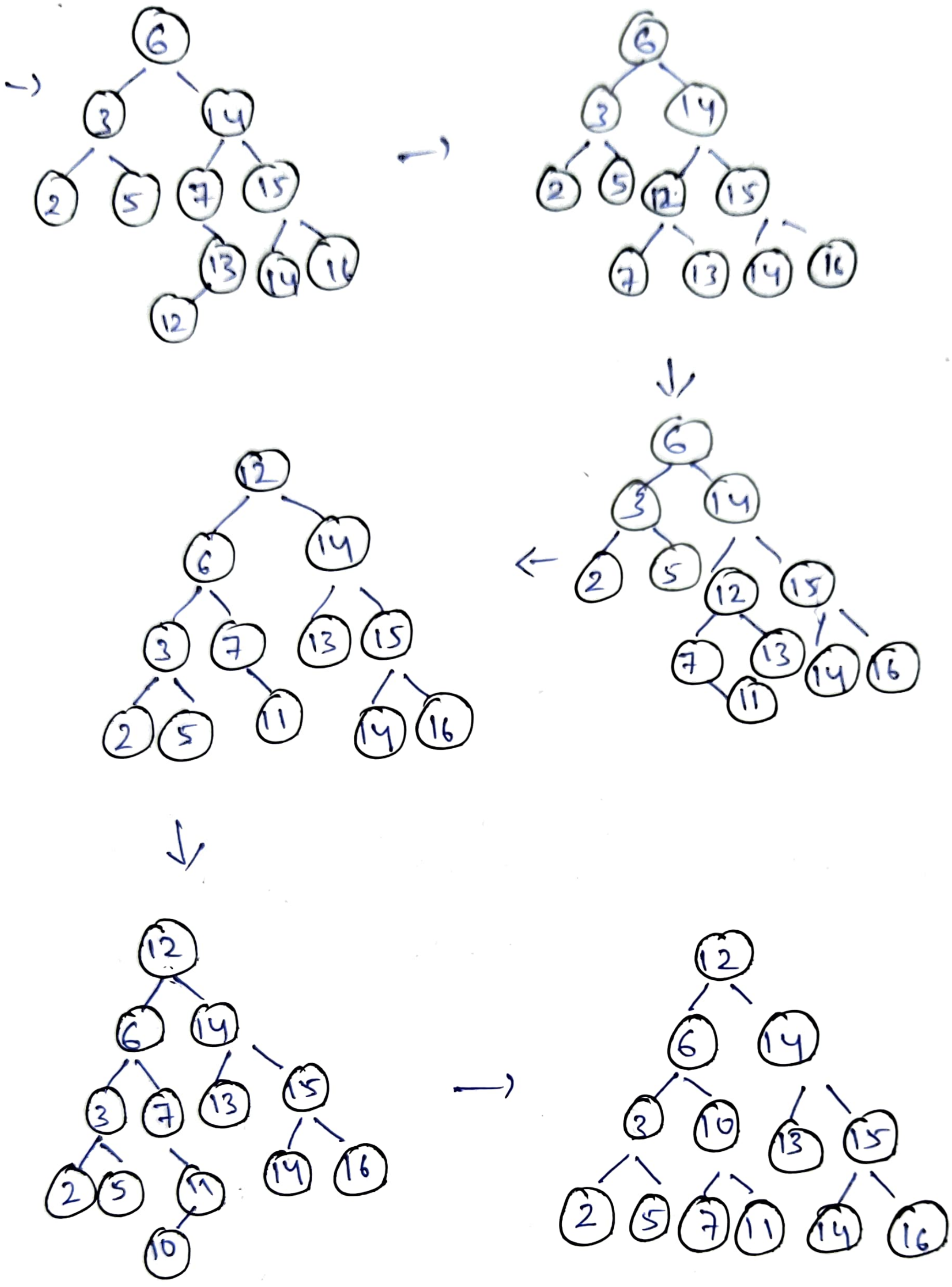
2) Construct AVL tree for the following elements.

3, 2, 14, 5, 6, 7 followed by 10 to 16 in reverse order.

3, 2, 14, 5, 6, 7, 16, 15, 14, 13, 12, 11, 10



4 (2)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11
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16