**Program – 12**

**Aim – Write an algorithm and program to implement Job sequencing with deadline.**

**Algorithm –**

1) Sort all jobs in decreasing order of profit.   
2) Iterate on jobs in decreasing order of profit.For each job , do the following :   
a)Find a time slot i, such that slot is empty and i < deadline and i is greatest.Put the job in this slot and mark this slot filled.   
b)If no such i exists, then ignore the job.

**Source Code -**

#include<iostream>

#include<algorithm>

using namespace std;

struct Job

{

char id; // Job Id

int dead; // Deadline of job

int profit; // Profit if job is over before or on deadline

};

bool comparison(Job a, Job b)

{

return (a.profit > b.profit);

}

void printJobScheduling(Job arr[], int n)

{

sort(arr, arr+n, comparison);

int result[n];

bool slot[n];

for (int i=0; i<n; i++)

slot[i] = false;

for (int i=0; i<n; i++)

{

for (int j=min(n, arr[i].dead)-1; j>=0; j--)

{

if (slot[j]==false)

{

result[j] = i;

slot[j] = true;

break;

}

}

}

for (int i=0; i<n; i++)

if (slot[i])

cout << arr[result[i]].id << " ";

}

int main()

{

Job arr[] = { {'a', 2, 100}, {'b', 1, 19}, {'c', 2, 27},

{'d', 1, 25}, {'e', 3, 15}};

int n = sizeof(arr)/sizeof(arr[0]);

cout << "Following is maximum profit sequence of jobs \n";

printJobScheduling(arr, n);

return 0;

}