CSE221 - Final

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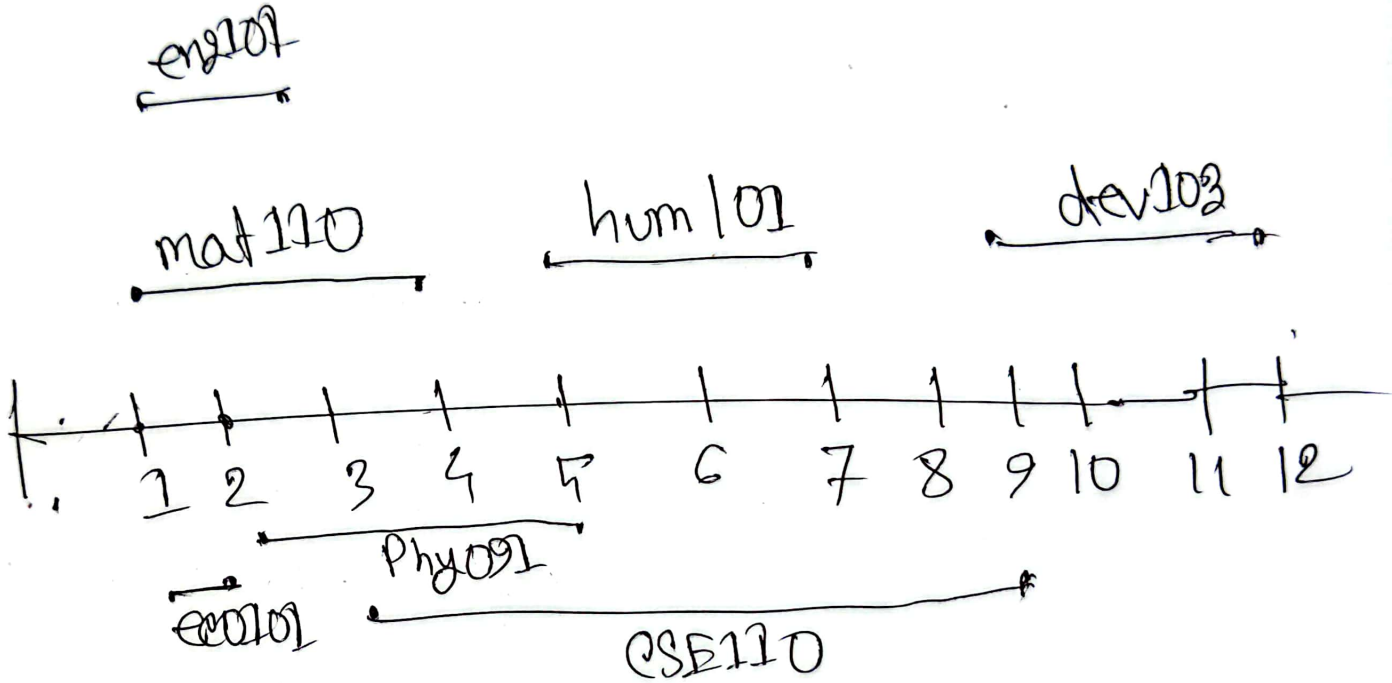
Sec: 07

(1)



Day1 : ece101, Phy091, hum101, dev103

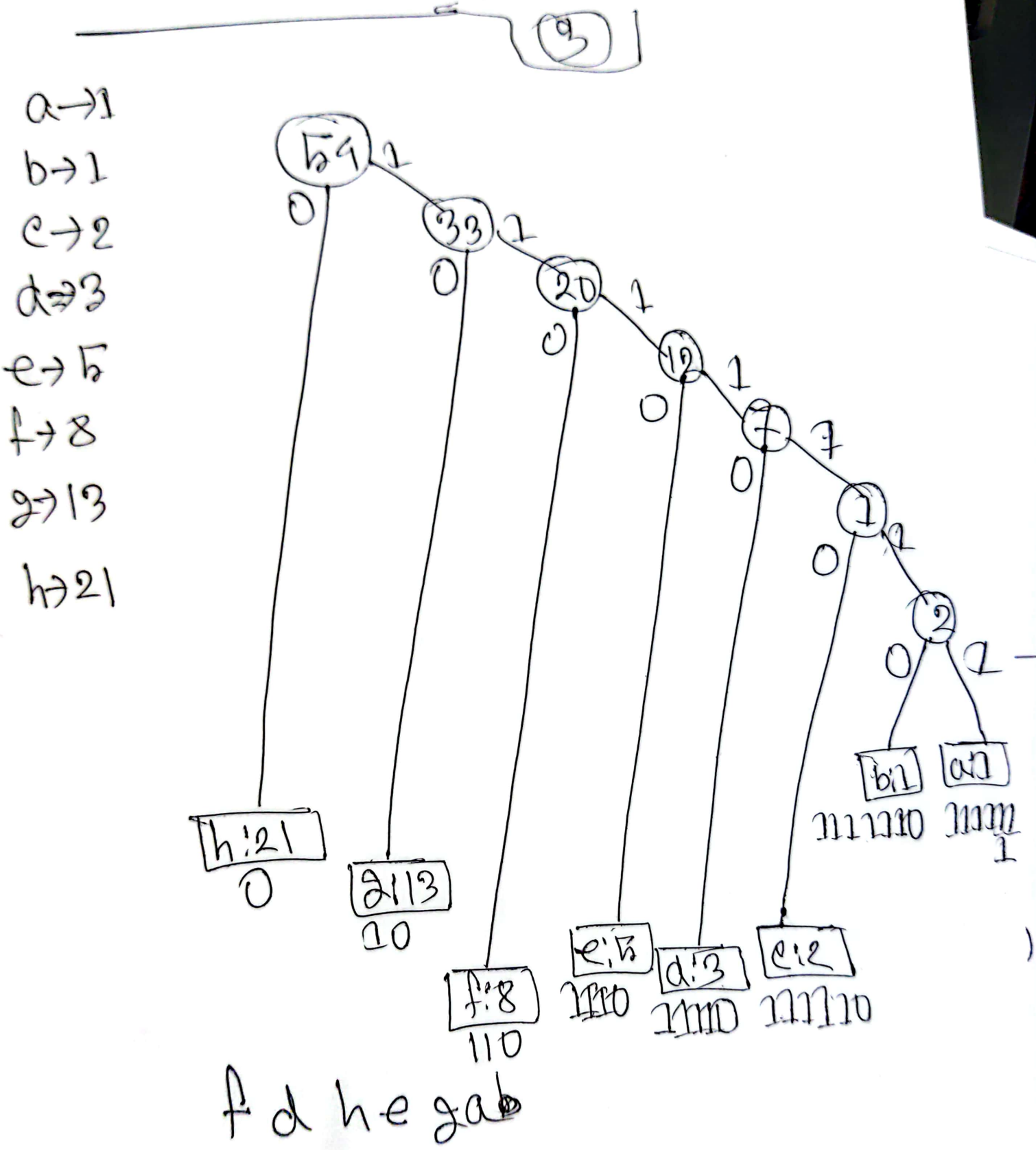
Day2 : eng101, mat110

(2)

Day1, Day2 consideration,

= 4+2 = 6

Final Question : A



f d h e g a b

(4) Chegg

1111100111010110 [From 3]

Part B

Question 2

For 14 ⇒ NO

Explanation: The output = 4+4+4+1+1

Whereas,

Optimal solution = 4+4+3+3

For 6 ⇒ NO

Explanation: The output = 4+1+1

Optimal solution = 3+3

For 10 ⇒ NO

The output = 4+4+1+1

Optimal solution = 4+3+3

For 100 : Yes

The output = 254

Optimal solution = 254

Yes, Because, The output = Optimal solution

Part B – Q#1

To solve we can use Brute Force algorithm.

''' A naive recursive implementation of 0/1 knapsack problem & it returns the maximum value knapsack capacity W '''

```
def knapsack(W, wt, val, n):
    if n==0 or w==0:
        return 0
    if (wt[n-1]>W):
        return knapsack(W, wt, val, n-1)
    else:
        ~~return knapsack(W, wt, val, n-1)~~
        return max(val[n-1] + knapsack
                   (W - wt[n-1], wt,
                    val, n-1),
                   knapsack(W, wt, val, n-1)
```

```
val = [7, 10, 7, 20, 13]   # items
wt = [5, 3, 3, 7, 9]       # weights
W = 7                      # Carry at most 7
n = len(val)
print("If maximum capacity is 7
        the answer =", knapsack(W, wt, val, n))

W1 = 7 + 3                 # increase knapsack by 3
print("If maximum capacity is 10
        the answer =", knapsack(W1, wt,
                                val, n))
```

Output:

⇒ If maximum capacity is 7 the answer = 20

⇒ If maximum capacity is 10 the answer = 30