

Assignment - 02

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Section : 13

1) i)

	0	1	2	3	4	5	6	7	8
0	0	0	0	0	0	0	0	0	0
<u>J(3)</u>	0	0	0	(5)	5	5	5	5	5
<u>S(5)</u>	0	0	0	5	5	9	9	9	(14)
P(4)	0	0	0	0	5	9	9	10	14
B(1)	0	4	4	4	5	9	13	13	14
M(12)	0	4	4	4	5	9	13	13	(14)

$$\therefore \text{Maximum profit} : 9(\text{sculpture:5}) + 5(\text{Jewelry:3})$$

$$= 14$$

Selected items : sculpture, Jewelry

ii)

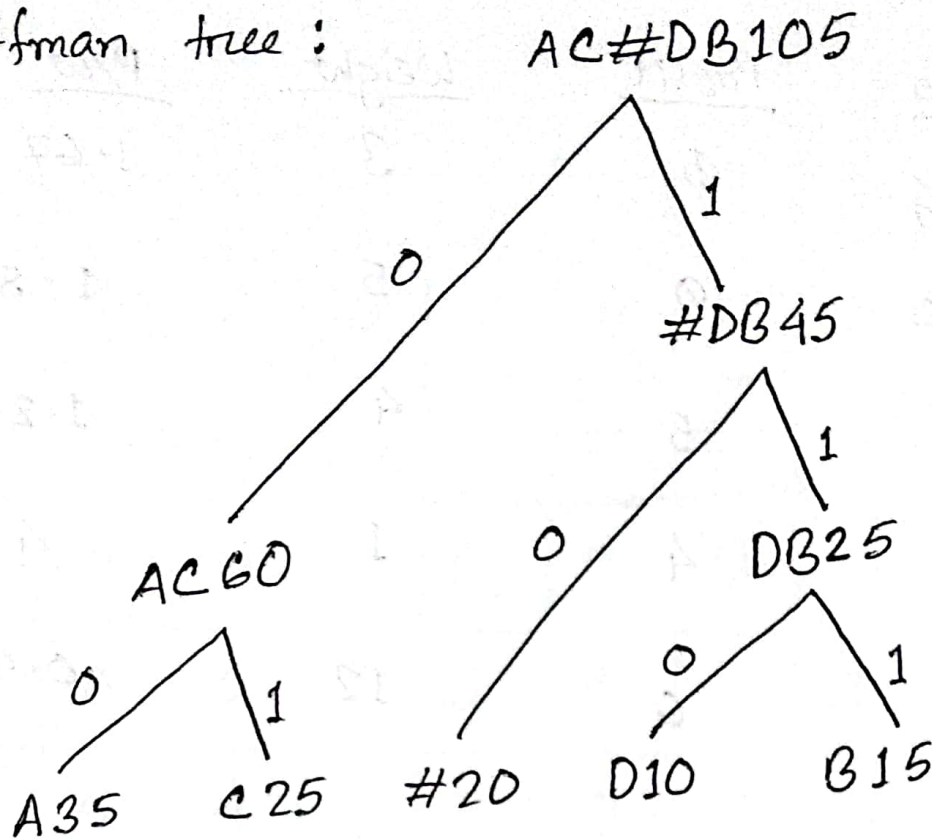
<u>Objects</u>	<u>Profit</u>	<u>Weight</u>	<u>P/w</u>
Jewelry	5	3	1.67
Sculpture	9	5	1.8
Painting	5	4	1.25
Book	4	1	4
Mummy	6	12	0.5

$$\begin{aligned}
 \therefore \text{Max profit} &: \text{Book (1)} + \text{Sculpture (5)} \\
 &= 4 + 9 \\
 &= 13
 \end{aligned}$$

\therefore Denver's profit $>$ Nairobi's profit.

\therefore Nairobi's belief doesn't remain valid.

2) i) Huffman tree :



A → 00

C → 01

→ 10

D → 110

B → 111

ii) Given code :

10 00 10 11 10 01 01
A # B A #

∴ Required message : #A#BA##

(Ans.)