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Roll No: 06

Class : SYCS

Subject : FA

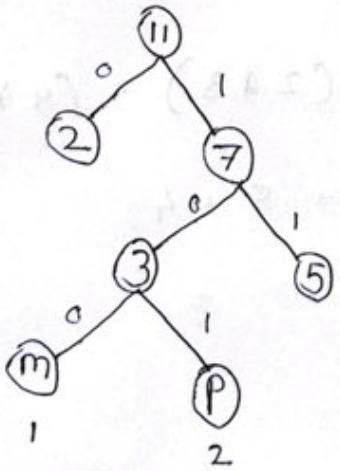
Assignment : 1

Q. Solve huffman coding.

Soln:

Character	Frequency
m	1
P	2
S	4
i	4

The generated huffman tree is:



Following are the codes:

Character	Frequency	Code	Code length
m	1	100	3
P	2	101	3
S	4	11	2
9	4	0	1

Total no. of bits = freq(m) * code.length(m)
+ freq(p) * code.length(p)
+ freq(s) * code.length(s)
+ freq(i) * code.length(i)

= (1 * 3) + (2 * 3) + (4 * 2) + (4 * 1)

= 3 + 6 + 8 + 4

= 9 + 12

Total no of bits = 21

Also avg bits per character can be found using:

$$\frac{\text{Total no. of bits req}}{\text{Total no. of chars.}} = \frac{21}{11} = 1.909$$