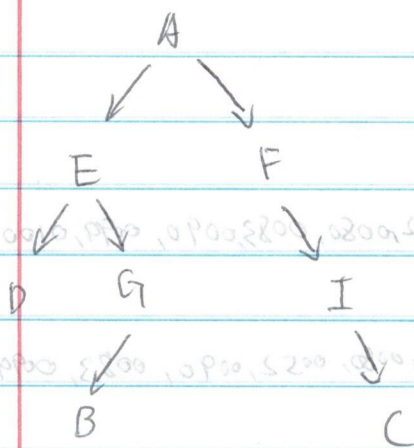


YI CHOU

1.



Height of the tree = 4

Depth of the node D = 3

Height of the node D = 1

Order = 0001, 0003, 0005, 0007, 0010, 0012, 0015, 0017, 0020, 0022, 0025, 0027, 0030, 0032, 0035, 0037, 0040, 0042, 0045, 0047, 0050, 0052, 0055, 0057, 0060, 0062, 0065, 0067, 0070, 0072, 0075, 0077, 0080, 0082, 0085, 0087, 0090, 0092, 0095, 0097, 0100, 0102, 0105, 0107, 0110, 0112, 0115, 0117, 0120, 0122, 0125, 0127, 0130, 0132, 0135, 0137, 0140, 0142, 0145, 0147, 0150, 0152, 0155, 0157, 0160, 0162, 0165, 0167, 0170, 0172, 0175, 0177, 0180, 0182, 0185, 0187, 0190, 0192, 0195, 0197, 0200, 0202, 0205, 0207, 0210, 0212, 0215, 0217, 0220, 0222, 0225, 0227, 0230, 0232, 0235, 0237, 0240, 0242, 0245, 0247, 0250, 0252, 0255, 0257, 0260, 0262, 0265, 0267, 0270, 0272, 0275, 0277, 0280, 0282, 0285, 0287, 0290, 0292, 0295, 0297, 0300, 0302, 0305, 0307, 0310, 0312, 0315, 0317, 0320, 0322, 0325, 0327, 0330, 0332, 0335, 0337, 0340, 0342, 0345, 0347, 0350, 0352, 0355, 0357, 0360, 0362, 0365, 0367, 0370, 0372, 0375, 0377, 0380, 0382, 0385, 0387, 0390, 0392, 0395, 0397, 0400, 0402, 0405, 0407, 0410, 0412, 0415, 0417, 0420, 0422, 0425, 0427, 0430, 0432, 0435, 0437, 0440, 0442, 0445, 0447, 0450, 0452, 0455, 0457, 0460, 0462, 0465, 0467, 0470, 0472, 0475, 0477, 0480, 0482, 0485, 0487, 0490, 0492, 0495, 0497, 0500, 0502, 0505, 0507, 0510, 0512, 0515, 0517, 0520, 0522, 0525, 0527, 0530, 0532, 0535, 0537, 0540, 0542, 0545, 0547, 0550, 0552, 0555, 0557, 0560, 0562, 0565, 0567, 0570, 0572, 0575, 0577, 0580, 0582, 0585, 0587, 0590, 0592, 0595, 0597, 0600, 0602, 0605, 0607, 0610, 0612, 0615, 0617, 0620, 0622, 0625, 0627, 0630, 0632, 0635, 0637, 0640, 0642, 0645, 0647, 0650, 0652, 0655, 0657, 0660, 0662, 0665, 0667, 0670, 0672, 0675, 0677, 0680, 0682, 0685, 0687, 0690, 0692, 0695, 0697, 0700, 0702, 0705, 0707, 0710, 0712, 0715, 0717, 0720, 0722, 0725, 0727, 0730, 0732, 0735, 0737, 0740, 0742, 0745, 0747, 0750, 0752, 0755, 0757, 0760, 0762, 0765, 0767, 0770, 0772, 0775, 0777, 0780, 0782, 0785, 0787, 0790, 0792, 0795, 0797, 0800, 0802, 0805, 0807, 0810, 0812, 0815, 0817, 0820, 0822, 0825, 0827, 0830, 0832, 0835, 0837, 0840, 0842, 0845, 0847, 0850, 0852, 0855, 0857, 0860, 0862, 0865, 0867, 0870, 0872, 0875, 0877, 0880, 0882, 0885, 0887, 0890, 0892, 0895, 0897, 0900, 0902, 0905, 0907, 0910, 0912, 0915, 0917, 0920, 0922, 0925, 0927, 0930, 0932, 0935, 0937, 0940, 0942, 0945, 0947, 0950, 0952, 0955, 0957, 0960, 0962, 0965, 0967, 0970, 0972, 0975, 0977, 0980, 0982, 0985, 0987, 0990, 0992, 0995, 0997, 1000

0125

0125

Height of the tree = 4

(1) 5

(2) 5

(3) 5

(4) 5

(5) 5

(6) 5

(7) 5

(8) 5

(9) 5

3. (1) 10

(2) 10

(3) 10

(4) 10

(5) 10

(6) 10

(7) 10

(8) 10

(9) 10

(10) 10

(11) 10

(12) 10

(13) 10

(14) 10

(6) 10

(7) 10

(8) 10

(9) 10

(10) 10

(11) 10

(12) 10

(13) 10

(14) 10

(15) 10

(16) 10

(17) 10

(18) 10

(19) 10

(9) 10

(10) 10

(11) 10

(12) 10

(13) 10

(14) 10

(15) 10

(16) 10

(17) 10

(18) 10

(19) 10

(20) 10

(21) 10

(22) 10

UOH) 1Y

4. (1) Height of the tree = 4

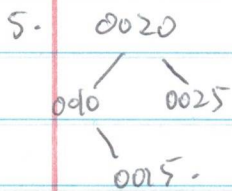
(2) Depth of the node 90 = 3

(3) Height of the node 90 = 1

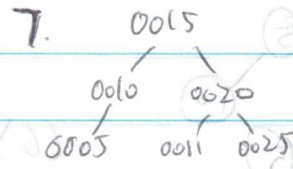
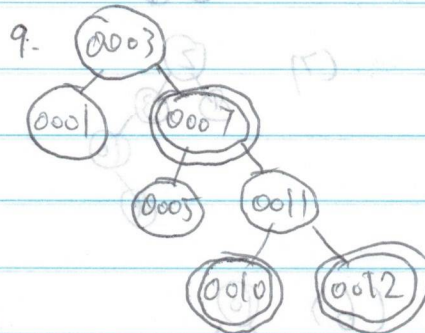
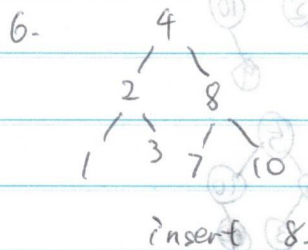
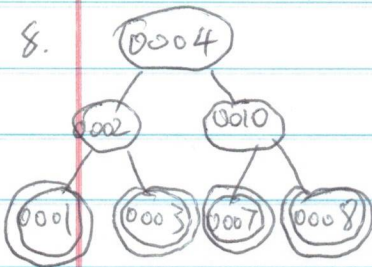
(4) In-Order = 0001, 0003, 0020, 0050, 0052, 0080, 0083, 0090, 0099, 0100, 0125, 0150, 0152.

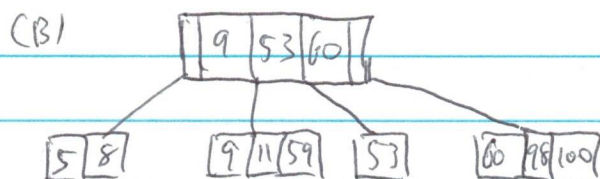
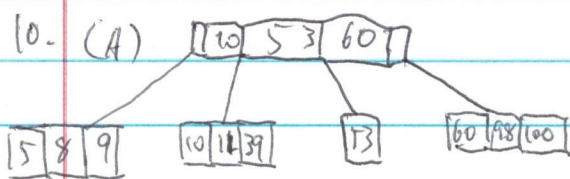
Preorder = 0100, 0050, 0003, 0001, 0020, 0080, 0052, 0090, 0083, 0099, 0150, 0125, 0152.

Postorder = 0001, 0020, 0003, 0052, 0083, 0099, 0090, 0080, 0050, 0125, 0152, 0150, 0100.



Remove 5





11. (1). Size of the internal node (M) is 3

(2) Size of the B-tree Leaf nodes (L) is 6.

(3) from given diagram, each B-tree node can hold 5 pointers.

upto 25 records height = 1

26 - 125 height = 2

126 - 625 height = 3.

626 - 3125 height = 4

So $5^m < n \leq 5^{m+1}$ height = 5.

(4) insert 30000

$5^6 < 30000 \leq 5^7$

$15625 < 30000 \leq 78125$

So height = 6.

(5) insert 2500000

$5^9 < 2500000 \leq 5^{10}$

$1953125 < 2500000 \leq 9765625$

So height = 9