

Saturday

Ans)

Given,

$$L_1 \text{ hit rate} = 100\%$$

$$L_2 \text{ miss rate} = 50\%$$

$$L_1 \text{ hit time} = 1 \text{ cycle}$$

$$L_2 \text{ hit time} = 10 \text{ cycles}$$

$$L_2 \text{ miss rate} = 5\%$$

$$L_2 \text{ miss penalty} = 100 \text{ cycles}$$

$$AMAT = L_1 \text{ hit time} + L_1 \text{ miss rate} \times L_2 \text{ miss penalty}$$

$$= L_1 \text{ hit time} + L_1 \text{ miss rate} \times (L_2 \text{ hit time} + L_2 \text{ miss rate} \times L_2 \text{ miss penalty})$$

$$= 1 + \frac{5}{100} (10 + \frac{50}{100} \times 100)$$

$$= 1 + \frac{5 \times 60}{100} \Rightarrow \boxed{4}$$

22 SUNDAY

$$CPI = CPI_{ideal} + \text{stall rate} \times \text{stall cycles}$$

$$= CPI_{ideal} + f_{mem} \times (AMAT - 1)$$

$$= \frac{1}{0.8} + 0.3(4 - 1)$$

$$= \frac{1}{0.8} + 0.9 = \frac{5}{4} + 0.9 = 2.15$$

$$= 0.465$$

$$\therefore \boxed{IPC = \frac{1}{2.15} = 0.465}$$

ASIA BOOK HOUSE

OCTOBER-2020

S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
18	19	20	21	22	23	24	25	26	27	28	29	30	31							