

$$7(i) 99^3$$

$$= (100 - 1)^3$$

$$= 100^3 - 1^3 - 3 \times 100 \times 1 (100 - 1)$$

$$= 1000000 - 1 - 300 \times 99$$

$$= 1000000 - 1 - 29700$$

$$= 1000000 - 29701$$

$$= 970299$$

$$7(ii) 102^3$$

$$= (100 + 2)^3$$

$$= 100^3 + 2^3 + 3 \times 100 \times 2 (100 + 2)$$

$$= 1000000 + 8 + 600 (102)$$

$$= 1000000 + 8 + 61200$$

$$= 1061208$$

$$7(iii) 998^3$$

$$= (1000 - 2)^3$$

$$= 1000^3 - 2^3 - 3 \times 1000 \times 2 (1000 - 2)$$

$$= 1000000000 - 8 - 6000 \times 998$$

$$= 1000000000 - 8 - 5988000$$

$$= 994011992$$

$$8(i) 8a^3 + b^3 + 12a^2b + 6ab^2$$

$$= (2a)^3 + b^3 + 3 \times (2a)^2 \times b + 3 \times (2a) \times b^2$$

$$= (2a + b)^3$$

$$= (2a + b)(2a + b)(2a + b)$$