

- Note:*(a) Section – A Each question carries 1 mark
(b) Section – B Each question carries 2 marks
(c) Section – C Each question carries 3 marks
(d) Section – D Each question carries 4 marks

Section [A]

1. Write the simplest rationalising factor of $\sqrt{18}$

2. Simplify: $\sqrt[3]{\frac{54}{250}}$

Section [B]

3. Express $0.5\bar{3}$ in the form of $\frac{p}{q}$.

4. Simplify: $(a^b + b^a)^{-1}$ where $a = 2, b = 3$

Section [C]

5. Simplify: $3\sqrt{45} - \sqrt{125} + \sqrt{200} - \sqrt{50}$

6. If $\frac{3+\sqrt{7}}{3-\sqrt{7}} + \frac{3-\sqrt{7}}{3+\sqrt{7}} = a + b\sqrt{7}$ find a^b

Section [D]

7. Simplify: $\frac{1}{\sqrt{5}+2} - \frac{1}{\sqrt{6}+\sqrt{5}} + \frac{1}{\sqrt{7}+\sqrt{6}} + \frac{2}{\sqrt{8}+\sqrt{6}}$

8. If $x = 5 - 2\sqrt{6}$ find

(a) $x + \frac{1}{x}$

(b) $x^2 + \frac{1}{x^2}$