APPLICATIONS OF DERIVATIVES

APPROXIMATIONS

EXERCISE

Q.1 Find the approximate value of $\sqrt{64.3}$

(a) 8.0675 (b) 8.03465

(c) 8.01875 (d) 8.0665

Q.2 Find the approximate value of $\sqrt{49.1}$

(a) 7.0142 (b) 7.087942

(c) 7.022 (d) 7.00714

Q.3 Find the approximate value of f(5.03), where $f(x)=4x^2-7x+2$.

(a) 67.99 (b) 56.99

(c) 67.66 (d) 78.09

Q.4 Find the approximate value of $\sqrt{11}$

(a) 3.34 (b) 3.934

(c) 3.0034 (d) 3.544

Q.5 What will be the approximate change in the surface area of a cube of side xm caused by increasing the side by 2%.

(a) 0.24x (b) $2.4x^2$

(c) $0.4x^2$ (d) $0.24x^2$

Q.6 Find the approximate value of f(4.04), where $f(x)=7x^3+6x^2-4x+3$.

(a) 346.2 (b) 544.345

(c) 546.2 (d) 534.2

Q.7 Find the approximate value of $(127)^{1/3}$.

(a) 5.0267 (b) 2.0267

(c) 8.0267 (d) 5.04

Q.8 Find the approximate change in the volume of cube of side xm caused by increasing the side by 6%.

(a) $0.18x$ (b) $0.18x^3$

(c) $0.18x^2$ (d) $1.8x^3$

Q.9 Find the approximate value of $(82)^{1/4}$.

(a) 3.025 (b) 3.05

(c) 3.00925 (d) 3.07825

Q.10 Find the approximate error in the volume of the sphere if the radius of the sphere is measured to be 6cm with an error of 0.07cm.

(a) 10.08π cm^3 (b) $10.08cm^3$

(c) $10.4\pi cm^3$ (d) $9.08cm^3$

ANSWER KEY

1. (c)

2. (d)

3. (a)

4. (a)

5. (d)

6. (c)

7. (a)

8. (b)

9. (c)

10. (a)