



SHIKSHA CLASSES

Subject : Maths - II

Question Paper

Total Marks :25

Class : XI

7 : Limits

Time : 1 Hour

SECTION - A

Q.1 : Choose the correct option :

4

i) $\lim_{x \rightarrow 5} \left(\frac{\sqrt{x+4} - 3}{\sqrt{3x-11} - 2} \right) =$

a) $\frac{-2}{9}$ b) $\frac{2}{7}$

c) $\frac{5}{9}$ d) $\frac{2}{9}$

ii) $\lim_{x \rightarrow 2} \left(\frac{x^4 - 16}{x^2 - 5x + 6} \right)$

a) 23 b) 32
c) -32 d) -16

Q.2 : Solve the following questions:

2

i) Evaluate the Given limit: $\lim_{x \rightarrow 4} \frac{4x+3}{x-2}$

ii) Evaluate the Given limit: $\lim_{x \rightarrow -1} \frac{x^{10} + x^5 + 1}{x-1}$

SECTION B

Solve the following : (ANY 3)

6

Q.3 : Evaluate the following limit :

$$\lim_{x \rightarrow 0} \left[\frac{\sqrt[3]{1-x} - \sqrt{1+x}}{x} \right]$$

Q.4 : Evaluate the following limit :

$$\lim_{x \rightarrow 1} \left[\frac{x-2}{x^2-x} - \frac{1}{x^3-3x^2+2x} \right]$$

Q.5 : Evaluate the following limit :

$$\lim_{x \rightarrow 2} \left[\frac{x^2-4}{\sqrt{x+2} - \sqrt{3x-2}} \right]$$

Q.6 : Evaluate the following limit :

$$\lim_{x \rightarrow \frac{\pi}{4}} \left[\frac{\tan^2 x - \cot^2 x}{\sec x - \cos \operatorname{csc} x} \right]$$

Q.7 : Evaluate the following limit: $\lim_{x \rightarrow 1} \left[\frac{1-x^2}{\sin \pi x} \right]$

SECTION C

Solve the following : (ANY 3)

9

Q.8 : Evaluate the following limit :

$$\lim_{x \rightarrow 0} \left(\frac{6^x + 5^x + 4^x - 3^{x+1}}{\sin x} \right)$$

Q.9 : Evaluate the following limit :

$$\lim_{x \rightarrow \infty} \left[\sqrt{x^2 + 4x + 16} - \sqrt{x^2 + 16} \right]$$

Q.10 : Evaluate the following limit :

$$\lim_{x \rightarrow 2} \left[\frac{x+2}{x^2-5x+4} + \frac{x-4}{3(x^2-3x+2)} \right]$$

Q.11 : Evaluate the following limit :

$$\lim_{x \rightarrow 2} \left[\frac{\sqrt{2+x} - \sqrt{6-x}}{\sqrt{x} - \sqrt{2}} \right]$$

Q.12 : Evaluate the following limit :

$$\lim_{x \rightarrow \frac{\pi}{6}} \left[\frac{\cos x - \sqrt{3} \sin x}{\pi - 6x} \right]$$

SECTION D

Answer the following : (ANY 1)

4

Q.13 : Evaluate the following limit :

$$\lim_{x \rightarrow \frac{\pi}{6}} \left[\frac{2 - \sqrt{3} \cos x - \sin x}{(6x - \pi)^2} \right]$$

Q.14 : Evaluate the following limit :

$$\lim_{x \rightarrow 0} \left[\frac{\cos(ax) - \cos(bx)}{\cos(cx) - 1} \right]$$

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