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Practice Set 3 Function & LIMIT

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Topics:

- 1. Function and simple examples
- 2. Limit of a Function
- 3. Standard formulae of Limit and related simple examples

DDCET final exam weightage of this topic:

3 Questions (6 Marks)

Total Practice sets of this topic:

5 (sets) \times 30 (questions) = 150 Questions

Total Practice tests of this topic:

2 (exams) \times 30 (questions) = 60 Questions

Offline / Online during lecture :

4 (lectures) X 50 (Questions) = 200 Question

1. Function and simple examples

2. Limit of a Function

3. Standard formulae of Limit and related simple examples

1. If
$$f(x) = x^2 - 2$$
, then $f(-2) =$.

2. If
$$f(x) = 2x^2 - 3x + 5$$
, then $f(-1) =$

3. If
$$f(x) = 2x^3 - 3x^2 + 5x - 3$$
, then $f(-1) = \underline{\hspace{1cm}}$.

4. If
$$f(x) = x^3 - 1$$
, then $f(2) + f(3) =$

5. If
$$f(x) = 3^x - \log_2 x$$
, then $f(2) =$

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6. If
$$f(x) = \sin x$$
, then $f(x) + f(-x) =$ _____.

a.
$$\sin^2 x$$

d. 0

7. If
$$f(x) = e^{\sin x}$$
, then $f(0) =$ _____

a. e

b. 1

c. 0

 $d. \infty$

8. If
$$f(x) = \log_2(e^{\sin x})$$
, then $f(0) = \underline{\hspace{1cm}}$.

a. e

b. 1

c. 0

 $d. \infty$

9. If
$$f(x) = \log (\tan x)$$
, then $f(\frac{\pi}{4}) =$ _____.

a. 0

b. 1

c. e

d. undefined

10.If
$$f(x) = \log_2(\sin x) + \log_2(\cos x)$$
, then $f(\frac{\pi}{4}) =$ _____

a. 0

b. -1

c. -1/2

d. 1



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11. If
$$f(x) = log(\frac{x-1}{x})$$
, then $f(-x) = \underline{\hspace{1cm}}$.

a
$$log\left(\frac{x-1}{x}\right)$$

b.
$$log\left(\frac{x}{x+1}\right)$$

c. $log\left(\frac{x}{x-1}\right)$
d. $log\left(\frac{x}{x+1}\right)$

c.
$$log\left(\frac{x}{x-1}\right)$$

d.
$$log\left(\frac{x}{x+1}\right)$$

12.If
$$f(x) = \frac{1+x}{1-x}$$
, then $f(x) \cdot f(-x) =$ ______

$$d. \infty$$

13.If
$$f(x) = \log_4 x$$
, then $f(64) =$ _____. [DDCET-2024]

14.If
$$f(x) = x^2 + 2x + 1$$
, what is $f(-3)$?

15. If
$$f(x) = 1/x$$
, then $f(2) + f(-2) =$



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16. If $f(x) = \sqrt{(x+4)}$, find f(5)

- a. 3
- b. 9
- c. $\sqrt{9}$
- d. 1

17. If
$$f(x) = |3 - x|$$
, then $f(4) =$

- a. 1
- b. -1
- c. 0
- d. 7

18.If
$$f(x) = (x^2 + 1)/x$$
, then $f(1) =$

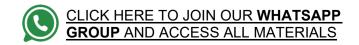
- a. 1
- b. 2
- c. 3
- d. 0

19.If
$$f(x) = 1/x^2$$
, then $f(-2) =$

- a. 1
- b. 1/4
- c. -4
- d. ½

20.If
$$f(x) = x^2 - 9$$
, then $f(-3) =$

- a. 0
- b. -6
- c. 6
- d. -9







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21. If
$$f(x) = \log_5(x) + \frac{x}{5}$$
, then $f(25) =$

- a. 2
- b. 3
- c. 5
- d. 7

22.If
$$f(x) = 1/(x + 1)$$
, then $f(-1) =$

- a. 0
- b. 1
- $c. \infty$
- d. -1

23.If
$$f(x) = log_2(8x)$$
, then $f(1) =$

- a. 2
- b. 3
- c. 1
- d. 4

24. If
$$f(x) = (3x - 1)/(x + 1)$$
, then $f(0) =$

- a. -1
- b. 1
- c. 0
- d. 3

25.If
$$f(x) = x^2$$
, then $f(x) + f(-x) =$

- a. 0
- b. $2x^2$
- $c. -2x^2$
- $d. x^2$





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26. If $f(x) = \sqrt{(9 - x^2)}$, then the domain of f(x) is:

- a. $x \in \mathbb{R}$
- b. $x \le 3$
- c. $|x| \le 3$
- d. $x \ge 3$

27. The function $f(x) = \sqrt{(x-4)}$, is defined for:

- a. $x \ge 0$
- b. $x \ge 4$
- c. $x \le 4$
- d. x > 0

28. The codomain of f: $R \rightarrow R$ given by $f(x) = x^2$ is:

- a. R
- b. R+
- c. R {0}
- d. R-

29. The image of the function $f(x) = x^2$ for $x \in [-2, 2]$ is:

- a. [0, 4]
- b. $(-\infty, \infty)$
- c. [2, 4]
- d.[1,4]

30. Which of the following is not in the domain of f(x) = log(x - 3)?

- a. 4
- b. 5
- c. 3
- d. 10

