UNIT I

Taylor's and Maclaurin's Series

1) The expansion of $f(x)$ in ascending powers of x about $a = 0$ is
   a) $f(0) - xf'(0) + \frac{x^2}{2!}f''(0) - \frac{x^3}{3!}f'''(0) + \cdots$
   b) $f(0) + xf'(0) + \frac{x^2}{2!}f''(0) + \frac{x^3}{3!}f'''(0) + \cdots$
   c) $-f(0) - xf'(0) - \frac{x^2}{2!}f''(0) - \frac{x^3}{3!}f'''(0) - \cdots$
   d) $f(0) + xf'(0) + x^2f''(0) + x^3f'''(0) + \cdots$

2) Expansion of $e^{1/x}$ in powers of x is
   a) $\frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3} + \cdots$
   b) $1 + \frac{1}{x} + \frac{1}{2!x^2} + \frac{1}{3!x^3} + \frac{1}{4!x^4} - \cdots$
   c) $1 - \frac{1}{x} + \frac{1}{2!x^2} - \frac{1}{3!x^3} + \frac{1}{4!x^4} - \cdots$
   d) $x - \frac{1}{x} + \frac{1}{x^2} - \frac{1}{x^3} + \cdots$

3) Expansion of $\log(1 - x^4) - \log(1 - x)$ in ascending powers of x is
   a) $-x - \frac{x^2}{2} - \frac{x^3}{3} - \frac{3}{4}x^4 + \cdots$
   b) $x + \frac{x^2}{2} + \frac{x^3}{3} - \frac{3}{4}x^4 + \cdots$
   c) $x + \frac{x^2}{2!} + \frac{x^3}{3!} - \frac{3}{4!}x^4 + \cdots$
   d) $-x + \frac{x^2}{2} + \frac{x^3}{3} - \frac{3}{4}x^4 + \cdots$

4) The coefficient of $\left(x - \frac{\pi}{3}\right)^2$ in the expansion of $\log\cos x$ about $\frac{\pi}{3}$ is
   a) $-\sqrt{3}$
   b) $\sqrt{3}$
   c) -2
   d) 2

5) The expansion of $f(x + h)$ in ascending powers of h is
   a) $f(h) + xf'(h) + \frac{x^2}{2!}f''(h) + \frac{x^3}{3!}f'''(h) + \cdots$
   b) $f(x) + hf'(x) + \frac{h^2}{2!}f''(x) + \frac{h^3}{3!}f'''(x) + \cdots$
   c) $f(h) - xf'(h) + \frac{x^2}{2!}f''(h) - \frac{x^3}{3!}f'''(h) + \cdots$
   d) $f(x) - hf'(x) + \frac{h^2}{2!}f''(x) - \frac{h^3}{3!}f'''(x) + \cdots$

6) The coefficient of x^2 in the expansion of $tan\left(x + \frac{\pi}{4}\right)$ in ascending powers of x is
   a) 1 b) 4/3!
   c) 2 d) 3!

7) The coefficient of x^{10} in the expansion of $\log(1 - x^2)$ is
   a) $-1/10$ b) $1/5$
   c) $1/10$ d) $-1/5$

8) The expansion of $1/x$ about $x = 1$ upto first three terms is
   a) $1 - (x - 1) + (x - 1)^2 - \cdots$
   b) $1 + (x - 1) + (x - 1)^2 + \cdots$
   c) $1 + (x - 1) + \frac{(x-1)^2}{2!} + \cdots$
   d) $1 - (x - 1) + \frac{(x-1)^2}{2!} - \cdots$

9) In the expansion of $x^3 + 7x^2 + x - 6$ in powers of $(x - 3)$ the constant term is
   a) 6 b)33
   c) 87 d)32

10) The expansion of $\log(1-x)$ is
a) $1+x+x^2+x^3+x^4+\cdots$
b) $1-x+x^2-x^3+x^4-\cdots$
c) $x+\frac{x^2}{2}+\frac{x^3}{3}+\frac{x^4}{4}+\cdots$
d) $-x-\frac{x^2}{2}-\frac{x^3}{3}-\frac{x^4}{4}-\cdots$

11) The expansion of $e^x \log(1+x)$ is
a) $1+x+\frac{x^2}{2!}+\frac{x^3}{3!}+\cdots$
b) $1-x+\frac{x^2}{2!}-\frac{x^3}{3!}+\cdots$
c) $x+\frac{x^2}{2!}+\frac{x^3}{3!}+\cdots$
d) $x-\frac{x^2}{2!}-\frac{x^3}{3!}-\cdots$

12) In the expansion of $\sin x$ about $x=\pi/2$, the coefficient of $\left(x-\frac{\pi}{2}\right)$ is
a) 0 b)$1/24$
c) 1 d)$1/6$

13) The expansion of $1/(1+x)$ in ascending powers of x is
a) $-1-x-x^2-x^3-\cdots$
b) $1+x+x^2+x^3+\cdots$
c) $1+\frac{x^2}{2!}+\frac{x^4}{4!}+\cdots$
d) $1-x+x^2-x^3+\cdots$

14) The coefficient of $(x-3)^4$ in the expansion of $x^4-3x^3+2x^2-x+1$ in powers of $(x-3)$ is
a) 1 b) -1
c) 9 d)-9

15) Expansion of $\sinh x$ in ascending powers of x is
a) $1+x+\frac{x^2}{2!}+\frac{x^3}{3!}+\cdots$
b) $x-\frac{x^3}{3!}+\frac{x^5}{5!}-\cdots$
c) $1+\frac{x^2}{2!}+\frac{x^4}{4!}+\cdots$
d) $x+\frac{x^3}{3!}+\frac{x^5}{5!}+\cdots$

16) Expansion of $\cosh x$ in ascending powers of x is
a) $1+x+\frac{x^2}{2!}+\frac{x^3}{3!}+\cdots$
b) $x-\frac{x^3}{3!}+\frac{x^5}{5!}-\cdots$
c) $1+\frac{x^2}{2!}+\frac{x^4}{4!}+\cdots$
d) $x+\frac{x^3}{3!}+\frac{x^5}{5!}+\cdots$

17) The n^{th} term in the expansion of e^{-x} is
a) $x^{n-1}/(n-1)!$
b) $((-1)^{n-1}x^{n-1})/(n-1)!$
c) $x^n/n!$
d) $((-1)^n x^n)/n!$

18) The coefficient of x in the expansion of $e^x \cos x$ is
a) 0 b)-1
c) 1 d)1/2

19) The constant term in the expansion of $\tan^{-1}\left(\frac{p-qx}{q+px}\right)$ is
a) $\tan^{-1}(p/q)$ b)$\tan(p/q)$
c) $\tan^{-1}(q/p)$ d)$\tan(q/p)$

20) First two terms in expansion of $\tan^{-1}(1+x)$ is
a) $\frac{\pi}{4}+\frac{x}{2}-\cdots$
b) $x-\frac{x^3}{3!}+\cdots$
c) $\frac{\pi}{4}-\frac{x}{2}-\cdots$
d) $x+\frac{x^3}{3!}+\cdots$

21) The first three terms in the power series for $\log(1+\sin x)$ are
a) $x-\frac{1}{2}x^3+\frac{1}{4}x^5$
b) $x+\frac{1}{2}x^3+\frac{1}{4}x^5$
c) $-x-\frac{1}{2}x^3+\frac{1}{4}x^5$
d) $x-\frac{1}{2}x^2+\frac{1}{6}x^3$

22) In the Taylor series expansion of $e^x + \sin x$ about the point $x = \pi$ the co-efficient of $(x-\pi)^2$ is
a) e^π
b) $0.5e^\pi$
c) $e^\pi + 1$
d) $e^\pi - 1$

23) Which of the following functions would have only odd powers of x in its Taylor series expansion about the point $x = 0$.
a) $\sin(x^3)$
b) $\sin(x^2)$
c) $\cos(x^2)$
d) $\cos(x^3)$

24) The limit of the series $f(x) = x - \frac{x^3}{3!} + \frac{x^5}{5!} - \frac{x^7}{7!} + \cdots$ as x approaches $\frac{\pi}{2}$ is
a) $2\pi/3$
b) $\pi/2$
c) $\pi/3$
d) 1

25) The Taylor series expansion of $\frac{\sin x}{x-\pi}$ at $x = \pi$ is given by
a) $1 + \frac{(x-\pi)^2}{3!}$
b) $-1 - \frac{(x-\pi)^2}{3!}$
c) $1 - \frac{(x-\pi)^2}{3!}$
d) $-1 + \frac{(x-\pi)^2}{3!}$

26) Expansion of $\log(1 + x + x^2 + x^3 + x^4)$ is
a) $-x - \frac{x^2}{2} - \frac{x^3}{3} - \frac{x^4}{4} - \cdots$
b) $x + \frac{x^2}{2} + \frac{x^3}{3} + \frac{x^4}{4} - \cdots$
c) $x - \frac{x^2}{2} + \frac{x^3}{3} - \frac{x^4}{4} + \cdots$
d) $x + \frac{x^2}{2} + \frac{x^4}{3} + \frac{x^5}{4} - \cdots$

27) Expansion of $\sin x \cosh x$
a) $x + \frac{x^3}{3} + \frac{x^5}{30} + \cdots$
b) $x - \frac{x^3}{3} - \frac{x^5}{30} + \cdots$
c) $x + \frac{x^3}{3} - \frac{x^5}{30} + \cdots$
d) None

28) Expansion of $\log\left(\frac{\tan x}{x}\right)$
a) $\frac{x^2}{3} - \frac{7}{90}x^4 + \cdots$
b) $-\frac{x^2}{3} - \frac{7}{90}x^4 + \cdots$
c) $x + \frac{x^2}{3} - \frac{7}{90}x^4 + \cdots$
d) $\frac{x^2}{3} + \frac{7}{90}x^4 + \cdots$

29) Expansion of $\sin(e^x - 1)$ is
a) $x + \frac{x^2}{2} - \frac{5}{24}x^4 + \cdots$
b) $x + \frac{x^2}{2} + \frac{5}{24}x^4 + \cdots$
c) $x - \frac{x^2}{2} - \frac{5}{24}x^4 + \cdots$
d) None

30) The limit of the series $f(x) = 1 - x + x^2 - x^3 + x^4 - \cdots$ as x approaches ½ is
a) 2/3
b) 1/3
c) 1
d) 4/3

31) The limit of the series $f(x) = 1 + x + x^2 + x^3 + x^4 + \cdots$ as x Approaches $\frac{1}{2}$ is
a) 4
b) ∞
c) 3
d) 2

32) Representation of
$(x-2)^4-3(x-2)^3+4(x-2)^2+5$
in powers of x is
a) $61-84x+4x^2-11x^3+x^4$
b) $61+84x-4x^2-11x^3+x^4$
c) $61+84x+4x^2-11x^3+x^4$
d) $61+84x+4x^2-11x^3-x^4$

33) The first three terms in expansion of
$x^4-3x^3+2x^2-x+1$
in powers of $(x-3)$ is
a) $16-38\,(x-3)+29(x-3)^2$
b) $16+38\,(x-3)-29(x-3)^2$
c) $16-38\,(x-3)-29(x-3)^2$
d) $16+38\,(x-3)+29(x-3)^2$

34) The Maclaurin series of
$f(z)=1/(1+z^2)$ is
a) $1-z^2+z^4-z^6+\cdots$
b) $1+z^2+z^4+z^6+\cdots$
c) $1-z^2-z^4-z^6+\cdots$
d) None

Indeterminate form

35) $\lim_{x\to1}\frac{x-x^x}{1+\log x-x}$ is
a) 0 b)1
c) ∞ d)2

36) If $\lim_{x\to0}\frac{\sin 2x+p\sin x}{x^3}$ is finite then the value of p is
a) 0 b)1
c) -2 d)2

37) $\lim_{x\to0}\frac{\log(\tan x)}{\log x}$ is
a) 0 b) 1
c) -1 d) 2

38) $\lim_{x\to0}\frac{\log(\sin 2x)}{\log(\sin x)}$ is
a) 0 b) -1
c) 1 d) 2

39) $\lim_{x\to0} x\log x$ is
a) 0 b) -1
c) 1 d) 2

40) $\lim_{x\to0}\left(\frac{1}{x}-\frac{1}{\sin x}\right)$ is
a) 0 b)-1
c)1 d) 2

41) The value of $\lim_{x\to2}\frac{xe^{-x}-2e^{-2}}{x-2}$ is
a) e^{-2} b)1
c) $-e^{-2}$ d)-1

42) The value of $\lim_{x\to\infty}\left(\frac{1}{x}\right)^{1/x}$ is
a) -1 b) 0
c) 1 d) 2

43) The value of $\lim_{x\to0}\log_{\tan x}\sin x$ is
a) -1 b) 0
c) 1 d) 2

44) The value of $\lim_{x\to0}\sin x\log x$ is
a) -1 b) 0
c) 1 d) 2

45) The value of $\lim_{x\to0} x\log\sin x$ is
a) -1 b) 0
c) 1 d) 2

46) The value of $\lim_{x\to y}\frac{x^y-y^x}{x^x-y^y}$ is
a) $\frac{1-\log y}{1+\log y}$ b) $\frac{1+\log y}{1-\log y}$
c) $\frac{1-\log y}{-1-\log y}$ d) $\frac{1+\log y}{-1-\log y}$

47) The value of $\lim_{x\to0}\frac{(1-x)^n-1}{x}$ is
a) 0 b) n^2
c) $-n$ d) 1

48) The value of $\lim_{x\to a} x\sin(a/x)$ is
a) a b) $1/a$
c) 0 d) 1

49) The value of $\lim_{x\to 0}\frac{\log(1-x^2)}{\log\cos x}$ is
a) 2 b) -2
c) 4 d) -4

50) The value of $\lim_{x\to 0}\left[\frac{a^x+b^x}{2}\right]^{1/x}$ is
a) ab b) $\sqrt{ab}$
c) $-ab$ d) $-\sqrt{ab}$

51) The value of $\lim_{x\to 0}\frac{ae^x-b\cos x+ce^{-x}}{x^2}$ is finite then
a) $a-b-c=0$ b) $a+b+c=0$
c) $-a+b-c=0$ d) $2a+b-3c=0$

52) The value of $\lim_{x\to 0}\frac{\sin 2x+p\sin x}{x^3}$ is finite then value of p is
a) 1 b) 2
c) -1 d) -2

53) The value of $\lim_{x\to 0}(a^x+x)^{1/x}$ is
a) $1/a$ b) 0
c) $e\ a$ d) $-\sqrt{e}$

54) The value of $\lim_{x\to 0}\frac{e^x-1-x}{x^2}$ is
a) 1 b) $1/2$
c) -1 d) 2

55) The value of $\lim_{x\to 1}\frac{x^2-3x+2}{x-1}$ is
a) 1 b) -1
c) -3 d) 2

56) The value of $\lim_{x\to 1}\frac{x^2+5}{x^2+4x+3}$ is
a) 1 b) -1
c) -3 d) 2

57) The value of $\lim_{x\to\infty}\left(\frac{x^2+2x-1}{2x^2-3x-2}\right)^{\frac{2x+1}{2x-1}}$ is equal to
a) 1 b) 0
c) 1/2 d) $e^{1/2}$

58) The value of $\lim_{x\to\infty}\left(1+\frac{2}{x}\right)^x$ is
a) 1 b) e^2
c) -3 d) 2

59) The value of $\lim_{x\to\infty}\left(\frac{x-3}{x+2}\right)^x$ is
a) 5 b) e^5
c) -5 d) e^{-5}

60) The value of $\lim_{x\to 1}(1+\sin\pi x)^{\cot\pi x}$ is equal to
a) -1 b) e^{π}
c) e^{-1} d) e

61) If $\lim_{x\to 0}\frac{\sin 2x+p\sin x}{x^3}$ is finite then value of p is
a) 2 b) -2
c) 1 d) -1

62) If $\lim_{x\to 0}\frac{a\,e^x-b\cos x+c\,e^{-x}}{x\sin x}=2$ then
a) $a-b+c=0$ and $a-c=0$
b) $a+b+c=0$ and $a-c=0$
c) $a-b+c=0$ and $a+c=0$
d) $a+b+c=0$ and $a+c=0$

63) The value of $\lim_{x\to 0}x^x$ is
a)-1 b)0
c)1 d)∞

64) The value of $\lim_{x\to 0}x\log x$ is
a) -1 b) 0
c) 1 d) ∞

65) The value of $\lim_{x\to\infty} x^{1/x}$ is
a) 1 b) 0
c) ∞ d) $-\infty$

66) It is given that
$f(x)=\frac{ax+b}{x+1}$, $\lim_{x\to 0} f(x)=2$
and $\lim_{x\to\infty} f(x)=1$, then value of $f(-2)$ is
a) 1 b) 0
c) ∞ d) e

67) $\lim_{x\to\infty} x^{1/x}$ is equal to
a) e b) 0
c) ∞ d) 1

68) The value of $\lim_{x\to 0}\frac{e^x-1}{x}$ is
$a)\ 1 \quad b)\ 0 \quad c)\ \infty \quad d)\ none$

69) The value of $\lim_{x\to 0}\frac{a^x-b^x}{x}$ is
a) $\log\frac{a}{b}$ b) $\log\frac{b}{a}$
c) $\log a$ d) $\log b$

70) The value of $\lim_{x\to 0}\frac{x^2+8x}{x^2+4x+5}$ is
$a)\ 2 \quad b)\ 0 \quad c)\ \infty \quad d)\ none$

71) The value of $\lim_{x\to 0}\frac{(1+x)^n-1}{x}$ is
$a)\ 1 \quad b)\ n-1 \quad c)\ n \quad d)\ none$

72) The value of $\lim_{x\to 0}\frac{\log(\sin 2x)}{\log(\sin x)}$ is
$a)\ 1 \quad b)\ 2 \quad c)\ 1/2 \quad d)\ 0$

73) The value of $\lim_{x\to 0}\frac{\log(\tan 2x)}{\log(\tan x)}$ is
$a)\ 2 \quad b)\ 1 \quad c)\ 1/2 \quad d)\ none$

74) The value of $\lim_{x\to 0}\log_{\tan x}\tan 2x$ is
$a)\ 2 \quad b)\ 1/2 \quad c)\ 1 \quad d)\ none$

75) The value of $\lim_{x\to 0}\frac{\log(\tan x)}{\log x}$ is
$a)\ 0 \quad b)\ \infty \quad c)\ 1/2 \quad d)\ 1$

76) The value of $\lim_{x\to\infty} x^{55}e^{-2x}$ is
$a)\ 1 \quad b)\ 0 \quad c)\ \infty \quad d)\ none$

77) If $\lim_{x\to 0}\frac{a\sin 2x-b\tan x}{x^3}$ exists then which of the following is true
a) $a-b=0$ b) $2a+b=0$
c) $2a-b=0$ d) $a+b=0$

78) If $\lim_{x\to 0}\frac{a\cos x-a+bx^2}{x^4}=\frac{1}{12}$ then which of the following is true
a) $2b+a=0$ b) $2b-a=0$
c) $2a-b=0$ d) $a+b=0$

79) If $\lim_{x\to 0}\frac{\sin x+ax+bx^3}{x^3}=0$ then which of the following is true
a) $a=-1$ b) $2b-a=0$
c) $2a-b=0$ d) none

80) The value of $\lim_{x\to\infty}\frac{1+2+3+\cdots+x}{x^2}$ is
$a)\ 1/3 \quad b)\ 1/6 \quad c)\ ½ \quad d)\ 0$

81) The value of $\lim_{x\to\infty}\frac{1^2+2^2+3^2+\cdots+x^2}{x^3}$ is
$a)\ 1/6 \quad b)\ 1/3 \quad c)\ 1/2 \quad d)\ 0$

82) If $\lim_{\theta\to 0}\frac{(a+b\cos\theta)\theta-c\sin\theta}{\theta^5}=1$ then
a) $a-b-c=0$ b) $a+b-c=0$
c) $a+b+c=0$ d) $b-a-c=0$

83) If $\lim_{x\to 0}\frac{a\sin 2x-b\tan x}{x^3}=0$ then
a) $a=-1/2, b=-1$
b) $a=1/2, b=-1$
c) $a=-1/2, b=1$
d) $a=1/2, b=1$

84) The value of $\lim_{x\to 0}\frac{\tan x}{x}$ is
$a)\ 1 \quad b)\ -1 \quad c)\ -3 \quad d)\ 0$

85) If $f(x)$ and $g(x)$ are 2 functions such that $f(a) = 0$ and $g(a) = 0$ then $\lim_{x\to a} \frac{f(x)}{g(x)}$ is equal to

$a)\ \lim_{x\to a} \frac{f''(x)}{g(x)}$ $b)\ \lim_{x\to a} \frac{f(x)}{g'(x)}$

$c)\ \lim_{x\to a} \frac{f'(x)}{g(x)}$ $d)\ \lim_{x\to a} \frac{f'(x)}{g'(x)}$

86) The value of $\lim_{x\to 0} \frac{a^x-1}{x}$ is

a) a b) $\log a$ c) $\log e$ d) e

87) The value of $\lim_{x\to 0} \frac{\cosh x-\cos x}{x^2}$ is

a) 0 b) ∞ c) 1 d) -1

88) If $\lim_{x\to 0} \frac{x(1+a\cos x)-b\sin x}{x^3}$ then

a) $b-a=1$ b) $a-b=1$

c) $a-b=0$ d) $a-b=3$

89) $\lim_{x\to 1} \frac{f(x)-2}{f(x)+2} = 0$, then $\lim_{x\to 1} f(x)$ is equal to

$a)\ 1$ $b)\ -1$ $c)\ -2$ $d)\ 2$

90) $\lim_{x\to 1} \frac{x^2-1}{x-1}$ is equal to

$a)\ \infty$ $b)\ 0$ $c)\ 2$ $d)\ 1$

91) $\lim_{x\to \infty} \frac{x^3-\cos x}{x^2+(\sin x)^2}$ is equal to

$a)\ \infty$ $b)\ 0$ $c)\ 2$ $d)\ 1$

92) $\lim_{x\to 3} \frac{2x^2-7x+3}{5x^2-12x-9}$ is equal to

$a)\ -1/3$ $b)\ 5/18$ $c)\ 0$ $d)\ 2/5$

93) $\lim_{n\to 0} e^{-\frac{n}{\log n}}$ is equal to

$a)\ 1$ $b)\ -1$ $c)\ 0$ $d)\ does\ not\ exist$

94) $\lim_{n\to 0} 8^{-\frac{n}{\log n}}$ is equal to

$a)\ 1$ $b)\ -1$ $c)\ 0$ $d)\ does\ not\ exist$

95) $\lim_{n\to \infty} \left(1+\frac{1}{n}\right)^{\frac{1}{n}} \left(1+\frac{2}{n}\right)^{\frac{1}{n}} \cdots \left(1+\frac{n}{n}\right)^{\frac{1}{n}}$ is equal to

$a)\ 1$ $b)\ 2/e$ $c)\ 3/e$ $d)\ 4/e$

96) $\lim_{x\to 0} \frac{\sin^2 x}{x}$ is equal to

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

97) $\lim_{x\to \infty} \frac{\log x}{x^n}$, $n > 0$ is equal to

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

98) $\lim_{x\to \infty} \frac{x^m}{e^x}$, $m > 0$ is equal to

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

99) $\lim_{n\to 0} 5^{-\frac{n}{\log n}}$ is equal to

$a)\ 1$ $b)\ -1$ $c)\ does\ not\ exist$ $d)\ 0$

100) $\lim_{x\to \infty} \frac{x^m}{e^{x+2x^3}}$, $m > 0$ is equal to

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

101) $\lim_{x\to \infty} \frac{x^m}{e^{5x-3x+78}}$, $m > 0$ is equal to

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

102) The value of $\lim_{x\to 0} \left(\frac{1^x+2^x+3^x+4^x}{4}\right)^{\frac{1}{x}}$ is

$a)\ (24)^{1/4}$ $b)\ 24$ $c)\ 10$ $d)\ (6)^{1/4}$

103) The value of $\lim_{x\to \infty} x^{55}\, e^{-2x}$ is

$a)\ 1$ $b)\ 0$ $c)\ \infty$ $d)\ none\ of\ these$

104) The value of $\lim_{x\to 0} \frac{\sin x}{x}$ is

$a)\ 1$ $b)\ -1$ $c)\ -3$ $d)\ 0$

105) The value of $\lim_{x\to 0} \frac{(1+x)^n-1}{x}$ is

$a)\ 1$ $b)\ n-1$ $c)\ n$ $d)\ none$

106) The value of $\lim_{x\to 0} \frac{(1+x)^5-1}{x}$ is

$a)\ 1$ $b)\ 4$ $c)\ 5$ $d)\ none$

107) The value of $\lim_{x\to 0} \frac{(1+x)^9-1}{x}$ is

a) 1 b) 8 c) 9 d) none

Unit - IV

Taylor's & Maclaurin's Theorem , Indeterminant Form

Answer Key

Q.No.	Ans	Q.No.	Ans	Q.No.	Ans	Q.No.	Ans
1	b	28	d	55	b	82	b
2	b	29	a	56	a	83	a
3	b	30	a	57	c	84	A
4	d	31	d	58	b	85	d
5	b	32	c	59	d	86	b
6	c	33	d	60	c	87	c
7	a	34	a	61	b	88	a
8	d	35	d	62	a	89	d
9	c	36	c	63	c	90	c
10	c	37	b	64	b	91	a
11	c	38	c	65	a	92	b
12	a	39	a	66	b	93	d
13	d	40	a	67	d	94	d
14	a	41	c	68	a	95	a
15	d	42	b	69	a	96	a
16	c	43	c	70	a	97	a
17	b	44	b	71	c	98	a
18	c	45	b	72	a	99	c
19	a	46	a	73	b	100	a
20	a	47	c	74	c	101	a
21	d	48	a	75	d	102	a
22	b	49	b	76	b	103	b
23	a	50	b	77	c	104	a
24	d	51	c	78	b	105	c
25	d	52	d	79	a	106	c
26	b	53	c	80	c	107	c
27	c	54	b	81	b		