Question No.	Questions
1.	The sequence y_n where $y_n = 1 + \frac{1}{2!} + \frac{1}{3!} + \cdots + \frac{1}{n!}$ is (A) Convergent (B) Divergent (C) Oscillatory (D) Cannot be obtained
2.	The value of $\lim_{n\to\infty} \left\{\left(1+\frac{1}{n}\right)\left(1+\frac{2}{n}\right)\ldots\left(1+\frac{n}{n}\right)\right\}^{\frac{1}{n}}$ is (A) $\frac{4}{e}$ (B) e^2 (C) $\sqrt{e}$ (D) $\frac{e}{4}$
3.	The sequence $[nx^n]$ is a null sequence for (A) All real values of x (B) $\lvert x\rvert < 1$ (C) $x > 0$ (D) The sequence does not converge for any real x
4.	$\lim_{x\to 0} \sin\frac{1}{x}$ is (A) 0 (B) 1 (C) ∞ (no limit value) (D) Does not exist.
5.	$\lim_{x\to\infty} \frac{[x]+x}{x^2}$ where $[x]$ is the largest integer less than x is [Hint: use Sandwich theorem] (A) 0 (B) 1 (C) 2 (D) Does not exist.
6.	The value of $\lim_{x\to\infty} \frac{\lvert\cos x+\sin x\rvert}{x^2}$ is equal to [Hint: use Sandwich theorem] (A) 0 (B) 1 (C) $\frac{\pi}{2}$ (D) Does not exist.
7.	$\lim_{n\to\infty} \sqrt[n]{n}$ is equal to (A) 1 (B) -1 (C) 0 (D) 2
8.	The value of $\lim_{n\to\infty} \sum_{r=1}^{n} \frac{n^2}{(n^2+r^2)^{\frac{3}{2}}}$ is (A) $\frac{1}{2}$ (B) 2 (C) $\sqrt{2}$ (D) $\frac{1}{\sqrt{2}}$
9.	The infinite series $1 + 2(x-3) + 3(x-3)^2 + 4(x-3)^3 + \ldots\ldots\ldots converges\ for\ all$ Values of x in the interval (A) $]-\infty, 4[$ (B) $[4,6[$ (C) $[4,9[$ (D) $[9,\infty[$
10.	$\lim_{n\to\infty} \frac{1}{\sqrt{n}}\left(1+\frac{1}{\sqrt{2}}+\cdots+\frac{1}{\sqrt{n}}\right)$ (A) $\frac{1}{2}$ (B) 1 (C) 2 (D) 0

11.	$\lim_{n\to\infty} \frac{(n!)^{1/n}}{n}$ equals to (A) e (B) $\frac{1}{e}$ (C) 1 (D) ∞
12.	The series $\sum_{n=1}^{\infty} \frac{n!}{n^n}$ is (A) convergent (B) divergent (C) bounded (D) none
13.	The nth term of the sequence $\{2, -\frac{3}{2}, \frac{4}{3}, -\frac{5}{4}, \ldots\}$ is (A) $1+\frac{1}{n}$ (B) $(-1)^{n-1}(1-\frac{1}{n})$ (C) $(-1)^{n-1}(1+\frac{1}{n})$ (D) none
14.	$\lim_{n\to\infty}\left\{\frac{1}{n+1}+\frac{1}{n+2}+\ \ldots\ldots\ldots\ldots+\frac{1}{n+n}\right\} is -$ $(A)\frac{1}{2}\ log2$ (B) 2 (C) $log2$ (D) $\pi/4$
15.	$A\ positive\ term\ series\ \sum \frac{1}{n^p}$ $(A)\ Diverges\ for\ p>1$ $(B)\ Converges\ for\ p<1$ $(C)\ \ Converges\ for\ p>1$ $(D)\ Always\ ascillates$
16.	$The\ sequence\ \{u_n\}\ is\ defined\ by\ u_{n+2}=\frac{1}{2}(u_{n+1}+u_n)\ for\ n\geq 1\ and$ $0<u_1<u_2\ the\ sequence\{u_n\}$ $(A)0$ $(B)\ \frac{1}{2}(u_2-u_1)$ $(C)\ \frac{u_1+2u_3}{3}$ $(D)\ \frac{u_2+u_1}{2}$
17.	$The\ series\ 1+a+a^2+\ \ldots\ldots\ldots is\ convergent\ if$ $(A)\ \ a>1$ $(B)\ a<-1$ $(C)\ \lvert a\rvert<1$ $(D)\ \lvert a\rvert=1$