S.S.R. DEGREE COLLEGE,(AUTONOMOUS) NIZAMABAD (C.C:5029)

II SEMESTER INTERNAL ASSESSMENT I EXAMINATIONS

MATHS

QUESTION BANK

I. Multiple Choice Questions

1. A Sequence can have atmost ____ limits
   a)a b)1 c)∞ d)None of the above
2. The sequence $(1+\frac{(1-1)^n}{n})$ is ___
   a)Convergent b)Divergent c)Oscillatory d)None
3. If Sn is unbounded decreasing sequence then
   a)lim S_n =+ ∞ b)limS_n = -∞ c)limS_n =finite d)limSn=0
4. If Sn is unbounded increasing sequence then
   a)limSn=+∞ b)limSn=-∞ c)limSn=finite d)limSn=0
5. $\lim_{n\to\infty} n^{\frac{1}{n}}$ = _____
   a)o b)1 c)2 d)3
6. Lim $a^{1/n}$ = _____ for a> 0
   a)o b)1 c)3 d)2
7. If lim Sn=0 then lim lsnl=
   a)o b)1 c)2 d)None
8. The limit point of the sequence $\left\{n^{1/n}\right\}$ is
   a)1 b)0 c) d)
9. Lim $\sqrt{n+1}-\sqrt{n}$
   a)1 b)2 c)0 d)3
10. $\lim_{n\to\infty} \frac{x^n}{n!}$ =_____
    a)
11. Lim $\frac{2logn}{n}$ = _____
    a)0 b)1 c)2 d)3
12. The sequence $\{(-1)^n\}$ has _____
    a)one limit pt b)Two limit pts c)No limits pts d)None
13. The limit point of $\left\{\frac{1}{2^n}\right\}$ is
    a)$\frac{1}{2}$ b)0 c)1 d)None
14. The set of limit points of $\left\{\frac{1}{n}/n\epsilon N\right\}$
    a)$\{0\}$ b)$\{1\}$ c)$\{\emptyset\}$ d)None
15. Lim $(1+\frac{1}{n})^n$ =_____
    a)1 b)e c)0 d)None
16. $\varepsilon\frac{logn}{n^p}$ is convergent when
    a)p>1 b)P<1 c)P>2 d)None

17. The limit of sequence (Sn) where $1+\frac{1}{1!}+\frac{1}{2!}+--+\ \frac{1}{n!}$
    a)e b)0 c) d)None
18. Lim $\frac{1}{n^p}$ = _____ for p>o
    a)I b)0 c)3 d)2
19. If Sn is not bounded below then lim inf Sn=_____
    a)+∞ b)0 c)∞ d) 1
20. Lim suplsnl =0 $\Leftrightarrow \lim S_n$ =_____
    a)0 b)1 c)2 d)∞

II. Fill in the blanks

1. Every convergent sequence is **Bounded**
2. Every Cauchy seq is **Bounded**
3. A sequence converges it if is a **Cauchy sequence**
4. If Sn is unbounded increasing sequence then Lim Sn= **+∞**
5. $\varepsilon\frac{1}{n} =$ **+∞**
6. Every bounded sequence has **Convergent** subsequence
7. If Sn converges to 'S' then its subsequence S_{nk} Converges to **Same limit**
8. Lim $2^{1/n}$ = **1**
9. Every monotonic sequence is **Not Oscillatory**
10. A constant sequence is **Convergent**
11. All Cauchy sequences are **convergent**
12. If lim Sn = l then lim (S_1, S_2 - - Sn)$^{1/n} = \underline{l}$
13. If lim Sn = l then lim $\frac{S_1+S_2+---+S_n}{n} = \underline{l}$
14. Every subsequence of a convergent sequence **Convergent**
15. Every bounded **monotonic** sequence converge
16. If εun is convergent then limun = **o**
17. A decreasing sequence is convergent if **convergent**
18. The series $\frac{1}{2}+\frac{2}{3}+\frac{3}{4}+\frac{4}{5}+-\ -\ is$ **Divergent**
19. Lim $(1+\frac{x}{n})^n$ =___e_____$\forall x\epsilon R$
20. If εUn is conditionally convergent then εUn is **Divergent**

III. Descriptive Questions

1. Write squeeze (sandwich) theorem?
2. Every monotone sequence is convergent?
3. Write ratio test ?
4. Write alternating series theorem?
5. Write Cauchy general principal theorem?