

SELF ASSESSMENT TEST -6**CLASS B.A/B.SC-2****SERIES**

1. Illustrate by a suitable exp that Cauchy's Root test is better than D'Alembert Ratio test.
2. Discuss the cgs or div. of $2x + \frac{3x^2}{8} + \frac{4x^3}{27} + \dots$.
3. Discuss the cgs or div of $\sum \frac{3^n n!}{n^n}$.
4. Discuss the cgs or div of $\sum \frac{x^{n-1}}{1+x^n}$, $x > 0$.
5. Show that the series $\sum \frac{(-1)^n (n+2)}{2^{n+5}}$ is absolutely cgt.
6. Discuss the cgs of $\sum \frac{(n!)^2}{2n!} x^n$, $x > 0$.
7. Discuss the cgs or div of $1 + \frac{1}{2} \cdot \frac{x^2}{4} + \frac{1.3.5}{2.4.6} \cdot \frac{x^4}{8} + \frac{1.3.5.7.9}{2.4.6.8.10} \cdot \frac{x^6}{12} + \dots$.
8. Discuss cgs or div of $1 + \frac{\alpha.\beta}{1.\gamma} x + \frac{\alpha(\alpha+1)\beta(\beta+1)}{1.2.\gamma(\gamma+1)} x^2 + \dots$, $x > 0$.
9. Discuss the cgs or div of $1 + \frac{2x}{2!} + \frac{3^2 x^2}{3!} + \frac{4^3 x^3}{4!} + \dots$, $x > 0$.
10. Discuss the cgs or div $1 + \frac{\alpha}{1.\beta} x + \frac{\alpha(\alpha+1)^2}{1.2.\beta(\beta+1)} x^2 + \frac{\alpha(\alpha+1)^2(\alpha+2)^2}{1.2.3.\beta(\beta+1)(\beta+2)} x^3 + \dots$