Course Code : 3BSC5
Course: Mathematics –III
Credit: 4
Last Submission Date : April 30 (for January Session)
October 31, (for July session)

Max.Marks:-30
Min.Marks:-10

Note:-attempt all questions.

Que1.   Show that the sum and product of two Cauchy sequences are cauchy sequence.

Que2.   Define convergent & divergert sequnce show that if

$a_n=\sqrt{n+1} - \sqrt{n}$, then $\lim_{n \to \infty} a_n = 0$

Que3.   State & prove cauchy mean value theorem.

Que4.   Evaluate $\lim_{x \to \infty} \frac{x^2-2}{x^2+7x+12}$

Que5.   Express f (c) $= 4x^3 +6x^2 + 7x + 2$ is terms of Legendre polynomials.

Que6.   Find the power series solution of

(1-x^2) $y^{11} - 2xy^1+$, 2y =0 about x=0

Que7.   Evaluate $\int_0^\infty \frac{e^t \sin t}{t}$ dt

Que8.   Using wnvolution theoreng, find $l^{-1} \left[\frac{5^2}{(s^2+a^2)(s^2+b^2)} \right]$, a≠b.

Que9.   Six forces each equal to p, at along the edges of a cube, taken in order which do not

meet a given diagonal shot, taken in order which do not meet a given diagonal show

that their resultant is a couple of moment $\sqrt[2]{3}$ pa, where a is the edge of the cube.

Que10.   State and prove Lami's theocracy.