Course Code : 6BSC5
Course: MATHEMETICES-VI
Credit: 4
Last Submission Date : October 31, (for January session)
April 30 (for July Session)

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

Note:-attempt all questions.

Que1.   Define open and closed ball. Show that a closed ball in R is a closed interval.

Que2.   Define cauchy sequence in metric space (x,d) and show that the $seq^n < (-1)^n >$
        is not a cauchy sequence in R

Que3.   Prove that the continues image of a connected metric space is connected.

Que4.   Define uniform continuity of a function and show that if a function f is uniformly
        continuous on a metric space X, then it is continuous on X. The converse need not be
        true.

Que5.   Find root of the equation using secant method correct to three decimal places.
        $F(x) \equiv x^3 + x^2 + x + 7 = 0$.

Que6.   Find polynomial using newton's divided difference formula

x→	-1	0	1	3
F(x) →	2	1	0	-1

Que7.   Using Gauss seidal iteration method solve
        20x+y-2z=17; 3x+20y-z=-18; 2x-3y+20z=25

Que8.   Apphy R-K method of fourth order to find and approximate value of y when x=0.2
        Given that $\frac{dy}{dx}$ = x+y and y=1 when x=0

Que9.   Find the median wage of the following distribution.

Wage (in Rs.	20-30	30-40	40-50	50-60	60-70
No. Of labours	3	5	20	10	5

Que10. Calculate the first four moments about the mean for the following distribution.

Variates	1	2	3	4	5	6	7	8	9
Freqnency	1	6	13	25	30	22	9	5	2