

Shri Shankaracharya Institute of Professional Management & Technology

Department of Applied Mathematics

Remedial Class Test – I Session: JUL - DEC 2023 Month - NOV 2023

B. Tech. V Semester (Common for All Branch)

Subject: Mathematics III (Backlog)

Code: –

Time Allowed: 2 Hours

Max Marks: 40

Note: - Solve Any Five Questions.

Q. N.	Question	Marks	Levels of Blooms Taxonomy	COs
Q 1	Construct a polynomial for the data given below and also find $f(7)$. $x: 4 \quad 6 \quad 8 \quad 10$ $y: 1 \quad 3 \quad 8 \quad 16$	[6+2]	Remember & Apply	CO5
Q 2	From the following table by applying suitable central interpolation formula estimate the value of $\tan 16^\circ$ (Calculate for 4 places of decimal) $x^\circ : 0 \quad 5 \quad 10 \quad 15 \quad 20 \quad 25 \quad 30$ $y=\tan x : 0 \quad 0.0875 \quad 0.1763 \quad 0.2667 \quad 0.3640 \quad 0.4663 \quad 0.5774$	[8]	Remember & Apply	CO5
Q 3	From the following table find $f(x)$ and hence find $f(6)$ by applying Newton's divide difference formula. $x: 1 \quad 2 \quad 7 \quad 8$ $y: 1 \quad 5 \quad 5 \quad 4$	[4+4]	Remember & Apply	CO5
Q 4	In a bombing action there is 50% chance that any bomb will strike. Two direct hits are needed to destroy the target completely. How many bombs are required to be dropped to give a 99% chance or better of completely destroying the target?	[8]	Remember & Apply	CO4
Q 5	Fit a Poisson's distribution to the following (Calculate for 2 places) $x: \quad 0 \quad 1 \quad 2 \quad 3 \quad 4$ $f(x): \quad 46 \quad 38 \quad 22 \quad 9 \quad 1$	[8]	Remember & Apply	CO4
Q 6	In a normal distribution, 31% of the items are under 45 and 8% items are above 64 find the mean and standard deviation of the distribution.	[8]	Remember & Apply	CO4