**Internal Assignment**

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| **SESSION** | **APRIL 2025** |
| **PROGRAM** | **Bachelor of CoMPUTER APPLICATIONS (BCA)** |
| **SEMESTER** | **I** |
| **course CODE & NAME** | **Fundamentals of Mathematics (DCA1105)** |
| **CREDITS**  | **4** |
| **nUMBER OF ASSIGNMENTS & Marks** | **02 Sets & 30 Marks** |

***Please read the below instructions carefully before proceeding further:***

* Learners are instructed to download the IA Question Paper, prepare the answers (Soft Copy), and submit them through Learning Management System (LMS) Portal
* **The last IA assignment submission date (Set-1 & Set-2 in a single file) is reflected in LMS only. This is the last date, and no further extension will be considered.**
* **Assignment submissions are accepted only in .pdf format.**
* Assignments must be **typed** and **formatted** as per the following specifications:
	+ Page Margin – 1 inch on all sides
	+ Page Orientation – Portrait
	+ Page Size – A4
	+ Font Family - Times New Roman
	+ Font size - 12
	+ Alignment - Justified.
* The total page limit shall not exceed 12 pages.
* **Answers for 10-mark questions should be approximately 400-500 words and not more than 200-250 words for 5-mark questions.**
* The average of both assignments’ marks scored by the learner will be considered Internal Assessment Marks.
* Only ONE submission is allowed per assignment.
* Please restrict the assignment document size to <2 MB. Avoid inserting images of very high resolution into the document to remain within the size limit. The assignment response document should NOT contain color images or highlighting of text content.
* Upon successfully submitting IA in LMS, learners can verify the document submitted against each course using the preview tab. If the file submitted has been corrupted or the wrong document submitted, it will not be considered for evaluation.
* If the learner resubmits the assignment, it is permissible only on or before the cut-off date, and the last submission will be considered for evaluation purposes.
* **Content that has been directly copied from the Internet/SLM and Assignments that have been copied and shared among students will be automatically rejected and disqualified.**

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| **Set-I** |
| **Q. No** | **Questions** | **Marks** | **Total Marks** |
| **1.** | Write the composite function $f(g\left(x\right))$ if1. $f\left(x\right)=x^{2}$ and $g\left(x\right)=2x+1,$
2. $f\left(x\right)=x+1$ and $g\left(x\right)=x^{3}+\sin(x)$.
 | **5 + 5** | **10** |
| **2.** | Evaluate the followings:(i) $\lim\_{n⟶\infty }\frac{3n^{2}+4n+7}{2+3n+4n^{2}}$ (ii) $\lim\_{x⟶2}\frac{x^{2}-3x+2}{x-2}$ | **5 + 5** | **10** |
| **3.** | Find the value of $\cos(75)$ and $\tan(15)$. | **5 + 5** | **10** |
| **Set-II** |
| **Q. No** | **Questions** | **Marks** | **Total Marks** |
| **4.** | Decompose $\frac{x^{2}+x+1}{ (x-1)(x+2)} $into partial fraction. | **10** | **10** |
| **5.** | Consider the function $f(x)=x^{3}-3x^{2}+2$. Determine where the function is increasing or decreasing. | **10** | **10** |
| **6.** | Determine the value of the following logarithms: (i) $log\_{25}5$ (ii) $log\_{7}$1  | **5 + 5** | **10** |