

M.Sc. (MATHEMATICS WITH APPLICATIONS IN COMPUTER SCIENCE)**M.Sc. (MACS)****Term-End Practical Examination**

00336

December, 2014

MMT- 001(P) : PROGRAMMING AND DATA STRUCTURES

Time : 2 hours

Maximum Marks : 50

Note : There are two questions in this paper totalling 40 marks. Answer both of them. Remaining 10 marks are for the Viva-Voce.

1. Write a C program that approximates $(1 - x)^{-r}$ for $r > 0$ and $-1 < x < 1$ by computing the first n terms of the series :

$$(1 - x)^{-r} = 1 + rx + \frac{r(r+1)}{2!} x^2 + \frac{r(r+1)(r+2)}{3!} x^3 + \dots$$

Compare your answer with the exact value of $(1 - x)^{-r}$ using the library function pow (...). 20

2. Write a program that reads an expression from the terminal and checks if the brackets are properly matched. Your program should use stack data structure. 20
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