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|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|--------------------|-----------|-------------------------------------------------------------------------------------|
| Subject<br>Code:<br>PC602IT                                                       |                                                                                                                                                                                          |              |                    |           | AY:2024-25                                                                          |
|  | <b>MATRUSRI ENGINEERING COLLEGE</b><br><b>(An Autonomous Institution)</b><br><b>16-1-486, Saidabad, Hyderabad-500059</b><br><b>(Approved by AICTE, Affiliated to Osmania University)</b> |              |                    |           |  |
| <b>Department of Information Technology</b>                                       |                                                                                                                                                                                          |              |                    |           |                                                                                     |
| <b>B.E. VI-SEM Assignment -I</b>                                                  |                                                                                                                                                                                          |              |                    |           |                                                                                     |
| <b>Subject: DAA (PC602IT)</b>                                                     |                                                                                                                                                                                          |              | <b>Marks: 10 M</b> |           |                                                                                     |
| <b>S.No.</b>                                                                      | <b>Questions</b>                                                                                                                                                                         | <b>Marks</b> | <b>BL</b>          | <b>CO</b> |                                                                                     |
| 1                                                                                 | Prove that $4.2^3 + 2n^2 = O(n^3)$                                                                                                                                                       | 2 M          | L2                 | CO1       |                                                                                     |
| 2                                                                                 | Prove that $3^n \neq O(2^n)$                                                                                                                                                             | 2 M          | L2                 | CO1       |                                                                                     |
| 3                                                                                 | What is space complexity? Write an algorithm for adding n natural numbers and find the space required by that algorithm.                                                                 | 3M           | L2                 | CO1       |                                                                                     |
| 4                                                                                 | Give short notes on Asymptotic notation                                                                                                                                                  | 3 M          | L1                 | CO1       |                                                                                     |