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| **Continuous Assessment Test (CAT II Syllabus)** | | | | | | | | |
| Programme | | | : | **M.Tech., (SDM)** | Semester | : | **III & IV** | | |
| Course | | | : | **Mathematical Foundation for Computer Science** | Code | : | **MAT5** | | |
| Faculty | | | : | **Dr. S. Hariharan** | Slot(s) | : |  | | |
| Time | | | : | **1½ Hours** | Max. Marks | : | **50** | | |
| **Answer ALL** | | | | | | | | |
| 1. |  | Find an integer x such that x≡ (mod 15),  x≡ (mod 17) and x≡ (mod 7) | | | | | | [14] | | |
| 2. | a)  b) | Factor    H  Check whether the graphs G and H are Bipartite? If so, draw the bipartite graph. Otherwise justify your answer | | | | | | [6]  [6] | | |
| 3. | a)    b) | Prove that is always divisible by 6 whenever n is an integer.    Check whether the graphs G and H are Isomorphic or not? Justify your answer. | | | | | | [5]  [7] | | |
| 4. | a)  b) | The degree sequence of a graph is the sequence of the degrees of the vertices of the graph in non increasing order. Is there a graph with the following degree sequence (5, 2, 2, 2, 2,  1)? Draw such a graph if it exist.  Find the preorder, inorder and postorder expressions of the following tree | | | | | | [6]  [6] | | |