M.Sc. (MATHEMATICS WITH APPLICATIONS IN COMPUTER SCIENCE) M.Sc. (MACS)

Term-End Practical Examination

00128   December, 2017

MMTE-001(P) : GRAPH THEORY

Time : 1$\frac{1}{2}$ Hours   *Maximum Marks : 40*

Note :   *There are two questions in this paper, totalling 30 marks. Remaining 10 marks are for the viva-voce. All the programs are to be written in C-language.*

1. (a) Write a program that prints the adjacency matrix of a graph, given a sequence of edges as inputs.

   (b) Use the program to find the adjacency matrix for a graph with the following edge set :

   (1, 3), (2, 4), (3, 5), (4, 6), (6, 2), (3, 4), (4, 2), (1, 4)   *6+4=10*

2. (a) Write a program that checks whether a given graph is bipartite.

   (b) Use it to check whether the graph in 1(b) is bipartite or not.   *20*