

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

M.Sc. (MACS)

Term-End Practical Examination

December, 2015

MMTE-001(P) : GRAPH THEORY

Time : $1\frac{1}{2}$ hours

Maximum Marks : 40

Note : (i) *There are **two** questions in this paper, totalling 30 marks. Answer **both** questions.*

(ii) *Remaining 10 marks are for the viva-voce.*

(iii) *All the programs are to be written in **C-language**.*

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1. Write a program that reads the vertices and edges of a graph from the command line and constructs and prints the incidence matrix of the graph. Use it to print the incidence matrix of the graph, given a sequence of edges as inputs : 10

(2, 4) (4, 3) (2, 1) (1, 5) (2, 3) (5, 6) (6, 1) (5, 4)

2. Write a program that checks whether a given graph is bipartite. Use it to check whether the graph in Q.1 is bipartite. 20
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