

00450

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

**Term-End Practical Examination**

**June, 2016**

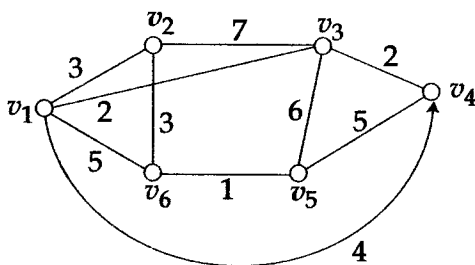
**MMTE-001 (P) : GRAPH THEORY**

*Time : 1½ hours*

*Maximum Marks : 40*

*Note : There is one question in this paper with two parts totalling 30 marks. Remaining 10 marks are for the viva-voce. All the programs are to be written in C-language.*

1. (a) Represent the following weighted graph 10  
using adjacency list :



- (b) Apply Dijkstra's algorithm to find the shortest paths from  $v_1$  to all the other vertices. 20