

M.E. Computer Science and Engineering  
1<sup>st</sup> Year, 1<sup>st</sup> Semester, 2024-2025  
ELECTRONIC DESIGN AUTOMATION

Full Marks : 100

Time : 3 Hrs

Answer any FIVE (5) questions. Write answers to the point.  
ALL PARTS OF A QUESTION SHOULD BE ANSWERED TOGETHER

(Q1) Write short notes on any two

- (a) Layout Compaction - Problem statement and its formulation
- (b) Circuit Partition and its implications in VLSI design
- (c) Layout rules for designing a circuit

(Q2) (a) Discuss the Kernighan-Lin algorithm.

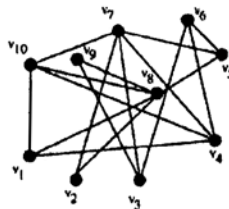


Figure 1:

- (b) Partition the graph shown in Figure 1, using Kernighan-Lin algorithm.
- (Q3) (a) What are the primary differences between global routing and detailed routing?  
(b) What is the running time of Lee's maze router when there is only one two-terminal net in an  $n \times n$  grid and the rectilinear distance between the two terminals is  $d$ ? For of  $n$  and depends what configuration of obstacles is the running time independent only on  $d$ ?
- (Q4) (a) What types of checks are performed during the physical verification stage?  
(b) What is Gajski's Y-Chart? Explain the Chart
- (Q5) (a) What are slicable and non-slicable floorplanning?  
(b) What is the hierarchical defined floorplanning?
- (Q6) (a) What is the difference between maze routing and line probe algorithm?  
(b) Describe the Lee's Algorithm with an algorithms and it's complexity?
- (Q7) (a) What is the channel routing problem? What is it's objective?  
(b) What are the key constraints which are to be satisfied while assigning the horizontal and vertical segments in channel routing?