

Justify all answers, except where stated.

- (1) [20 points]. Circle all the correct answers.

Let G be a graph. $\text{Aut } G$ is:

- (a) a number.
- (b) a function.
- (c) an automorphism.
- (d) a set.
- (e) a group.

- (2) [10 points]. Find $\text{Aut } K_n$ (no proof, just state the answer, clearly and precisely).

- (3) [5 (each) points]. How many things are wrong with the following statement?

Let G be a graph. In the line graph $L(G)$, edges become vertices and vertices become edges.

- (4) [20 points]. Circle all the correct answers.

If the vertex set V of a graph is partitioned into V_1, V_2, \dots, V_r , then each set V_i is

- (a) a subset.
- (b) a partition.
- (c) a part.
- (d) a party.
- (e) a partite set.

- (5) [5 (each) points]. How many things are wrong with the following statement?

Let G be a graph with vertex set $V = \{v_1, v_2, \dots, v_n\}$. The identity automorphism of G is the function α given by $\alpha(v_i) \rightarrow v_i$.