MCA Sem II
Minor retest

MCA-202 DM
MINOR

Max Marks : 20

Q1. The number of connected components in a connected graph is..... 1 ..... (1)

Q2. The vertex connectivity of a disconnected graph is ..... (1)

Q3 How many spanning subgraphs of a graph G are also vertex induced? Explain. 1 (2)

Spanning subgraph
- vertex set frozen
- Edges may be dropped

vertex induced
- flexibility
- no flex

Q4. Argue that the shortest walk between two vertices is a path. Remove cycles. (3)

Q5. G=(V,E) is a simple graph. Show that $2|E| \leq |V^2|-|V|$. (3)

Q6. How many perfect matchings are there in a complete graph of 6 vertices? $\frac{{}^6C_3 \times 3 \times 2}{2}$ (3)

Q7. How many edges would the complement of a complete bipartite graph $K_{m,n}$ have? $\frac{n(n-1)}{2}$ Edges in K_m + $\frac{m(m-1)}{2}$ Edges in K_n (3)

Q8. A relation R is defined on the set of integers as xRy iff (x+y) is even. Is R an equivalence relation? If yes, how many equivalence classes does it have? (4)

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