Answers should be brief, clear and precize.

1. Define an algebraic function field.

2. Describe a discrete valuation ring by property of maximal ideals.

3. Write an example of a normalized discrete valuation on a fraction field $K(x)$.

4. Find all singular points of a Weierstrass equiation polynomial $y^2 - (x-2)^3$ over $\mathbb{R}$.

5. Find prime ideals $0 \neq P \subsetneq Q$ of the ring $\mathbb{F}_3[x, y]$.

6. What is m-weighted multiplicity μ of a polynomial $a(x,y)$?

7. Formulate The Weak Approximation Theorem.

8. Define the group of divisors.

9. What is Weil differntial?

10. Characterize elliptic Weierstrass equiation polynomials by singularity/smoothness.