

B.R.A.Bihar University Muzaffarpur

M.Phil Mathematics

Session -2014-15

Assignment Questions

Paper -I

Full Marks-30

किन्ही तीन प्रश्नों का जबाव दें | सभी प्रश्नों का मान बराबर है |

1. What do you mean by research? Explain its significance in modern time.
2. What are the criteria of good research?
3. What is a computer virus? Explain different ways to handle computer virus.
4. What are the functions of windows explorer?

Paper -II

1. Let F be any sub field of K & G any group of automorphism of k . then prove that the fixed field of G is a sub field of K .
2. Prove that any two finite fields having same number of elements are isomorphic.
3. Prove that every absolutely continuous function f define on $[a,b]$ is of bounded variation.
4. Examine the stability of null solution of system whose perturbed equation of motion is given by:
$$dx/dt = -ay \text{ and } dy/dt = ax$$

Paper -III

1. Obtain isotropic line element in Cartesian form.
2. Write short notes on (a) de-Sitter's cosmological model (b) Equality of gravitational & inertial mass.
3. Obtain isotropic time element in Cartesian form.
4. State and prove Lyapunov theorem on asymptotic stability.
5. State and prove second theorem on instability of non- autonomous system.
6. State and prove fourth theorem on stability of an autonomous system.
