

Khatra Adibasi Mahavidyalaya
Internal Assessment-2nd Semester-2020
Subject:-Mathematics (Hons)
Paper-201 :Core-3, F.M.-10

1 Answer any two

2x2=4

- (a) Define countable set. Show that the set of all integers is countable.
- (b) Define limit point of a set. Discuss about the limit points of the set of all Rational numbers .
- (c) Show that the $\{\frac{1}{n}\}$ is a cauchy sequence.
- (e) Show that the series $\frac{1}{1.2} + \frac{1}{2.3} + \frac{1}{3.4} + \dots$ is convergent.

2 Answer any one

6x1=6

- (a) Write a short note discussing about the Open set and Closed Set of Real numbers.
- (b) Discuss about the of Convergent and bounded sequence of reals. Also discuss about their relationship.
- (c) What do you know about Geometric series. Give an example of a series and prove its convergence using Cauchy's Criterion.