CLASS: IMSC   SEMESTER : IX
BRANCH: MATHS & COMPUTING   SESSION : MO/2024

SUBJECT: MA501 FUNCTIONAL ANALYSIS

TIME: 3 Hours   FULL MARKS: 50

INSTRUCTIONS:
1. The question paper contains 5 questions each of 10 marks and total 50 marks.
2. Attempt all questions.
3. The missing data, if any, may be assumed suitably.
4. Before attempting the question paper, be sure that you have got the correct question paper.
5. Tables/Data hand book/Graph paper etc. to be supplied to the candidates in the examination hall.

Q.1   State and prove Holder's Inequality in a metric space.   [10]

Q.2   State and prove Hahn – Banach separation theorem.   [10]

Q.3   State and prove closed graph theorem.   [10]

Q.4   State and prove parallelogram law theorem in an inner product space.   [10]

Q.5   Describe a Hilbert space with an example.   [10]

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