Name: ..... **Class: MSc-III** **Reg. No.:** .....

Quiz 1: Real Analysis II

Instructions:

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Question 1 If f is continuous on $[a,b]$, then it is ..... on $[a,b]$

- ☐ non-zero
- ☐ unbounded
- ☐ differentiable
- ■ bounded

Question 2 Let P and Q be two partitions of $[a,b]$ and P is refinement of Q. Then

- ☐ $P \neq Q$.
- ☐ $P \subset Q$.
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Question 3 Let P_1 and P_2 be two partitions of $[a,b]$ and P_2 is refinement of P_1. Then

- ☐ $\|P_1\| \leq \|P_2\|$.
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- ☐ $\|P_1\| \neq \|P_2\|$.
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Question 4 Let $P = \{1,2,4,7,10\}$ be partition of interval $[1,10]$, then

- ☐ $\|P\| = 2$.
- ☐ $\|P\| = 1$.
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Question 5 If α and β be upper and lower bounds of f on $[a,b]$ respectively, then

- ☐ $\alpha \leq f(x) \leq \beta \ \forall \ x \in [a,b]$.
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- ☐ $\sup U(P,f,\alpha)$.
- ☐ undefine.
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Question 8 Which is/are improprer integral(s) of second kind:

(A) $\int_0^1 \frac{1}{x} dx$ (B) $\int_1^2 \frac{1}{x^2-1} dx$ (C) $\int_{-1}^1 \frac{2x+1}{x-2} dx$

- ☐ A and C only.
- ☐ B only.
- ■ A and B only.
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Question 9 Which is/are improper integral(s) of first kind:

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