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

Quiz 3: Real Analysis II

Instructions:

- Please choose the most correct option by filling or ticking or crossing the box.
- Spoiled or overwritten selection has no credit.

Question 1 If the sequence of functions is .... convergent, then it is .... convergent.

■ uniformly; piecewise

□ piecewise; uniformly

Question 2 If $f_1, f_2, f_3, \ldots$ are continuous, then choose f so that f may not continuous.

□ $f = f_1 + f_2 + \ldots + f_n$

□ $f = f_1 + f_2 + \ldots + f_{100}$

■ $f = f_1 + f_2 + f_3 + \ldots$

Question 3 If $\left\{f_n(x) = \frac{1}{x^n}\right\}$ be sequence of functions defined on $I := [2, 10]$, then $\max\limits_{x \in I} f_n(x) =$

■ $\frac{1}{2^n}$ □ 2^n

□ $\frac{1}{10^n}$ □ 10^n

Question 4 $\exp(ab) \leq \exp(ac)$ iff

□ $a < 0$ and $b \leq c$. □ $a \geq 0$ and $b \geq c$.

■ $a < 0$ and $b \geq c$. □ $a > 0$ and $b \geq c$.

Question 5 A concept of uniform convergence doesn't exist in

□ sequence of functions.

□ series of functions.

■ sequence of numbers.

Question 6 A series of functions $\sum f_n$ is said to be converges uniformly on $[a, b]$ if the sequence of functions $\{s_n(x)\}$, where $s_n(x)$=.................., is uniformly convergent on $[a, b]$.

□ $\sum_{i=1}^{n} f_n(x)$ ■ $\sum_{k=1}^{n} f_k(x)$

□ $\sum_{i=1}^{\infty} f_i(x)$ □ $\sum_{n=1}^{\infty} f_n(x)$

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☐ 10^n ■ $\dfrac{1}{2^n}$

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☐ $a > 0$ and $b \ge c$. ■ $a < 0$ and $b \ge c$.

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- [ ] 10^n
- [ ] $\dfrac{1}{10^n}$
- [ ] 2^n

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- [ ] $a \geq 0$ and $b \geq c$.
- [ ] $a < 0$ and $b \leq c$.
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